IN THE SUPERIOR COURT OF WASHINGTON FOR KING COUNTY

STATE OF WASHINGTON,

Plaintiff

v.

KAI LIGHT,

Defendant

No. 21-1-00012-9 SEA

MOTION TO EXCLUDE IMPROPER OPINION TESTIMONY ON MANNER OF DEATH

"[W]e would suggest that you, uh, you know, ask your judge or whatever. Uh, Harruff would be happy to not talk about the word homicide because why argue about one little word when it is clearly an opinion from one person or from two people."

-Dr. Richard Harruff, King County Medical Examiner, Defense Interview 2 for Kai Light.

Dr. Harruff said it, so here we are. Mr. Light, by and through undersigned counsel, moves for the court to preclude Dr. Norman Thiersch and Dr. Richard Harruff, from offering an opinion on the manner of death in this homicide trial, because it is a non-expert opinion that is not helpful to the trier of fact. This motion is based off of Evidence Rules 701, 702, and 703, *State v. Cauthron*, 120 Wash. 2d 879, 885, 846 P.2d 502, 504–05 (1993), *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), *State v. Quaale*, 182 Wash. 2d 191, 199, 340 P.3d 213, 217 (2014) the fifth, sixth, and fourteenth amendments of the United States Constitution, and article 1, sections seven and twenty two of the Washington state constitution.

Signed this Monday, September 16, 2024,

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I. THE QUESTION PRESENTED

Criminal defendants have the right to have a jury independently determine facts at a trial, pursuant to the sixth amendment of the U.S. Constitution. If a witness at trial offers an opinion on an ultimate issue in a way not provided for by court rule, he improperly opines on a defendant's guilt. In this murder trial, the State is calling two medical examiners to say that the decedent's death was a homicide. But their opinion would not be based on medical expertise, nor on any specialized training, knowledge, or experience.

Should the court preclude the medical examiners from offering a non-medical, unscientific opinion on how they think the decedent died?

II. DECLARATION OF COUNSEL

I, Vincent Hooks, am one of the assigned attorneys for Mr. Kai Light. I am above the age of 18 and competent to testify in the State of Washington. I hereby declare the following is true and correct to the best of my ability.

A. Ms. McDonald's Gunshot and Injury

At 5:29 PM, a single shot shakes the quietude of the Magnolia neighborhood on March 2, 2021. Moments later, what sounds like a male voices cries out. The calls to 911 came in quick. The first, from Kai Light's sister Lilliana, begins with a scream. There's an audible panic in Ms. Light's voice as she tells the 911 dispatcher that medical assistance is needed at her house, because her brother's girlfriend, Mariah McDonald, had shot herself. A couple moments pass,

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and Mitch Light, Kai Light's father, calls in, saying he understands that his son's girlfriend has shot herself, and help is needed at the house immediately.

When first responders arrived, they found Ms. McDonald slumped over on the floor in the basement of the Light residence. She was wearing a large jacket, and was demonstrating the capacity for short, quick breaths. Extensive bleeding is visible on the floor near her head. As captured on body-worn video, Ms. Hargis was over her body, apparently frantic, relaying short words to Ms. McDonald, but she was not responding to them. The EMTs swooped Ms. McDonald onto a gurney as soon as they could. Their goal was to get her out of the house as quickly as possible, in order to start treatment as quickly as they could. Ms. McDonald was taken to Harborview Medical Center for emergency surgery.

Because of the report of the gunshot wound, Seattle Police Officers Beard and Kiehn were dispatched to the scene. Initially, in speaking with Ms. Hargis, it was unclear who had been in the house at the time of the shooting. But in speaking with Liliana, law enforcement came to understand that Mr. Light had been in the house earlier that day. Ms. Hargis clarified that she had heard some arguing between Mr. Light and Ms. McDonald earlier in the day, but that was the extent of what she could offer. In conducting a cursory search of the basement, Officers Beard and Kiehn could not locate a gun. Given that Mr. Light was not at the house, and no gun was present, the officers determined this should turn into a homicide investigation. Several other law enforcement officers were called to the scene, search warrants were obtained, the house was canvassed for evidence, and the night of September 2, 2021, law enforcement functionally investigated this as a homicide though Ms. McDonald was still at that point in time alive.

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On September 3, 2021, Kai Light turned himself in to Seattle Police Headquarters. During processing, one of his first questions to police was whether his girlfriend was going to be okay. When detectives sought to interrogate him, he asked for an attorney almost immediately.

Ms. McDonald would survive an additional 18 days, before ultimately being taken off life support.

B. Dr. Norman Thiersch's Cause and Manner of Death Determinations

Dr. Norman Thiersch, M.D., was assigned to conduct the autopsy for Ms. McDonald's body. As part of his autopsy, there were two components Dr. Thiersch was responsible for: identifying a cause of death, and then categorizing a manner of death. As Dr. Thiersch explained in his interview with defense counsel, "[t]he cause of death is like a heart attack, cardiovascular disease, pneumonia, blunt force injury… [m]anner of death is just what category you place the cause of death in." Dr. Thiersch Defense Interview, Page 10, *Attachment A*. Dr. Thiersch explained that one determines a cause of death by doing the autopsy, by identifying what is injured, what is failing, and determining what is "causing them to die." Dr. Thiersch Defense Interview, Page 11. The training for identifying a cause of death comes from "going to medical school, learning about . . . disease and pathology, what diseases kill people, what things kill people." Dr. Thiersch Defense Interview, Page 12.

But compared to cause of death, manner of death is a "way to classify the causes of death," where one would look at a situation and say "Is this natural, is this unnatural, is this suicide, is this a homicide, or something that is undetermined?" Dr. Thiersch Defense Interview, Page 12. In his practice, he relies on five general categories for classifying a manner of death: natural causes, accident, suicide, homicide, or undetermined. Concerning the first two, natural death is "something that is not caused by another individual, not caused by another person's

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actions or their own actions." Dr. Thiersch Defense Interview, Page 12. Accident, that is "causes of death that usually are… not naturally occurring, like a car crash." Dr. Thiersch Defense Interview, Page 12. Then, there's the distinction between suicide and homicide: for Dr. Thiersch, suicide is "an unnatural death, and typically caused by one's own actions that result in one's death." Homicide, conversely, is "typically looked at as the actions of another individual, resulting in another person's death." Dr. Thiersch Defense Interview, Page 13. Finally, if a death is labelled as "undetermined" it means that "there's not enough information about the circumstances or about -- or the process that's causing someone to die. It's unclear exactly how that occurred, whether that's from somebody else's actions or not, or whether there's something else going on, and your -- you can't decide." Dr. Thiersch Defense Interview, Page 13.

Dr. Thiersch told defense counsel that there's a distinction between the two standards as to levels of proof required. For cause of death, Dr. Thiersch says there needs to be enough evidence for a determined cause to be "more likely than not." Dr. Thiersch Defense Interview, Page 15. But, there is no defined level of certainty for categorizing a situation into a manner of death. Dr. Thiersch Defense Interview, Page 15.

When asked how he determines a manner of death, Dr. Thiersch said "[i]t's based on what the circumstances are and based on what the disease process or injuries that are there on the body." Dr. Thiersch Defense Interview, Page 14. Defense counsel asked Dr. Thiersch what this would mean in practice, to look at the circumstances: "[T]here's usually some sort of set of circumstances that are associated with somebody's death. That -- that information comes from law enforcement, or from the family, or there -- there's some indication of what happened to the person prior to their death." Dr. Thiersch Defense Interview, Page 16. When asked about what information Dr. Thiersch looks at when considering a manner of death determination, he said

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that King County Medical Examiner practitioners "try to get as much information as we can." Dr. Thiersch Defense Interview, Page 16. Dr. Thiersch indicated there are no guidelines the King County Medical Examiner's Office has for what information can and cannot be considered. Dr. Thiersch Defense Interview, Page 17. Similarly, KCME has promulgated no standards for what sources of information may be considered. Dr. Thiersch Defense Interview, Page 18.

Dr. Thiersch's own perspective on the role of manner of death is that having to make a manner of death determination is "imposed upon [medical examiners] by the Public Health System." Dr. Thiersch Defense Interview, Page 18. He clarifies "it's all for statistical purposes. That's why it's done." Dr. Thiersch Defense Interview, Page 19. As to what it means to determine a matter of death, he says that his role is to "classify the death… I'm not making a pronouncement… there's no really binding legal authority in what – in certifying deaths." Dr. Thiersch Defense Interview, Page 18. In follow-up, defense counsel asked Dr. Thiersch about having to make this determination, to which he said, "in some ways you're sort of forced to -- to put it into a certain category. You're -- you're forced to choose, which sometimes is -- is difficult." Dr. Thiersch Defense Interview, Page 19.

On manner of death classification, defense counsel asked Dr. Thiersch about how a case might be classified as "undetermined." Dr. Thiersch gave an example of someone who had taken an excess of medication, but having also been depressed, and not being able to tell whether "this is suicide or whether this is just accidental taking too much medication." Dr. Thiersch Defense Interview, Page 21. Another example involved bodily remains found in the woods, where one might know if this is "somebody that go lost, or was this someone that fell down, was this accident versus… overcome with natural disease." Dr. Thiersch Defense Interview, Page 21.

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Dr. Thiersch was asked specifically by defense counsel how classified the manner of death as a homicide here. With respect to materials reviewed in preparing a manner of death classification, Dr. Thiersch said he believed he reviewed an investigator's report. His understanding from the report was that "there was some sort of domestic violence some – some sort of interaction with the boyfriend." Dr. Thiersch Defense Interview, Page 29 – 30. Dr. Thiersch indicated that "there's a question of whether this was a self-inflicted gunshot wound versus somebody else shooting her . . . I think at some point the boyfriend admitted to – or – or admitted to shooting her. I think that was information that – that we had." Dr. Thiersch Defense Interview, Page 30. Of note, Mr. Light has never confessed to shooting Ms. McDonald, both because he didn't do it, and because he invoked his right to have an attorney present for questioning almost immediately.

Dr. Thiersch in his interview brought up the role that the 18 days between Ms. McDonald's injury and her death would have had on assessing her body's condition. Dr. Thiersch Defense Interview, Page 43 – 44. He explained in his autopsy that there was "medical therapy" so the wound had "been modified. Dr. Thiersch Defense Interview, Page 45. He noted in his autopsy that there was no "fouling" or "stippling" referring to indications to the skin of close-range gunfire. Dr. Thiersch Defense Interview, Page 46. But, he followed this up by indicating that because the autopsy was done 18 days after the time of shooting, it makes matters more "complicated" since this sort of information that may help determine range of fire can go away over time as it healed. Dr. Thiersch Defense Interview, Page 46.

When asked to explain how he arrived at the manner of death, Dr. Thiersch articulated that it was "mainly by circumstances that were surrounding this person's death. I mean, she was, I guess – I guess, eventually it was determined that she was shot by somebody else. Dr. Thiersch

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Defense Interview, Page 57 – 58. When asked how he came to learn this, he said "there was information to that effect on the Investigator's report." Dr. Thiersch Defense Interview, Page 58. As to information concerning blood spatter evidence, and whether it would have been helpful, Dr. Thiersch said "No . . . cause and manner is pretty clear of what – what – happened. I mean, as far as, you know, who – who had the gun and who pulled the trigger, that – I mean, that's really a, you know, sort of police, law enforcement investigative issue . . . I'm relaying on them for information about who had the gun." Dr. Thiersch Defense Interview, Page 58. Dr. Thiersch told defense counsel he did not recall speaking with the family in this case, thought he family may have had information that's important. Dr. Thiersch Defense Interview, Page 60. Rather, what he had was the "Investigator's report" which he recalled as saying "the boyfriend turned himself in and admitted to the – to the shooting. . . . [t]hat would make this homicide." Dr. Thiersch Defense Interview, Page 61.

Finally, when asked if he did any hypothesis testing, Dr. Thiersch was unequivocal: "the information was, you know, the boyfriend was responsible. . . . that's the information that I had. So, it's – it's a homicide." DI 63. Defense counsel also asked Dr. Thiersch what role the lack of weapon would play in making his manner of death determination, to which he responded: "The absence of a weapon does cause concern because, you know, after someone shot themselves, I mean the weapon typically doesn't move. So, what happened to the weapon?" Dr. Thiersch Defense Interview, Page 64.

C. Dr. Richard Harruff's Work on This Matter

In this matter, though, the State of Washington will also be relying on the testimony from the medical examiner who supervised the autopsy: Dr. Richard Harruff. Dr. Harruff sat down for three interviews with defense counsel (*Interview 1 is Attachment B, Interview is Attachment C,*

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Interview 3 is Attachment D). And over the course of these interviews, Dr. Harruff extolled his understanding on the history of manner of death classifications, and the ways in which he arrived at a manner of death here – and also what he sees as the easiest way of dealing with manner of death determinations in the court system.

On the topic of manner of death generally, Dr. Harruff's assessment for why they have to determine it is pretty straight forward: "[Because] they pay us just a bunch of money, it's an embarrassing amount of money they pay us, and, you know, we have to make a decision because that's what everybody wants." Harruff Defense Interview 1, Page 22. He brought up that this is the "difficult part" because we have to consider, you know, these questions that sometimes we don't know the answer to." Harruff Defense Interview 1, Page 22.

Concerning what information pertains to manner of death determinations, Dr. Harruff in his first interview explained that when talking about manner of death "oftentimes circumstances will be important for the unnatural death." Harruff Defense Interview 1, Page 12. He went on: "for example, a gunshot wound to the head, it could have been homicide, suicide, or accident . . . so we have to know what the circumstances are." Harruff Defense Interview 1, Page 12 – 13. Logistically, he said here somebody else investigated this event, "they supplied the information to Dr. Thiersch that was a sufficient basis to call it a homicide." Harruff Defense Interview 1, Page 13. Point blank, he said "[T]he investigating agency was SPD and Jennifer Petersen was representing the circumstances of the gunshot wound that led to her death. Now, so we don't know that independently. There's no way we can. So we're basing the manner of death on the circumstances that were reported to us." Harruff Defense Interview 1, Page 13 – 14. This was later followed up Dr. Harruff's clarification for the significance of a prosecutor's presence in a particular case: "that would have been a good indication that there was some concern that this is

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a homicide. Just her walking in would have been a big red flag of potential homicide." Harruff Defense Interview 1, Page 28.

Dr. Harruff was asked as well about the role bias could play in his determinations as well. When asked about the manner of death classification label of 'undetermined,' Dr. Harruff explained that though he's looking at scientific evidence, he would "consider the circumstantial evidence." He then said to defense counsel "you're gonna say, oh you're sounding so highly biased because the prosecutor is right in there talking to Dr. Theirsch and telling him to think and what to say. And I'm saying that, yeah, maybe so, but at some point that information seemed credible." Harruff Defense Interview 1, Page 17. Dr. Harruff go on to tell defense counsel that if we had a problem with it, that "why we have trials . . . so we're justifying your existence." Harruff Defense Interview 1, Page 17.

In this interview, Dr. Harruff talked about the specific circumstances that could have led to a manner of death classification of "homicide." He said to defense counsel that to do this, they'd have to seek out other valid sources of information, which would include police investigations, which they "consider . . . to be valid." Harruff Defense Interview 1, Page 21. He followed this up with: "You might want to consider them to be biased, but we consider them valid, because . . . that's their job, so we will accept that information. Harruff Defense Interview 1, Page 21. And when it came to talking about how solid his opinion was, he put it in these terms: "[i]f you're gonna tell me oh that's just like crazy stuff, I'd be happy, you know . . . if you're paying me, but, you know, since you're not, I'd just be happy to argue with you." Harruff Defense Interview 1, Page 36.

Dr. Harruff's second interview was focused on his own take on the manner of death here. When Dr. Harruff was asked about what data points were really critical to this case, his answer

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was "one fact is, that the gun is missing and never recovered, although we apparently have somebody that was present . . . those are the sort of things that I really wonder about that make me say, if we can't answer that question, we have to stick with our opinion that this is a homicide." Harruff Defense Interview 2, Page, Page 30.

Defense counsel asked Dr. Harruff about the role other information in this case may have played in the determination, such as evidence of the decedent's depression, or photographs of the decedent posing with guns – but Dr. Harruff made clear "it's been certified as a homicide . . . the certification was fairly based on what we knew at the time." Harruff Defense Interview 2, Page, 28. He said that he could not say "what the discussions would have been, had we known about [other information] at the time." Harruff Defense Interview 2, Page, 28. But it was perhaps at the end of this interview that Dr. Harruff put the issue most plainly:.

> "I'd have to wonder, why don't you just get -- stop getting hung up about this one word, homicide, and say, well, we would suggest that you, uh, you know, ask your judge or whatever. Uh, Harruff would be happy to not talk about the word homicide because why argue about one little word when it is clearly an opinion from one person or from two people. Why don't you just move on and look at the actual facts of the case and not rely on a word on an autopsy report." Harruff Defense Interview 2, Page, 28.

Defense counsel, after hearing this, concluded the interview soon after.

Dr. Harruff's third interview was focused more specifically on issues relating to wound-track, but did dovetail into Dr. Harruff's experience with what he understood to be suicide cases. At one point in the interview, Dr. Harruff referenced a "bell curve" about what his belief was on the probability that this could be a homicide versus a suicide. Harruf Defense Interview 3, 8. But, Dr. Harruff also clarified that the KCME in no way actually collects data about wound trajectory and suicide distinctions, does not reference data about wound trajectories and suicide/homicide distinctions from any national directories, and that he was relying solely on his own anecdotal

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evidence and understanding of the circumstances around the death. Harruff Defense Interview 3, Page, 18 – 19. And, Dr. Harruff again referenced the significance of no gun being at the scene. Harruff Defense Interview 3, Page, 21.

D. Dr. Jeff Kukucka, Ph.D., is retained by defense counsel as an expert on cognitive bias to evaluate the manner of death opinions in this case.

As part of defense's preparation for this case, the defense consulted with a cognitive bias expert, Dr. Jeff Kukucka, Ph.D. Dr. Kukucka works full-time as a professor at Towson University. Dr. Kukucka broadly focuses his research on the psychological causes of erroneous forensic science and medico-legal judgments. Dr. Kukucka has published peer-reviewed research on cognitive bias, subconscious bias, and the difficulties with disregarding irrelevant information in medico-legal decision-making, specifically in the realm of autopsies and on manner of death determinations.

Here, Dr. Kukucka was asked to evaluate Dr. Thiersch and Dr. Harruff's work in classifying a manner of death in this particular case, and to offer his expert opinion on how likely the manner of death classification in this case was tainted by cognitive bias. *Attachment E.* For this case, Dr. Kukucka reviewed the interviews with Dr. Thiersch and Harruff and the autopsy report, confining his analysis to just these materials to minimize the risk exposure to other materials could affect his opinions. As part of his report, Dr. Kukucka cited to a significant body of literature concerning cognitive bias in medico-legal judgements, including a study involving manner of death determinations between a suicide and a homicide. Kukucka Report, Page 9. That study sought to explore the ways in which collateral, non-medical information could affect manner of death determinations, such as national origin, a history of abuse, and alleged criminal

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involvement. Kukucka Report, Page 11. The study suggested a "dramatic" effect on expert determinations on manner of death. Kukucka Report, Page 11.

Dr. Kukucka's work here determined that Drs. Thiersch and Harruff were exposed to exactly the sort of non-medical, biasing information which the academic literature identified as being problematic in trying to guard against the risk of cognitive bias affecting a manner of death determination. Kukucka Report, Page 13. Dr. Kukucka isolated Dr. Thiersch's answers from his interview with defense counsel and found this strongly reflective of the concerns highlighted in prior studies about being exposed *a priori* to non-medical information before being asked to make a so-called medical judgement. Kukucka Report, Page 13.

Dr. Kukucka's ultimate findings about the value of the manner of death determination are unambiguous: "Dr. Thiersch's manner of death determination is not a 'medical' judgment in that it is not based on medical information that he is uniquely qualified to evaluate as a medical expert." Kukucka Report, Page 14. Dr. Kukucka, as a psychologist doing experimental work on how individuals make decisions, found that Dr. Thiersch's manner of death determination "by his own admission – is nothing more than acquiescence to the investigative theory of which he was aware before the autopsy, and it therefore carries no independent probative value." Kukucka Report, Page 14. "Dr. Tiersch's manner determination in this case should be given no weight." Kukucka Report, Page 15.

Signed and dated this September 16th, 2024.

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B. Argument

1. Improper opinion testimony that indirectly comments on a defendant's guilt violates a defendant's constitutional right to a fair trial – and manner of death testimony does just that.

No witness – be they lay or expert, gets to give an opinion about whether they think a defendant is guilty, be it directly or by inference. *City of Seattle v. Heatley*, 70 Wn.App. 573, 854 P.2d 658 (1993) (quoting *State v. Black*, 109 Wn.2d 336, 348, 745 P.2d 12 (1987)). This isn't controversial. *See* e.g. .*State v. Quaale*, 182 Wash. 2d 191, 199, 340 P.3d 213, 217 (2014) ("Opinions on guilt are improper whether made directly or by inference"). Testimony like this is "unfairly prejudicial because it invades the exclusive province of the finder of fact." *Heatley*, 70 Wn.App. at 577 (quoting *Black*, 109. Wn.2d at 348). It's reversible error if a court does let this sort of testimony in because it invades a defendant's right to a jury trial. *Id.* (citing to *State v. Kirkman*, 159 Wash.2d 918, 927, 155 P.3d 125 (2007)). Improper opinion issues are not like other evidentiary issues – they are errors of a constitutional magnitude, implicating an individual's rights under the Sixth Amendment of the U.S Constitution. *City of Seattle v. Levesque*, 12 Wn.App. 687, 460 P.3d 205 (2020).

A. The Evidence Rules provide that expert testimony is an exception to the prohibition against witnesses offering an opinion.

Granted, the Evidence Rules do allow for some exceptions. ER 702, governing the admission of an individuals' testimony as an expert, is the exception relevant to the matter here. Put simply, someone who's testifying as an expert is permitted to offer opinions on matters lay witness may not: "[T]he normal rules requiring a witness to avoid opinionated testimony and to testify from firsthand knowledge are modified to accommodate the testimony of the expert. Karl

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B. Tegland, Testimony by Experts, 5D *Wash. Prac., Handbook* Wash. Evid. ER 702 (2022-2023 ed.).

What are the situations in which someone gets to testify as an expert? Well, it's a two-part test: First, at issue in the case has to be some evidence some fact in issue for which scientific, technical, or other specialized knowledge would assist the trier of fact in understanding it (the "helpfulness" prong); and second, whoever seeks to offer an opinion about this evidence or fact in issue must be qualified as an expert by knowledge, skill, experience, training, or education (the "expertise" prong). ER 702; *State v. Copeland*, 130 Wn.2d 244, 922 P.2d 1304 (1996) (citing *State v. Cauthron*, 120 Wn.2d.879, 846, P.2d 502 (1993).

i. Courts in this state hold that testimony is helpful to the trier of fact when it is reliable and not based on speculation.

The crux of expert testimony involves giving the jury information that can be counted on: "[u]nreliable testimony does not assist the trier of fact and is properly excluded under ER 702." *In re Det. of McGary*, 175 Wash. App. 328, 339, 306 P.3d 1005, 1011 (2013). Expert testimony is helpful when testimony "concerns matters beyond the common knowledge of the average layperson and does not mislead the jury," *In re Det. of Pettis*, 188 Wash. App. 198, 205, 352 P.3d 841, 845 (2015) (quoting *State v. Thomas*, 123 Wn. App. 771, 778, 98 P.3d 1258 (2004). The nature of the issue must be of a sort that that an expert could express "a reasonable probability rather than mere conjecture or speculation." *Ensley v. Costco Wholesale Corp.*, 1 Wash. App. 2d 852, 857, 407 P.3d 373, 375 (2017); *see also State v. Richmond*, 3 Wash. App. 2d 423, 431, 415 P.3d 1208, 1212 (2018) ("A proposed expert's testimony is not helpful or relevant if it is based on speculation."). "The factual, informational, or scientific basis of an expert opinion, including the principle or procedures through which the expert's conclusions are reached, must be sufficiently trustworthy and reliable to remove the danger of speculation and

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conjecture and give at least minimal assurance that the opinion can assist the trier of fact." *Griswold v. Kilpatrick*, 107 Wash. App. 757, 761–62, 27 P.3d 246, 248 (2001).

The limit to all testimony of this sort, though, is when it touches too close to matters of culpability: "expert witnesses may not testify as to a defendant's guilt." *State v. Hayward*, 152 Wash. App. 632, 649, 217 P.3d 354, 363 (2009) (citing to *State v. Olmedo*, 112 Wash.App. 525, 530, 49 P.3d 960 (2002)).

2. Medical Examiners are tasked with two administrative tasks – determining cause and manner of death.

In King County, the county charter established the King County Medical Examiner's, vesting it with the ability to conduct death investigation under the authority of the county charter. King County Code 2.35A.090. The charter imbues the medical examiner with the authority to conduct death investigations under RCW 68.50. During much of the investigation for this matter, Dr. Richard Harruff was the Chief Medical Examiner for King County. https://kingcounty.gov/depts/health/examiner.aspx. At that time, under his employ were assistant medical examiners, including Dr. Thiersch, who oversee the practice of autopsies for bodies recovered across King County.

Medical examiners are functionally administrative agents that serve a number of different unique ends of public need. Keith Findley and Dean Strang, *Ending Manner of death Testimony and Other Opinion Determinations of Crime*, 60 Duquesne L. Rev. 302, 307 - 308 (2022). *See Attachment F.* Most medical examiners across the country, and here in King County, are responsible for two general roles: determining the cause of death, as well as the manner of death, two separate but distinct findings. *Id.* These findings literally go onto the death certificate, and act as the information stored in government databases about individual deaths. There are several

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different ends served by the categorizing of deaths by medical examiners: families of the decedent rely on it for purposes of estate planning, government agencies count on the information for making decisions on administrative actions, public health programs rey on the statistics for purposes of deciding on new financial goals, and county records agents rely on the information for chronicling patterns of death and dying throughout a region. *Id.*

A. Cause and Manner of Death: Two similar concepts shape out to be two very different concepts in practice.

"Cause of death" and manner of death may sound similar, but are two distinct pieces of information required for the completion of any death certificate. *Medical Examiners' and Coroners' Handbook on Death Registration and Fetal Death Reporting*, Center for Disease Control, p. 2. (2003). Start with "cause of death": to answer this means to establish what "injury or disease . . . produce[d] a physiological derangement in the body that result[ed] in the death of the individual." Vincent DiMaio and Dominick DiMaio, *Forensic Pathology*, 2nd ed., 3 (2001). It's "the disease or injury (or poisoning) that initiate[s] the chain of events that led directly and inevitably to death." Randy Hanzlick, *Cause of Death and the Death Certificate*, p. 11 (2006). This is "a medical opinion", and different physicians may reach different results based on the same evidence. National Center for Health Statistics, *Possible Solutions to Common Problems in Death Certification*, Center for Disease Control and Prevention (1997) https://www.cdc.gov/nchs/nvss/writing-cod-statements/death_certification_problems.htm.

i. "Cause of death" findings require medical expertise to explain and articulate one's findings.

Anything can be a "cause of death": be it a gunshot wound, a stab wound, cancer of the lung, or heart disease, a cause of death is any event that sets in motion the chain of events that leads to an individual's death. DiMaio & DiMaio, at 3. When a medical examiner is ruling on the cause

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of death, they are "provid[ing] an etiological explanation of the order, type, and association of events resulting in death." National Center for Health Statistics, *Possible Solutions to Common Problems in Death Certification*, Center for Disease Control and Prevention, p. 11 (1997). Since there are so many possibilities, determining the cause of death often, but not always, requires an autopsy. DiMaio & DiMaio, p. 14, a specialized medical exam of a body done after death. Autospy, Johns Hopkins Medicine, https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/autopsy (Current as of 2022). Autopsies require a trained medical professional to take custody of the body, and among other tasks, inspect the inside and outside of a body, conduct microscopic examinations of the organs, fluids, and tissues, remove organs from the body, and prepare formal reports of the findings. *Id.* An autopsy is a medical procedure, though as doctors may disagree on a patient's particular diagnosis, and autopsy is still ultimately an opinion, though one based on interpretations the scientific features. CDC, https://www.cdc.gov/nchs/data/misc/hb_me.pdf, page 14. What use it can actually be to individuals beyond administrative ends is limited – and there is a danger of imparting too much meaning into a "cause of death" opinion since it is in practice *only* an opinion. Hanzlick at p. 153.

ii. Manner of death findings are administrative tools based on the assumed circumstances or events leading up to one's death.

Then, there's the manner of death finding: it's an opinion that comes from applying the medical findings about the "cause of death," and using that data point alongside the believed facts and circumstances that led up to the death – in other words, the events that lead to the "cause of death." DiMaio and DiMaio p. 4 - 5. Unlike "cause of death" determinations, "manner" determination does not have a basis in centuries of history and practice – it is an

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American invention, dating back to 1910. Hanzlik at p.196. The World Health Organization does not promulgate any set system, method, or technique for how to determine "manner of death." *Id.*

The move to add manner of death to death certificates was not one rooted in science, but rather, done to aid public health officials in collecting better statistics. *Id.* at 197. A single medical examiner's beliefs about the circumstances leading up to the "cause of death" was never intended to serve as a legally binding opinion. *Id.* "Manner" determinations are in many ways outside the realm of the autopsy altogether, because the finding necessarily has to be based on the believed and reported circumstances leading up to a death – information that exists well before an autopsy is ever done. *Id.* The process involves the consideration of evidence that is non-scientific, evidence that in no way requires or changes with a medical opinion. Findley and Strang, at 304. Because there is functionally no set system for determining "manner of death," medical examiners and coroners have debated how best to deal with reporting a finding. *Id.* More broadly, since the establishment of manner of death findings, medical examiners have been prompted for their opinion on the manner of death in contested legal settings – but whether they should be asked to offer an opinion like this is a matter of great controversy within the profession itself. *Id.*

a. Manner of death findings require medical examiners to make findings about the believed circumstances leading up to the event that actually caused an individual's death.

Opining on the manner of death means opining on the circumstances leading up to the cause of death, not the cause itself, and in 2002, NAME published what appears to the first (and since, only) comprehensive guide to manner of death classification. Randy Hanzlick, John. C. Hunsaker III, Gregory J. Davis, *A Guide for Manner of Death Classification*, National

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Association of Medical Examiners (2002). *Attachment G*. This is the manual that Dr. Thiersch referenced as her basis for understanding manner of death better. It's not a tome, though: at 29 pages, the manual presents a series of fact patterns medical examiners frequently see, and states what manner of death finding should be submitted for the death certificate. It's not setting out a validated, systematized approach for ruling on manner of death. Rather, it's about aiding medical examiners in understanding how better to categorize certain circumstances – but there's no validation to say that their proposals are in fact any more right than any other approach. The manual sets out the four categorical terms a medical examiner ought to employ when filling out a death certificate. These are:

- **Natural** – Used when the death is due solely or nearly totally to disease or the aging process.
- **Accident** – The label most appropriate when an injury or poisoning leads to death, and there's little evidence that the injury occurred with intent to harm or cause death.
- **Suicide** – States that this should be used when the injury is the product of an intentional, self-inflicted act in order to cause one's own death.
- **Homicide** – employed as a label when some volitional act by another is done to cause fear, harm, or death.
- **Undetermined** – the classification used when information pointing to one manner of death is no more or less compelling than other competing manners of death, in consideration of all the evidence.

Id. at 3, 5 – 6.

What follows from here are illustrations of how to use the terms. *Id.* at 7. When dealing with a spider bite, mark it "Accident." *Id.* at 10. If there's a person who seeks to end their life by having the police kill them, it's to be marked "Homicide." *Id.* at 12. If dealing with someone who's died by voluntary euthanasia, the death should be marked a "homicide" subject to special state laws. *Id.* at 14. If an individual dies during the course of an athletic activity, it's an "accident" and not

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a natural cause. *Id.* at 11. Most of these descriptions contain two to three sentence descriptions of how to mark the classification, and then move on to another fact pattern. *Id.* at 9 – 14.

b. There exists no standardized or validated system for how a medical examiner is to accurately opine on a decedent's "manner of death."

The NAME guide gives guidance on how particular situations ought to be classified – but does not actually set out a means, method, system, or schemata for actually determining manner of death on a broader level. It does not set out a system because there is no system: the manual at no point articulates how exactly to determine manner of death other than to consider all the surrounding circumstances. *See* NAME Index. There is no reference to whether any method for determining manner of death has been tested in any capacity, be it in a laboratory or real-world setting, as being more effective or less effective than any other method for diving the circumstances leading up to the event that caused death. *Id.* The guide does not reference any peer reviewed studies that discuss whether a particular system for determining manner of death has held up to testing more than other systems. At no point is any systematized, validated technique discussed in the manual at all. And no empirical testing is ever cited or even acknowledged as existing that would speak to what methods give insight into which techniques or practices are more likely to yield accurate or meaningful data for determining a "manner of death."

The manual employs a flexible approach, and by its own admission notes that, "there is often no "right" or "wrong" answer or specific classification that is better than its alternatives. *Id.* at 2. And again, this is not just one manual of many that exists in the universe of medical literature – this is, by all accounts, *the* manual that has been in use for the past 20 years in guiding medical examiners on ruling on a manner of death. Findley & Strang, at p. 28. This is the manual that Dr.

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Thiersch referenced in her interviews in this case for understanding manner of death determinations. And in the years since the manual was published, there does not appear to be any more decisive or referenced work that speaks to manner of death determinations.

c. Manner of death determinations are opinions of just one particular medical examiner, and made based on their understanding of the circumstances leading up to the death of the decedent.

Manner of death findings are subjective: as the NAME manual spells out, "All agree . . . on the fundamental premise that manner of death is circumstance-dependent, not autopsy-dependent." *Id.* at 4. The evidence under consideration in opining on manner of death is the ordinary evidence available to all non-expert circumstances. Findley & Strang at 312. It is simply the beliefs and reports about the circumstances of the event received by the medical examiner reviewed alongside the work done during the autopsy. *Id.*

What the court is being presented with here is an undefined, unvalidated, unsystematized, and unverifiable means of rendering an opinion on how a single medical examiner thinks someone died. It is nothing more than a tradition – a tradition that has not withstood the rigors and development of modern science. And even those individuals charged with making manner of death determinations claim that manner of death testimony ought not to be used in contested legal situations.

3. Forensic scientists do not believe that manner of death testimony should be used in criminal trials.

The forensic pathologist community has not been shy about expressing its concerns with the misuse of manner of death determinations in court proceedings. In 2021, 86 forensic pathologists and death investigators joined in a letter to the editor of the Journal of Forensic Science about judicial misuse of manner of death evidence, writing "[t]he fact that this tool for aggregate

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statistics often does not fit well in court is not a criticism of manner determination by forensic pathologists. *See Attachment H, incorporated by reference here*. It is instead a criticism of misuse of manner determination by the courts." *Id.* at 318 (citing to Brian Peterson et al., Letter to the Editor, Commentary on: Dror IE, Melinek J, Arden JL, Kukucka J, Hawkins S, Carter J, et al. Cognitive Bias in Forensic Pathology Decisions, 66 J. FORENSIC SCIS. 2541, 2542 (2021)). And Dr. William Oliver, a leading medical examiner who has published extensively on the topic, has noted that using manner of death testimony in the criminal context is an "off-label use" – going far beyond the narrow administrative and statistical ends it was created for. William R. Oliver, *Manner Determination in Forensic Pathology*, 4 ACAD. FORENSIC PATHOL. 480, 483 (2014).

A. Cognitive science has demonstrated the role that cognitive bias can play in manner of death determinations.

Manner of death- determinations are made further fraught by the issue of cognitive bias affecting how a medical examiner may rule on a particular manner of death. In one study, Dr. Itiel Dror, Ph.D., a leading researcher in studying cognitive bias in the justice system, wrote with a number of medical examiners and social scientists about the risks inherent for cognitive bias to affect manner of death determination. Itiel Dror et al., 66 *Cognitive Bias in Forensic Pathology* Decisions 5, 2021 (https://onlinelibrary.wiley.com/doi/10.1111/1556-4029.14697). There, the researchers looked at the role race of a decedent played in medical examiners in classifying manner of death. *Id.* Specifically, they conducted a study of death certificates in Nevada for black and white children to see whether the race of the child affected whether there was a determination of homicide or some other manner. *Id.* Medical examiners appeared to rule black children's unnatural deaths homicides 36% of the time, whereas they only made such a finding

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for white children 24% of the time. *Id.* Further lab work done in a controlled study conducted by Dror et al. revealed the profound effect of medically irrelevant information like race played a statistically significant role in those surveyed of being more likely to classify a black child's otherwise-identical death as homicide instead of accident. Id.

Dr. William Oliver, writing of the extent and grave risk of cognitive bias affecting one's manner of death determinations, puts it bluntly: "It is absurd to pretend that manner determination has inherent legal meaning, and it is a misuse of manner to act as if it does." William Oliver, John Fudenberg, Julie Howe, Lindsey Thomas, 5 *Cognitive Bias in Medicolegal Death* 4, Academic Forensic Pathology (Official Publication of the National Association of Medical Examiners) (2015).

B. Allowing a medical examiner to opine on manner of death amounts to them offering an improper opinion, because the process is based on unscientific, unspecialized knowledge, and will therefore not be helpful to the trier of fact and thus be inadmissible under ER 702 and the Sixth Amendment.

All of this is to say that the practice of having a medical examiner opine on a manner of death at a criminal trial is precisely the sort of "off-label use" that in practice amounts to an improper opinion under the Sixth Amendment, because manner of death determinations don't meet the criteria for expert opinions under ER 702. This is an issue of first impression in Washington state. No appellate court appears to have ever been presented with the issue of whether a medical examiner gets to offer her opinion on manner of death to a jury in a homicide case.

Other states have dealt with it all, and of all them, it is Iowa's highest court that has conducted the most exhaustive overview of the issue of manner of death testimony at trial, and its analysis is worth working through to recognize why the opinion on manner of death should be

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excluded here. See *State v. Tyler*, 867 N.W.2d 136, 162 (Iowa 2015). Here's what happened: in *Tyler*, the government had charged Hillary Tyler with one count of murder, alleging that she had drowned her newborn baby. *Id.* at 144. It was undisputed at trial that Tyler had been pregnant and been concealing the pregnancy from the man she believed to be the father of the child. *Id.* When she went into labor, in purportedly wanting to keep the pregnancy a secret, she had checked into a hotel room the night her contractions began. *Id.* at 145. When housekeeping arrived to her hotel room after she'd checked out, blood was found on the floor of the room, police were called and ultimately they located the body of a baby inside the bathroom trash can. *Id.* Police conducted an extensive interview with Ms. Tyler, over the course of several hours, during which she purportedly told police she had drowned the baby in a bathtub. *Id.* at 147. The medical examiner, in conducting an autopsy on the baby's body, initially ruled that the cause and manner of death were both "undetermined." *Id.* However, in being provided with the information learned during the police interrogation of Ms. Tyler, the medical examiner changed the manner of death to "homicide." *Id.* The state charged her with murder in the first degree. *Id.* At trial, the court denied Ms. Tyler's motion to keep out testimony concerning the manner of death, and she was ultimately convicted of murder in the second degree.

On appeal, the Iowa Supreme Court held that while Iowa's Rule of Evidence governing the admissibility of expert testimony ought to be construed broadly, the testimony proffered by the medical examiner as to manner of death was not sufficiently based on scientific, technical, or other specialized knowledge so at to be helpful to the jury, and reversed the conviction. *Id.* at 163. The court was careful to note that it was not drawing a bright line rule as to whether manner of death testimony could never come in. *Id.* at 162. Rather, that use of manner of death testimony requires analysis on a case-by-case basis. *Id.* The court conducted an exhaustive overview of

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how different courts had treated the issue of manner of death testimony, looking to New York, see *People v. Eberle*, 265 A.D.2d 881, 697 N.Y.S.2d 218, 219 (1999), Minnesota, see *State v. Bradford*, 618 N.W.2d 782, 790, 793 (Minn.2000), and Vermont, *see State v. Richardson*, 158 Vt. 635, 603 A.2d 378, 379 (1992), amongst others for how other courts have reckoned with manner of death determinations largely dependent on non-medical information. *Id.* at 159 – 161.

In excluding the medical examiner's testimony, the court found the central problem to be that it was based in large part on the non-scientific, uncorroborated statements of the decedent's mother, and not on scientific training or experience. *Id.* at 163. The court distinguished that it wasn't the case that a medical examiner could never rely on statements. *Id.* at 167. Rather, the issue was that the non-medical evidence played a central role in the medical examiner's determination of death. Id. Because of this, the court found the opinion on manner of death to be too far removed from exhibiting scientific, technical, or other specialized knowledge. Id. at 164. Washington and Iowa's evidence rules are almost equivalent. See Iowa R. Evid. 702 ("A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue."). As cited in Tyler above, the Iowa Supreme Court's decision is not an anomaly, as other State's have similarly excluded manner of death testimony when the decision has been based in large part on non-medical evidence or findings. *Id.* at 158 – 159.

4. Medical Examiners are not experts in the manner of death, only in the cause of death – and therefore should not be permitted at trial to opine on how someone died.

In light of all this comes the question: what role, exactly, should manner of death testimony play in a criminal trial? Just because someone is an expert in one matter does not make them an

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expert on all matters: "the expert testimony of an otherwise qualified witness is not admissible if the issue at hand lies outside the witness' area of expertise." *State v. Weaville*, 162 Wash. App. 801, 824, 256 P.3d 426, 438 (2011); *see also Katare v. Katare*, 175 Wn.2d 23, 283 P.3d 546 (2012). Here, there's no meaningful debate that Dr. Thiersch is an expert in medicine. He is a pathologist, and specializes in figuring out the medical facts that led to an individual person's death.

Dr. Thiersch is not an expert in the circumstances of a death, because there are currently no specialized skills, training, or knowledge that one can develop to be able to determine manner of death more accurately. There is no special information that is gleaned from using the ordinary or lay information in rendering a manner of death determination. With his expertise, Dr. Thiersch can certainly explain the medical reasons Ms. McDonald died, e.g., a gunshot wound to the head. He can certainly speak to the wound trajectory, the description of the injury site, and the general deformities on the skin and body at the time of her death. But manner of death determinations are a horse of a different color: there, he is not using any of those medical skills, nor would Dr. Harruff.

The NAME manual sets out that manner of death determinations may vary from doctor to doctor, because this is a subjective process, which is exactly why it is not helpful to the trier of fact. Because as *In re Detention of McGary* states, the focus for courts should be on guarding against unreliable testimony, because "unreliable testimony does not assist the trier of fact and is properly excluded under ER 702." 175 Wn. App. at 328. And when it comes to medical examiner testimony, the court is being presented with a practice that has no validation, no empirical verification, no statistical certification to back up what the findings purport to show.

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As *Griswold* and *Ensley* require, expert testimony does not deal in speculation, or conjecture: it deals in the application of scientific principles and practices toward reaching a reliable conclusion. That is not what is happening here. Right, look at what Dr. Thiersch used to be able to rule on manner of death: an investigator's report about events that were believed to have happened, events that were wholly uncorroborated or outright incorrect, such as the supposed confession that literally never happened. Same goes for Dr. Harruff: essentially, the very fact the prosecutor came to the autopsy, along with the missing gun, taken with the injury to the front of the head, pushed him to say that this was a homicide. In effect, their manner of death opinions are ones based on *less* accurate information than the jury will have, given the safeguards of trial regulating the information jurors do and don't get. And yet, if either he or Dr. Harruff is permitted to testify, each will have an air of authority that goes far beyond the voice of any one of the twelve people's opinion deliberating over whether the manner of death in this case is a homicide or not. This is the danger of allowing each to come in. Dr. Harruff himself, in the interview with defense counsel, made clear that the issue here is really the word "homicide." The court should give that significant weight. These individuals are not just another law enforcement officer. They are doctors, and their word matters to lay jurors an outsize amount. For them to be able to come in and say that this was "classified as a homicide" will override the other evidence in this case.

In opining on a manner of death in this case, they are not *adding* anything to the jury's consideration that they do not already have. ER 702 makes explicit that someone gets to testify as an expert if what they are saying is rooted in the sort of specialized knowledge, science, or technical training that actively aids the jury in better understanding the evidence available to them. Dr. Thiersch is not doing that here. Dr. Harruff is not doing that here. They are doing the

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same sort of analysis that the jury is being asked to do – only they get to do it from the witness stand.

See, this is not just the case that the defense simply disagrees with Dr. Thiersch's and Dr. Harruff's opinions on manner of death– it's that from a cognitive science perspective, they are not doing the work of an expert period, and this is not a scientific opinion at all. As Dr. Kukucka sets forth in his analysis, Dr. Thiersch's reasoning in this matter does not align with the logic necessary to offer a scientific opinion. Dr. Kukucka mapped out in his report that in this case, that Dr. Thiersch did not appear to use any sort of medical training to divine how, exactly, he determined this should be a homicide beyond the non-medical information he learned from an investigator's report. There was nothing present in the medical material that demonstrated how Dr. Thiersch used medical training, of any sort, to work through the other potential manners of death. And while Dr. Harruff opines at length on his experience, that experience does not allow him to use non-medical circumstances to support his conclusion. What each is doing is conjecture—guessing at what happened based on the circumstances of the case as known to them, in exactly the way that *Griswold* and *Ensley* state the court should guard the jury against.

Go back to *State v. Tyler*. The medical examiner there relied in large part on the statements made by the defendant to reach the manner of death determination. This was evidence that was available to the jury, and did not require any unique sort of medical training to assess. The ordinary evidence did not change the medical examiner's medical interpretation of the evidence gleaned in the autopsy. Rather, the medical examiner was simply acting as a fact-finder for ordinary evidence – functionally, a less-informed version of a juror, given the non-adversarial receipt of the information.

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Now, look to how Dr. Thiersch and Dr. Harruff approach manner of death determinations – and how both in their own way make it known they'd rather prefer not to have to do this. Each, in their interviews, made reference to feeling as if they were forced to have to do this, as a matter of administrative process. Dr. Harruff and Dr. Thiersch are both very up front about the fact that it's the information they get from law enforcement, information they *accept* as valid, that drives their understanding of the circumstances leading to a manner of death determination. Each explains that that outside data is what contributes to being able to rule on manner of death.

The split between Dr. Thiersch and Dr. Harruff's point of emphasis is a useful point to realize how unscientific these opinions are. Dr. Thiersch is right that there is no methodology here for ruling on manner of death. *Id.* Instead, it was simply learning about the so-called domestic violence incident including what he accepted as evidence of Mr. Light allegedly confessing, and learning from unnamed law enforcement sources that she'd been shot that he classified this as a homicide. Dr. Harruff is rather focused on the fact that there is no gun present, that *that* for him is a key determiner that this is a homicide. Both individuals focused on different facts to drive their classifications of manner of death – but both are the same in relying on unscientific, non-medical information to get to their conclusions.

All of this is embodied within Dr. Kukucka's report and highlights the issues inherent in asking medical examiners to opine on a manner of death in a contested fact-finding setting – because what they are being asked to do is offer an opinion that is beyond their specialized knowledge, skill, and experience under ER 702. Dr. Thiersch's analysis was altered early by his exposure to the investigator's report. Dr. Kukucka highlighted the sort of evidence one would look for to see if bias were playing a role in their analysis, and that behavior is evident here. These biases come into play when one's scientific approach is not firmly rooted in a

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systematized, validated method for looking at evidence – of the sort that ER 702 guards against. And here, Dr. Thiersch at no point recorded his efforts to test alternate hypotheses for how Ms. McDonald died. He at no point appeared to stress test her finding that the manner of death in this case was a homicide, seeking to actively disprove a theory or test the strength of a hypothesis. He at no point documented his efforts to see if how he determined the manner of death to be homicide were in any way validated or adhered to some sort of systematized formula – because no such formulas exist. And while Dr. Harruff offered a great deal of discussion on probabilities of this being a homicide versus a suicide, his math quite literally does not add up because it's based exclusively on his own anecdotal experiences. The practice of opining on manner of death in this case is one not obtained from Dr. Thiersch's or Dr. Harruff's specialized knowledge or skills at all.

Because manner of death simply requires one to consider all variables, there is no checklist, no set system for guiding which information is and is not relevant for determining manner of death – which means that it is not reliable. If it's not reliable, it is not the sort of evidence that comes in under ER 702. The approach for determining manner of death here is dependent on the outside non-scientific information that pushes one to be able to classify a manner a death. *Id.* at 32. Dr. Thiersch and Dr. Harruff's determinations on manner of death are non-medical information dependent. Because of this flexibility, and because of this lack of a systematized approach, the testimony does not adhere to the standards of reliability ER 702 requires.

Dr. Harruff put it best: "we would suggest that you, uh, you know, ask your judge or whatever. Uh, Harruff would be happy to not talk about the word homicide because why argue about one little word when it is clearly an opinion from one person or from two people." We are

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dealing with an opinion here, a flawed an opinion, but an opinion that will be accorded outsize import by the jury in this case.

C. CONCLUSION

There is no single set methodology to rule on manner of death. No system exists. As the NAME manual states, there is not really one way or another to get to manner of death, as no validated system exists. The approach is just a consideration of the accepted circumstances that allows different doctors to reach a decision. What's being dealt with here is a layperson's opinion, despite the laypersons being doctors, as the opinions are based firmly on non-scientific information that is not the product of any set system or methodology. Put simply, it is an opinion that will not assist the trier of fact, and thus does not satisfy the requirements of ER 702.

Therefore, this court should preclude Dr. Thiersch and Dr. Harruff from offering an unscientific, non-expert opinion on the circumstances leading to Ms. McDonald's death.

Signed this Monday, September 16th, 2024.

/s/Vincent Hooks
Vincent Hooks, WSBA No. 52492
Attorney for Kai Light

/s/Liza Parisky
Liza Parisky, WSBA No. 54343
Attorney for Kai Light

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ATTACHMENT A
Dr. Norman Thiersch Interview

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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR THE COUNTY OF KING

STATE OF WASHINGTON, Plaintiff, v. LIGHT, KAI ELIJAH BLUE, Defendant.	No.: 21-1-00012-9 SEA

VERBATIM REPORT OF INTERVIEW OF DR. NORMAN THIERSCH (FROM RECORDED PROCEEDINGS)

Date of Interview: 8-2-23

Participants: Dr. Norman Thiersch
Liza Parisky, Defense Attorney
Vince Hooks, Defense Attorney
Enrique Frias, Defense Investigator
Lauren Burke, Prosecutor

Location: Telephonic

Transcribed by: Sheila L. Boensch

MR. FRIAS: I'm just waiting for the banner to pop up. Okay. There's the banner. So, the recording has started.

This is Enrique Frias, and I made Public Defense Investigator with the Defender's Association Division with King County Department of Public Defense.

Today's date is Wednesday, August 2nd, 2023. The time is 2:05 p.m. We're conducting a telephone interview via Teams with former King County Medical Examiner, Dr. Norman Thiersch, and we're speaking about the Kai Light case. And that's Court Cause Number 21-1-00012-9.

Also in attendance for this Teams conference call are Defense Attorneys, Mr. Vincent Hooks and Ms. Liza Parisky, who represent the Defendant in this matter, along with the Prosecuting Attorney, Ms. Lauren Burke.

Now, Dr. Thiersch, do you understand that we're recording this interview, and do we have your permission to record?

DR. THIERSCH: Yes, you do.

MR. FRIAS: Okay. Mr. Hooks, do you understand that we're recording this interview, and do I have your permission to record?

MR. HOOKS: Indeed.

MR. FRIAS: Okay. Ms. Parisky, do you understand that we're recording this interview, and do I have your permission to record?

MS. PARISKY: Yes, you do.

MR. FRIAS: Okay. And Ms. Burke, do you understand that we're recording this interview, and do I have your permission to record?

MS. BURKE: Yes. And yes, you do.

MR. FRIAS: Okay. So, Dr. Thiersch, I just want to say thanks again so much formally for being available. We do have some questions to ask. If the questions don't make sense, please let me know and we can clarify. And because I don't have the best laptop speakers, if I can ask you to speak loudly so that my handheld recorders can capture you, that'd be appreciated.

Before I turn it over to Mr. Hooks, can I just have you state and spell your full name for the recording, please?

DR. THIERSCH: My name is Norman John Thiersch, and that's spelled N-O-R-M-A-N J-O-H-N T-H-I-E-R-S-C-H.

MR. FRIAS: Okay. Thank you so much, Doctor. And with that, I'm gonna mute myself and turn it over to Mr. Hooks.

MR. HOOKS: Good afternoon, Dr. Thiersch. Thank you again for giving us your time this afternoon. I want to start by just having you give us an overview of your education with respect to medicine generally, and with respect to forensic pathology.

DR. THIERSCH: In terms of my medical education, I -- I attended University of Washington for four years. Following my four years of medical school, I completed four years of residency training in Anatomic and -- and Clinical Pathology. Following that, I spent two years in Fellowship with the King County Medical Examiner's Office. And then since then, I've been practicing as a Forensic Pathologist for a year in Tucson, Arizona, then for about three years back at King County. Then I was Chief Medical Examiner in Snohomish County for about 16 years. Following that, I've been in private practice doing forensic pathology around the State of Washington.

MR. HOOKS: So, with respect to, I guess, forensic pathology specifically -- and I went into law so I wouldn't have to worry about science stuff, so please bear with me if some of these questions are particularly basic -- but can you just tell me what exactly is forensic pathology?

DR. THIERSCH: Forensic pathology typically involves determining cause and manner of death of people that come to their death in unexplained, unexpected, or violent means. Non-natural means. And forensic pathology is about examining a body and determining why they died.

MR. HOOKS: So, with respect to forensic pathology, what training did -- have you received specifically, I guess, in the field of forensic pathology beyond, I guess,

the general training that everybody receives to get their medical degree?

DR. THIERSCH: Well, I specifically spent two years of Fellowship at -- first, based strictly at -- at King County doing a Forensic Pathology -- Pathology Fellowship in Forensic Pathology, and then the second year of that Fellowship was traveling the State doing forensic pathology -- or providing forensic pathology services for the Coroner's and other Medical Examiner's Offices in the State. So that's -- I mean, that's the formal training.

MR. HOOKS: And certainly not trying to hold you to a hard number, but approximately how many autopsies have you conducted over the course of your career?

DR. THIERSCH: That's a little hard for me to say exactly. I mean, I don't know, six, seven thousand. It's -- I -- I don't keep track of it.

MR. HOOKS: Certainly. No, I -- I'm just trying to get a scope or perspective, so I appreciate that. So, with respect to, you know, an autopsy, can you sort of define what the lay definition is of that?

DR. THIERSCH: An autopsy is an examination of a body, both the external services as well as the internal organs, to understand why or/and determine how somebody died.

MR. HOOKS: And so, you know, when you say it's an examination of the body, can you give me a little more

detail, I guess, about like how exactly the steps of an autopsy might work? Like, take me through, you know, piece by piece.

DR. THIERSCH: How much detail do you want?

MR. HOOKS: As much as you're willing to give. I want to make sure I understand. I don't want to make any assumptions about what you're --

DR. THIERSCH: So -- so, particularly in the case of homicides, there -- we -- when -- when we do autopsies in general, we look at bodies in -- in a fair amount of detail to make sure we identify the person, identify any identifying marks to make sure we know who it is that we're looking at. So, there's a detailed examination of the external surfaces of the body; the hair, the eyes, the nose, the mouth, all -- all the surfaces -- the fingernails, the chest, the abdomen, and the back. We -- we look -- we look in the orifices. Particularly in homicide cases, we take swabs, we -- we take trace evidence. I mean, it's a rather detailed examination.

And then particularly in homicides, we do X-rays of the body looking for evidence of injury, fractures, as well as retained objects such as bullets or other things that may come to rest in the body. Following that, then an internal examination is done where incisions, cuts, are made in the body, and the internal organs are removed and

examined, again, for evidence of injury. Also, looking for other pathological process, natural disease, that may have a bearing on why the person died. During that time, we also collect body fluids; blood, urine, liver bile, and blood. These days, blood is sent off for toxicology to see what drugs may have been involved in the -- in the person's death. Again, that -- what -- whether we send the tox off may have -- depending on the -- the postmortem interval may have some bearing on whether we send off tox or not. But those are sort of the typical things that we -- we do.

MR. HOOKS: Where do, I guess, the steps of how to conduct an autopsy come from?

DR. THIERSCH: Where do they come from?

MR. HOOKS: Uh huh.

DR. THIERSCH: You mean in terms of how -- how that's performed?

MR. HOOKS: Like who, I guess, sets the -- the requirements of what is considered a proper autopsy? Is that determined by the -- by the Lab itself, is there a national sort of agency that sets it?

DR. THIERSCH: Well, I mean that's -- there's -- there's policy and procedure. I mean, there -- there's sort of accepted -- I mean, how -- how an autopsy's done, I mean, that's -- that's part of what you learn during fellowship and -- and training. And those protocols are --

are, I mean, there's policy -- policy and procedure at King County on how that's done, and that's something that you learn as a resident and -- and -- and a fellow.

MR. HOOKS: So, within, I guess, King County Medical Examiner -- just because that's what we're talking about for purposes in this case -- are there internal criteria of the steps one has to follow when conducting an autopsy?

DR. THIERSCH: I think -- I mean, there's -- there's generally accepted -- I mean, there -- there are different ways to do a dissection, and -- and there -- there's -- those are some sort of generally accepted ways of doing that. I do a modified Rokitansky technique. Other people do an organ-by-organ, but that's -- that's what I typically do, and that's how I was trained in King County.

MR. HOOKS: You used a phrase that I want to make sure I understand. What -- what is it a -- Rogatansky (phonetic) technique?

DR. THIERSCH: Well, there -- it's called modified Rokitansky. It's a way of removing the organs from the body.

MR. HOOKS: So, can you just tell me a little bit about what that is and why you chose to do it that way?

DR. THIERSCH: Well, I -- that -- that has to do with moving the organs from the body in blocks, so that the -- the relationships are kept intact. So, once the organs are

removed from the body and I'm looking at them on the dissecting table, I can -- I can see those relationships. And then I do the remainder of the dissection. Dissection is usually assisted with an autopsy assistant, so.

MR. HOOKS: So, with respect to, I guess, let's talk about -- so big picture, you've used a couple phrases that I want to ask you some more questions on. You talk about cause of death and manner of death. And I want to go into that a bit. What exactly is a -- a cause of death?

DR. THIERSCH: Well, the way death is certified in the United States, and in Washington State in particular, there are only certain acceptable -- acceptable causes. You know, how they're classified. It's basically a classification system of how to organize causes of death; natural, suicide, homicide, undetermined.

MR. HOOKS: So, are those -- I -- I don't -- sorry. So, are those causes of death or manner of death?

DR. THIERSCH: That's cause.

MR. HOOKS: Okay.

DR. THIERSCH: Oh, no. Excuse me. Excuse me. Manner of death.

MR. HOOKS: Okay. Thank you. Sorry. I want to make sure, 'cause I've heard the news sometimes interchangeably or close to it. I want to make sure I get it right. What is the difference between cause of death and manner of

death? Let me ask that.

DR. THIERSCH: Cause is -- cause of death is just how -- what -- what box you put it in. Excuse me. Manner of death is just what I'm -- I'm sorry. I'm being confusing. Manner of death is just how you classify the causes of death. The cause of death is like a heart attack, cardiovascular disease, pneumonia, blunt force injury. Those are causes of death. Manner of death is just where -- what -- what category you place the cause of death in.

MR. HOOKS: So, when we talk about cause of death, sort of that -- the event that causes the person to -- to no longer exist, sort of to be, is that kind of fair to it say like that?

DR. THIERSCH: Cause is -- is just a -- a way of classifying the type of death that you're talking about or dealing with.

MR. HOOKS: Okay So, you mentioned like a heart attack is a cause of death. What are some just other-just generally, so I can -- can wrap my head around it -- examples of like what a cause of death may be?

DR. THIERSCH: Oh, you know, cardiovascular disease, atherosclerotic cardiovascular disease, pneumonia, chronic obstructive pulmonary disease, liver failure, cancer, you know, colon cancer, metastatic colon cancer. There -- what else? I mean, a car crash with, you know, fractures of the

skull, multiple blunt force injuries, those -- those sorts of things.

MR. HOOKS: I was gonna ask you about the car crash example, so, I'm glad you used it. Okay. So, if I had like a -- a car crash, is the cause of death car crash or is the cause of death like the loss of blood, or like injury to the brain?

DR. THIERSCH: No. The cause of -- it's -- it's what caused the person to die? I mean, it's -- it's the fractures of the skull, it's the blunt -- it's the blunt force injury to the head that causes the skull fractures, and then -- and bleeding in the brain, and that's -- that's the cause of death.

MR. HOOKS: So, what -- I guess, to determine a -- a cause of death, how are you doing that?

DR. THIERSCH: By conducting the autopsy. I mean, you -- you need to see what -- what is injured, what -- what is -- what is failing in that person, why -- what is causing them to die?

MR. HOOKS: And what,, I guess, -- not -- again, just making sure I'm sticking with you here, you know, what of your medical training is helping you, I guess, determine what is a cause of death?

DR. THIERSCH: Well, I mean it's -- it's -- I mean going to medical school, learning about, you know, disease

and pathology, you know, what -- what diseases kill people, what things kill people. And then in forensic pathology, look at detail into finding causes of death. I mean, and -- and other -- well, I mean, we look at a lot of natural disease, as well. But those things that lead to a person's dying.

MR. HOOKS: So, with respect then to manner of death, what is that?

DR. THIERSCH: Manner, as we've talked about before, is just a way to classify the causes of death. Is this natural, is this unnatural, is this suicide, is this a homicide, or is this something that is undetermined? Which doesn't happen very often.

MR. HOOKS: Okay. So, I'm gonna ask you about those, I think, just piecemeal to make sure we're -- we're following here. So, first, you mentioned that there's natural as a manner of death. What is that?

DR. THIERSCH: Natural death is -- is something that's a natural disease, something that is not caused by another individual, not caused by another person's actions or their own actions. It's like a heart attack or having cancer or having pulmonary lung -- lung disease.

MR. HOOKS: Then you said unnatural. What is that?

DR. THIERSCH: Those are -- are causes of death that usually are -- or -- or something that -- that's not

naturally occurring, like -- like a car crash, like a gunshot wound, like a stab wound, something -- something of that nature.

MR. HOOKS: Okay. So, you've talked about natural death, unnatural death. Then there is, I think, suicide. And I just want to clarify, when we talk about suicide in the manner of death context here, what that is. Can you define that?

DR. THIERSCH: Suicide is -- is an unnatural death, and typically caused by one's own actions that result in one's own death.

MR. HOOKS: When we talk about homicide as a manner of death, can you define that?

DR. THIERSCH: Homicide is typically looked at as the actions of another individual, resulting in another person's death.

MR. HOOKS: Then I believe the last one you said was not determinable or undetermined. What is that? If something is undetermined, what is that?

DR. THIERSCH: That's where there's not enough information about the circumstances or about -- or the process that's causing someone to die. It's unclear exactly how that occurred, whether that's from somebody else's actions or not, or whether there's something else going on, and your -- you can't decide. That -- that

doesn't occur very often.

MR. HOOKS: So, what is, I guess, the -- I'm trying to find what the word -- word would be here -- sort of like the standard for how you make a category determination? Like how -- like what's the scintilla required to be able to make a determination across the categories?

DR. THIERSCH: I'm not -- I'm not sure what you mean.

MR. HOOKS: Yeah, yeah. So, I don't -- I don't want to use the expression like burden of proof, right. But I'm trying to figure out, like, how do you decide, do I have enough to make a determination here versus having to say undetermined? Maybe that's a better way to put it.

DR. THIERSCH: Well, in most -- in most instances it's pretty clear what -- what -- what happened? I mean, you crash -- someone crashes their car and they're injured during the crash, and -- and they die sitting in the car, it's pretty clear that this is the result of the car crash. Or someone shoots themselves in the head and they die, it's pretty clear that's -- that's a self-inflicted gunshot wound. Or they take too many pills, or you do the dissection, and they have horrible heart disease. That -- those are fairly clear. It's based on what the circumstances are and based on what the disease process or injuries that are there in the body.

MR. HOOKS: So, is there a sort of percentage of I --

you know, I have to be 70 percent sure before I label it suicide, or I have to be 50 percent sure before I label it homicide? Like, is there quantum?

DR. THIERSCH: Well, the -- the way the -- you know, the -- the way the death certificate works is that it has to be more likely than not. That's -- that's for cause of death.

MR. HOOKS: That was for -- for cause of death.

DR. THIERSCH: For cause of death. And then the -- the -- and then -- then that -- that is categorized -- the cause of death is then categorized into one of the -- the causes of deaths that we spoke about.

MR. HOOKS: Okay. So, is there a defined level of certainty that you have to have to categorize it into one of the categories of manner of death or no?

DR. THIERSCH: No.

MR. HOOKS: Okay. So, then explain to me sort of what the criteria is for how you determine a -- a manner of death.

DR. THIERSCH: Well, you look at the circumstances and you look at the -- the -- the natural -- you know, the disease process in the body or -- or the other injuries in the body.

MR. HOOKS: So, tell me what you mean when you say you look at the circumstances.

DR. THIERSCH: Well, there's -- there's usually some sort of set of circumstances that are associated with somebody's death. That -- that information comes from law enforcement, or from the family, or there -- there's some indication of what happened to the person prior to their death.

MR. HOOKS: You kind of took the words out of my mouth. So, my next question was going to be, so in terms of cause of death and manner of death, what is, I guess, the universe of information you're allowed to consider when determining a cause of death, and sort of what is the universe of information you're allowed to consider when ruling on a manner of death?

DR. THIERSCH: Well, number one, we don't rule. We simply classify. And I mean, we -- we try to get as much information as we can. We -- I mean, more information is better than less. That's not always the case. You -- in -- particularly in King County, you have investigative staff that collects information about what happened to this person, what the circumstances were that happened prior or around the time of their death.

And then you have the examination of the body, which provides you with the information about the injuries, natural disease in the body. And together, those provide you with an idea about why the person died, and -- and --

and then assist you in making the classification into cause.

MR. HOOKS: Okay. I -- I appreciate you correcting me there with the distinction between rule and classification. So, at any time I use an incorrect term like that, feel free to tell me I'm wrong. It won't be the first time. So, with respect to King County Medical Examiner's sort of processes for determining a manner of death, are there any criteria that lists what information you can or cannot consider on ruling -- or in classifying a manner of death?

DR. THIERSCH: I'm -- I'm -- I mean, with the information we can or cannot consider? I'm not -- I'm not -- I mean, we -- we try -- we try to consider as much as we can.

MR. HOOKS: No. And that's -- that's totally fine. I just didn't know if there are certain criteria to say, you know, here's the information we want you to go look for, here's information we don't want you to go look for, for example.

DR. THIERSCH: No. No. I mean, you -- you try to -- you try to get as much information as you can to -- to -- to make the best determination. I mean, as I indicated, I mean, sometimes you get a fair amount of information, sometimes you get very little information. I mean, you -- you do the best that you can with the information that you

have.

MR. HOOKS: Okay. And in terms of what sources of information, you know, where the sources are, what are the sources of information that you're able to pull from when working to make a classification?

DR. THIERSCH: Well, you -- you try -- I mean, it depends on -- again, it depends on the circumstances. You know, law enforcement, hospital records, family, clinic notes, and pretty much anything you -- we can find that gives us an idea about what -- what was going on with the person.

MR. HOOKS: Okay. And you know, I've been using this -- these two words, rule versus classify. Can you tell me what the difference is, I guess, between ruling and classifying, and why you choose to use the word classifying instead of rule?

DR. THIERSCH: Well, Judges rule. I have no authority as a Judge. I simply classify the death. I'm -- I'm -- I'm not making a pronouncement. I'm -- there -- there's no really binding legal authority in what -- in certifying deaths. I mean, it's -- it's just a way to organize the the -- the -- the causes of death. That's all. And -- and that's -- then that's used -- I mean, it -- it's -- that -- that's -- that's kind of imposed upon us by the Public Health System. Since the information that comes out of

Medical Examiner's Office, on the death certificates, goes to Public Health and Vital Statistics, which then is compiled and then sent to the CDC for health statistics. So, it's all for statistical purposes. That's why it's done.

MR. HOOKS: You used a phrase that I -- I am curious about. You said it's sort of forced on us by the Public Health System. And why do you,, I guess, -- do you feel like that's asking more of you than it should, or -- or why do -- why do you put it that way?

DR. THIERSCH: Well, it's -- I mean, there's some -- in order for statistics to be done, you need to categorize things in certain ways so that you can, you know, do the analysis. And so, I mean, there -- if -- if -- and sometimes for statistical purposes, we get -- we get calls from Olympia about well, "What -- what do you mean by this? What -- what is this meaning?" And -- and sometimes it's a little more difficult. I mean, and -- and it's sort of -- in some ways you're sort of forced to -- to put it into a certain category. You're -- you're forced to choose, which sometimes is -- is difficult.

MR. HOOKS: Okay. So, with respect to cases that are, I guess, not those clear-cut examples you gave at the beginning with respect to cause and manner of death, because you're sort of forced to choose, how do you make

the decision if you have a close case versus ruling -- or classifying as undetermined?

DR. THIERSCH: No. And undetermined is -- is used very -- very infrequently. Just when -- when you really can't -- when -- when you can't say. Most of the time it's -- it's pretty clear. It's -- it's not really a difficult decision. I mean, it -- it occurs, but it's -- it's -- it's rare.

MR. HOOKS: Were there, I guess, protocols in place for when you have, I guess, classified a cause and manner, how you, I guess, confirm that -- that this is the one that makes sense? What does that process look like?

DR. THIERSCH: Well, I mean, there -- there is -- there is a review of the cases in the morning by -- by the staff and the pathologist. There then is a review of the cases in the afternoon every day of the cases that were performed that day, and a discussion of the -- the causes, manners among the pathologists. So, I mean I think that's -- I mean, there's -- I mean, that -- that sort of review takes place. I mean, there's -- I mean, most things are -- are fairly clear. Occasionally, there's some discussion.

MR. HOOKS: So, sticking with this kind of question about undetermined, what -- why is that undetermined is used so infrequently? What's the reason you don't use it more often?

DR. THIERSCH: 'Cause most of the time you can figure out what's going on.

MR. HOOKS: Okay. Can you give me an example of when you might use undetermined?

DR. THIERSCH: Well, you have someone that -- that has taken -- taken an excess of medication. And they've, perhaps, have been depressed, and you can't tell whether this is suicide or whether this is just accidental taking too much medication. Maybe they have some dementia or something. Is this really a suicide or not? I mean, that's the sort of situation you find yourself in.

MR. HOOKS: Okay

DR. THIERSCH: Or you may find some -- some remains in the woods somewhere, and you just don't know how they got there. And you know, is -- is this -- you know, is this -- is this somebody that got lost, or was this someone that fell down, was this accident versus a natural -- you know, or was overcome with natural disease? I mean, you -- you can't tell.

MR. HOOKS: Okay. So, I guess, the related question I have as you're talking about, you know, this process, is roughly how many autopsies -- and again, I'm not trying to you to a number -- but like when you were at King County Medical Examiner's Office, how many autopsies would you be responsible for a year, approximately?

DR. THIERSCH: Oh, it's probably -- probably about 300.

MR. HOOKS: So, is that like, roughly, like one a day, if not sometimes more than one a day?

DR. THIERSCH: Oh -- oh, very easily, yes.

MR. HOOKS: Okay. Is there a set amount of time on average you spend on the autopsies?

DR. THIERSCH: Well, it depends on the complexity. Typically, revolving around the number of injuries on the body, a very straightforward natural death is probably under an hour, a complicated homicide, you may be spending four, five, six, maybe -- maybe longer, depending on the number of injuries. It -- it depends on the case.

MR. HOOKS: Okay. So, then -- give me just a moment here. And we're going to start talking specifically about this case in a minute, but I want to ask, are you familiar with the National Association of -- of Medical Examiners?

DR. THIERSCH: Yes.

MR. HOOKS: Are you familiar with the book -- I don't know if it's a book or a guide -- a guide -- I'll say it's a guide -- a guide for manner of death classification?

DR. THIERSCH: There -- there have been a number of them, yes.

MR. HOOKS: So, I -- I know that -- actually, I'll just, if I can for a moment, see if I can figure this out

and try to share my screen. Give me just a sec here. Can you see my screen okay?

DR. THIERSCH: Yes.

MR. HOOKS: Okay. So, are you familiar with -- does this look familiar to you?

DR. THIERSCH: Yes.

MR. HOOKS: Okay. So, is this a document that you reviewed as part of your practice, or that you rely on at all in your practice?

DR. THIERSCH: This was -- this is coming from Hanslick (phonetic) in name, and this has gone through several evolutions over the years.

MR. HOOKS: Okay. Okay. So, but -- but it is something you're at least -- that you're --

DR. THIERSCH: I'm --

MR. HOOKS: -- familiar with.

MS. PARISKY: -- familiar with, yes.

MR. HOOKS: Okay So, the other one I wanted to just ask you about here was we talked about natural. I think you said, unnatural. But I don't we actually talk about accident, and I wanted to see what you thought about when accident gets used.

DR. THIERSCH: Accident is a -- is a -- well, I'm trying to think the best way how to say it. An inadvertent happenstance, something that happens. It's -- it's not --

you know, like a car crash.

MR. HOOKS: Not like -- not like a car crash, you said?

DR. THIERSCH: No. No. Like a car crash.

MR. HOOKS: Oh, like a car crash. I -- I apologize. Okay. So, that's not like the -- so, like how do you categorize something, just again, out of curiosity, like a -- like a crash where the driver is under the influence and crashes into another car, for example?

DR. THIERSCH: No. Those are typically classified as traffic accidents.

MR. HOOKS: Got it. Okay. And so, is this guide regarded as -- I guess, is it well regarded in the Medical Examiner communities? Is it something that people are generally familiar with?

DR. THIERSCH: Particularly, in those offices that subscribe to the -- the name criteria for how you classify cause and manner. But it -- it's well known.

MR. HOOKS: Okay. Is -- does King County ascribe to that criteria?

DR. THIERSCH: I'm -- yeah. I believe King County still is name certified. They -- there's a certification process for Medical Examiner's Office, and I believe they are still name certified.

MR. FRIAS: Okay. Got it. So, I just wanted to make

sure we -- we visited that point. And then the last thing, kind of again just generally speaking before we start to shift here to the specifics of this case, is there a time limit on how long you have to get out a cause and manner of death in a particular case?

DR. THIERSCH: Well, I mean, typically you try -- you try to get them out the same day that the -- that the -- the body is examined. Occasionally, if you're waiting for something like toxicology, you may have to wait for results to come back. But typically, try to get them out as soon -- as soon as those are available. In certain cases, you may wait a little longer until you -- you get the slides back, you get the toxicology back, before you sort of come to a conclusion. Make sure that everything is looked at before you certify the death. And -- and partic -- and then also particularly get the report out.

MR. HOOKS: Okay. And I think that about concludes for my general discussions, but I just want to ask real quickly.

Enrique or Liza, do you have any general questions before we start to shift to the specifics of this case?

MS. PARISKY: I do not. Thank you.

MR. FRIAS: Nor do I. Thanks.

MR. HOOKS: Okay. So, Dr. Thiersch, let's kind of shift gears here and start to talk about your work on this

case. So, first thing I -- want to ask, what materials do you either have in front of you or have you reviewed in preparation for our discussion this afternoon?

DR. THIERSCH: I have my autopsy and the -- I mean, some -- some of the associated reports with that. I think the Investigator's report.

MR. HOOKS: Okay.

DR. THIERSCH: I think -- I think the -- what -- what -- I think the Prosecutor's Office sent me was -- what -- I guess there is a request from King County for their file, and I've -- I've looked at that.

MR. HOOKS: Got it. Okay. And when you say the Investigator's report, are you talk -- which Investigator are you talking about?

DR. THIERSCH: There's -- there's a -- like a couple page report that sort of gives the number -- King County number, and then there's a little brief narrative and it gives some of the sort of demographic information about the --

MR. HOOKS: Okay.

DR. THIERSCH: -- deceased person.

MR. HOOKS: Got it. So, just to make sure we are metaphorically and literally on the same page, I just want to show you what I have, and you can tell me if this is what you have, as well. Just because I -- I think I'm

gonna try to be referencing this, perhaps. Do you -- can you see my screen okay?

DR. THIERSCH: Yes.

MR. HOOKS: Okay. So, do you -- do you recognize this page? For the record, it's Bates 230.

DR. THIERSCH: Yes.

MR. HOOKS: Okay. So, what is this page that I'm looking at?

DR. THIERSCH: I think this is -- I -- I mean, it's a little bit small on my screen right now. But it looks like --

MR. HOOKS: I can zoom.

DR. THIERSCH: It looks like this is a request for records, and --

MR. HOOKS: Okay.

DR. THIERSCH: Okay. And I guess this is -- this looks like this is a request from the Prosecutor's Office.

MR. HOOKS: Okay.

DR. THIERSCH: And this is King County's response in sending them the -- the information in the file on -- on this particular case.

MR. HOOKS: Okay. So -- so, generally speaking, what is, I guess, the relationship between how the Prosecutor's Office communicates with the King County Medical Examiner's Office?

DR. THIERSCH: Well, I'm -- you know, I'm not there currently.

MR. HOOKS: Sure.

DR. THIERSCH: And I was -- I was there briefly in 2000 -- 2021. So, I'm -- I'm not that familiar with the communication, but I think there's -- I mean, it's fairly open. If the Prosecutor wants to know something, the -- the office will supply it. But you know, that's not something that I did or -- or was much involved with, so --

MR. HOOKS: Okay.

DR. THIERSCH: -- I can't -- I -- I can't really speak to that.

MR. HOOKS: Okay. And as relating to this documents, I do want to ask, in having reviewed, I guess, some of the materials in advance, do you have an independent recollection of the work you did in this case?

DR. THIERSCH: No.

MR. HOOKS: Okay. So, then we will be just getting -- going through the documents and trying to see what we can discuss. So, I'm scrolling down Bates 231; do you see this document?

DR. THIERSCH: Yes.

MR. HOOKS: What is this document?

DR. THIERSCH: This appears to be the Investigator's report.

MR. HOOKS: Okay. And what -- well, I guess, what is this report and, you know, how would this relate to what you do?

DR. THIERSCH: As we talked about before, this is -- this is the front page that gives some of the demographic information of when the death occurred, where the death occurred. And then down at the bottom there's a brief narrative about circumstances about what happened.

MR. HOOKS: So, is this a document you would have had available to you before performing the autopsy?

DR. THIERSCH: Yes.

MR. HOOKS: Okay. So, generally speaking, would this have been something you would have read before performing the autopsy?

DR. THIERSCH: I don't remember specifically whether I did or not. I -- I probably had -- I probably looked at this.

MR. HOOKS: Okay. Got it. And then just reading this document, does this bring back any particular memories about this case?

DR. THIERSCH: Vaguely. Yeah.

MR. HOOKS: Can -- can you tell me, I guess, what specifically you -- you remember?

DR. THIERSCH: There was -- I think there was -- this was a young woman, there was some sort of domestic

violence, some -- some sort of interaction with the boyfriend. I think there's a question of whether this was a self-inflicted gunshot wound versus somebody else shooting her. And then I think at some point the boyfriend admitted to -- or -- or admitted to shooting her. I think that was the information that -- that we had.

MR. HOOKS: Do you remember where you would have gotten that information from?

DR. THIERSCH: I think it's right there on the page.

MR. HOOKS: Okay. Okay. So, do you remember ever speaking with law enforcement during this case?

DR. THIERSCH: No.

MR. HOOKS: Okay. Do you remember having any discussion with the Prosecutor in this case?

DR. THIERSCH: No.

MR. HOOKS: Okay. So, I'm gonna scroll down then to Bates 232; do you see this document?

DR. THIERSCH: Yes, I do.

MR. HOOKS: What -- and again, can you tell me what this page is?

DR. THIERSCH: Let's see. This looks like a sort of, again, another page of the Investigator's report, and it just looks like it's who -- you know, who -- I mean, it looks like -- if you can scroll back up a little bit --

MR. HOOKS: Oh, for sure.

DR. THIERSCH: It looks like who the physician was at Harborview, who was the Investigator that was making the call, who was the primary Investigator. And then it goes down into fingerprint comparison. And then it looks like the decedent was identified through fingerprints. And then it looks like there's also hospital identification. So, I mean, it's just documenting various aspects of this case.

MR. HOOKS: Okay. So, scrolling down to, it looks like, Page 3 of 4 of the Investigator's report, this is Bates 233. What -- this appears to just be some names of listed individuals, but I want to know if there's anything else that you would have taken from this particular document?

DR. THIERSCH: No. I'm not -- I'm not sure what exactly this is. Looks like people who have been contacted.

MR. HOOKS: Okay.

DR. THIERSCH: Who -- who were involved in this case.

MR. HOOKS: Okay. And then I've got --

DR. THIERSCH: These are -- these are areas that I'm, you know -- I'm -- I'm -- these are filled out by the Investigator, not by me.

MR. HOOKS: Certainly. No. And that's why, again, it's more just about sort of what you would -- you would have seen or generally been familiar with. So, here I have

this document. It says case notes. I don't know that this document has particular relevance for you, but I want to at least show it to you.

DR. THIERSCH: I think this is -- I mean, just the -- the notes that are associated with this case. Someplace where there's -- again, this is primarily done by the investigative staff.

MR. HOOKS: Okay. So, then we'll go here. It looks like this is an internal document. Do you recall ever seeing this document or reviewing this document?

DR. THIERSCH: I -- I mean, since -- since I've received this file, I've looked at this, but I -- I don't have any specific memory about the note that's here.

MR. HOOKS: Okay. That was 236. We're just going to 237. I'm just gonna note for the recording, it's a blank page, other than a name that says, Zacharay Forest (phonetic) (Inaudible). So, I -- I saw this document, and I want to know whether you may have reviewed this at any point during your --

DR. THIERSCH: No.

MR. HOOKS: -- work in this case? Okay Same here.

DR. THIERSCH: No, I don't -- I don't -- I don't really recall this other than looking at it --

MR. HOOKS: Okay.

DR. THIERSCH: -- recently.

MR. HOOKS: Okay. And we're on 239 and going to 240. What do you think?

DR. THIERSCH: I think -- I think there was some -- I think there was some -- I -- I sort of vaguely remember something about there was a concern about whether the deceased -- decedent was pregnant or not. I mean, it's -- it's sort of -- but I mean, it's sort of a vague memory of this. But I -- I don't recall specifically --

MR. HOOKS: Okay.

DR. THIERSCH: -- this page.

MR. HOOKS: So, we're gonna go to 241 right here.

DR. THIERSCH: I have no -- no memory of this. No interaction with this.

MR. HOOKS: Do you -- actually, I'll -- I'll keep going here. Just (Inaudible) close to the autopsy itself. This is just like I -- on Page 242, a COVID test page, so I'm just going to jump through. At 243 it's a blank page. So, this is a King County Medical Examiner's Property Record. What would -- would -- would this be anything that you would have access to or have reviewed?

DR. THIERSCH: I'm -- I'm -- I probably had access to it. It looks like there's nothing there. So, I mean, I wouldn't have --

MR. HOOKS: Okay.

DR. THIERSCH: -- spent any time on this.

MR. HOOKS: So, Case Follow Up Release Form is on Bates 245. Again, Page 246 is discussing about fingerprints. And I'm just gonna jump here to Disposition Record. It does look like there's some signatures on here. I want to know if you know what this document is?

DR. THIERSCH: This is -- this looks like the clothing form for -- oftentimes when -- when the body's released to the funeral home, we want to make sure that, I mean, in -- in this case, particularly this being a homicide -- well, I mean, just documentation of whether there's clothing or not, and make sure that that -- that's clear. In this case, I don't know if there was any clothing to begin with. And if there was, it would have gone into evidence. And so, there -- there wouldn't have been any release of clothing. But I'm not -- I don't even remember if there was any.

MR. HOOKS: Okay. So, Bates 248 is just a -- it looks to be essentially a -- a fax page. So, I'm just gonna jump past that. 249 is a --

DR. THIERSCH: This is just a COVID result.

MR. HOOKS: -- COVID test. 250, I don't know if you would know what this was. I don't know if this is something you would have --

DR. THIERSCH: Well, this is -- I mean, this is Life Center. This is the tissue procurement organization. So,

I guess, they were interested at one point, and then decided not to pursue things.

MR. HOOKS: So, this one, Bates 251, I notice that there was some writing that had been on here. Can you tell me what this document is and whether this would have been included generally with the Investigator report?

DR. THIERSCH: This is -- I think this is -- I'm -- I'm not exactly sure what this is. I think this is having to do with telling the organ procurement agency what -- what they want, and -- and -- and -- and the office responding with, you know, avoid -- don't -- don't collect around trauma. This is just a form for organ procurement.

MR. HOOKS: Okay. Is this a form that would have been something you would have reviewed at some point?

DR. THIERSCH: No. No. I mean --

MR. HOOKS: Okay.

DR. THIERSCH: -- I mean, this is -- this is pretty standard.

MR. HOOKS: Okay.

DR. THIERSCH: You know, we -- we get -- I mean the office gets called all the time about wanting to -- the organ procurement wanting to take organs on people, and they have to -- they have to consult with the office before they do that. And generally, King County is pretty liberal about that, in allowing them to take organs.

MR. HOOKS: Okay.

DR. THIERSCH: But stay away from injury and -- as to not disrupt things.

MR. HOOKS: Certainly. So, Page 252 just looks like a fax -- facsimile of what we just looked at.

DR. THIERSCH: Yeah.

MR. HOOKS: Bates 253, appears to be roughly a clone of what looked at here.

DR. THIERSCH: The same thing.

MR. HOOKS: This seems to correspond here. So, here's, I think, Page 255 is the autopsy report cover page, I believe.

DR. THIERSCH: That's right.

MR. HOOKS: So, I wonder if you could just sort of explain to me when it says opinion, you know, what does it mean when it says opinion? Which is definitely a different word than classification. So, I want to make sure if those are the same thing, they are, and if not, can you explain the difference to me?

DR. THIERSCH: Well, this front page, it is sort of an outline form. It gives you -- sort of encapsulates what -- what is in the report in a brief form. Pathological diagnoses give you what -- what the findings are, and then opinion is my sort of synthesis of -- of what I found. And -- and -- and it -- a brief correlation with the

circumstances.

MR. HOOKS: Okay.

DR. THIERSCH: So --

MR. HOOKS: Well -- well, I don't mean to interrupt. Please continue.

DR. THIERSCH: Then at the very last sentence -- well, I mean, the last sentence, where I'm just -- where I define the manner or discuss the manner, or how the manner is classified, and then above that I -- I give the cause of death.

MR. HOOKS: Okay. So, I -- I see here that it says she survived in the hospital for 18 days. And I'm wondering if you can -- you can tell me about what effect her not coming for 18 days could have on the way you conduct an autopsy?

DR. THIERSCH: I'm sorry. My phone was ringing.

MR. HOOKS: Oh. No worries at all. So --

DR. THIERSCH: Sorry. Could you ask me that again?

MR. HOOKS: Of course. What effect would there be with her being in the hospital for 18 days before coming to you for an autopsy?

DR. THIERSCH: You mean in terms of -- in terms of what? I mean -- I mean, there's lots of effects. I mean --

MR. HOOKS: I guess, in terms of, you know, you

explained it earlier that I -- an autopsy is sort of this, you know, examination of the body. If she'd been at the hospital and she'd been receiving, you know, surgery and treatment, how that might affect information you could collect from the body about the cause of death?

DR. THIERSCH: Well, certainly survival after an injury -- I mean, particularly in this case, there -- and -- and also surgical procedures, and in this case there's a gunshot wound, I mean, there's modification of the wound that you could lose evidence about, it could, you know, change how the wound appears. Certainly, healing that goes on for 18 days, you know, and just a fair amount of time, you know, the body starts trying to heal itself. So, those injuries may be, you know, they -- they change over time. Maybe -- maybe less clear about what's going on. Some of -- some of the original evidence that there may be lost or obscured.

MR. HOOKS: So, I want to just go through this briefly here. We're on Page 256. So, this would have been on March 23rd, 2021 at 8:28. But I note here that it looks like this document wasn't signed until June 18th, 2021. And I'm wondering if you can explain to me at all what might be the reason for the delay?

DR. THIERSCH: Well, there -- there are a number of -- of things. I mean, probably -- in this case, probably

waiting for toxicology to come back. That would be part of it. Also, making sure the -- the slides come back, having every chance to look at the slides, and then finish off the report. And then just the -- the busy nature of King County, getting to the report to finish it. I mean, those are all factors that would play a role here.

MR. HOOKS: Okay. So, looking at this -- this Page 256, it looks like it's essentially sort of a summary of the outside of her body before you start to sort of work your way through it. But I'm wondering what the significance is for you of any observations on this page.

DR. THIERSCH: Well, it's -- it's not -- I wouldn't say it's a summary. It's a detailed description of -- of the body. And it -- it documents the -- the -- the findings; the height, the weight, the color of the eyes, the nose, the oral cavity. It goes into detail about what the condition of the body was when I examined it.

MR. HOOKS: Going to Page 257. I wonder if you could tell me what this page is? It's Page 3 of the autopsy report.

DR. THIERSCH: Well, here there is a, as is described in the report, there's a section on scars and distinguishing marks, which describes the various tattoos that are on the body, as well as some scars. And then the next category is evidence medical therapy, which then

discusses and describes the various forms of medical therapy that are -- that are on the body.

MR. HOOKS: So, I want to talk to you about a couple of these scars and distinguishing marks. So, it looks like one and two referred to tattoos. But then I see number three. It says, "On the lower, left forearm, a six by three-inch area of multiple linear hypopigmented scars with the greatest dimension of two inches. So, I guess, what -- what is that describing?

DR. THIERSCH: So, the left forearm, you -- you know where the left forearm is. It's right -- so, the volar surface is the same surface as the palm of the hand. So -- so, on the left forearm, on the same surface as the palm, there's a six by three-inch, you know, six by three inches with multiple -- so, they're like thin lines, hypopigmented, so like white, scars. And then -- and they're two inches long in -- in the biggest dimension. So, they're like two-inch long linear scars. Long thin scars, white scars.

MR. HOOKS: What would generally, in your medical opinion, I think, be able to cause those types of marks?

DR. THIERSCH: Those are -- those are probably incise or cuts -- cuts in the skin.

MR. HOOKS: Okay. And have you seen those types of marks before in your work?

DR. THIERSCH: Yes.

MR. HOOKS: And -- and generally when you've seen those before, you know, what is your understanding of how somebody sustains those cuts?

DR. THIERSCH: Those are oftentimes self-inflicted.

MR. HOOKS: Okay.

DR. THIERSCH: I -- I don't -- I don't know in her case. But I mean, that's something that you sometimes see that people cause these, you know, cuts on their -- on their skin. You know, I'm -- I'm not sure how she got it, but that's one way she could have.

MR. HOOKS: Okay. And just, again, given sort of your medical experience and how many you've done, is that a common area to, I guess -- just, I guess, if -- if you see those marks, is that a somewhat common area to maybe see those, is on that forearm?

DR. THIERSCH: Well, I mean that -- that's an area that's easily accessible. I mean, particularly if she's right-handed. That would be an easy place to -- to cause those.

MR. HOOKS: So, then I noticed that entries, you know -- entry four is a tattoo, entry five appears to refer to just one hypopigmented scar, six appears to be a two-inch linear hypopigmented scar. But then I see seven refers to a left lower leg, a nine by five-inch area of multiple

linear hypopigmented scars. So, would this have been similar to number three?

DR. THIERSCH: It's -- it's hard -- again, I don't know how these were caused. It could be. But I --

MR. HOOKS: When you say -- oh, I -- I apologize. So, I guess, first I want to ask, from the description would those have been similar looking scars to what we see in number three?

DR. THIERSCH: Yes.

MR. HOOKS: Okay. And again, I guess, you know, and just given your experience, are those scars that could have, you know -- that you've seen be self-inflicted in the past?

DR. THIERSCH: They could be. I mean, again -- I mean, these are -- these are old. They're healed. I don't -- I don't know how she received them, but they could be self-inflicted.

MR. HOOKS: Okay. So, here I see evidence of medical therapy, and there's a number of entries. What would this section be?

DR. THIERSCH: This describes the -- the medical therapy that -- that's on the body. And -- and -- and -- and it's described there.

MR. HOOKS: And not to be obvious about it, but if she hadn't received medical therapy, would this section have

been included at all?

DR. THIERSCH: I probably would have made some notation about there's no evidence of medical therapy.

MR. HOOKS: Got it. Okay. That helps a lot. So, then just for the couple ones that I'm -- I'm most concerned with here. So, on the right frontal scalp is an approximate two-inch incision that is closed with surgical sutures. So, I guess, in -- can you tell me in layman's terms sort of what that's referring to?

DR. THIERSCH: So, on the right frontal scalp refers to the right side of the head in the front.

MR. HOOKS: Yup.

DR. THIERSCH: And there's a two-inch cut. You know, cuts are referred to as incisions in -- in sort of medical terminology, and that the edges are pulled together approximated, I mean, with suture. You know --

MR. HOOKS: Okay

DR. THIERSCH: -- suture is, you know like thread sort of pulls the edges together so that they can heal.

MR. HOOKS: Okay. So, entry three it says, "Left frontal (Inaudible) for two apparent surgical defects", which is obviously not the word incision. So, what is a defect as compared with incision?

DR. THIERSCH: It's some hole. I'm not exactly sure. I mean, it could be an incision, but it's a -- there --

there -- I mean, incision usually implies sort of sharp force. It's -- it's probably that, but I -- I called it a defect.

MR. HOOKS: Okay. And then I see entry three, "Right post -- right posterior, parietal and occipital scalp was an approximate one and a half-inch incision." So, suture and metallic staples. Where is that gonna be?

MR. HOOKS: So, on the right side of the head, on the back of the head, kind of -- not -- a little bit further forward than -- than right on the sort of back part of the head. Parietal -- the parietal scalp is between the frontal and -- and the occipital, the back of the head. So, a little bit forward to the back of the head is -- is this incision.

MR. HOOKS: Okay. Appreciate that. So, now we're on to -- again, we're on still 257, injuries, external. So, there was a gunshot wound to the head. And then I'm going to go to Page 4, where -- I wonder if you can tell me sort of what Page 4 is doing, like within the scope of the report?

DR. THIERSCH: So, Page 4 describes the -- the -- the gunshot wound, the entrance, the exit, and then the path of the bullet through the body. And it also talks of -- there was a -- a fragment recovered, as well as the direction --

MR. HOOKS: Okay.

DR. THIERSCH: -- of the fire -- direction of the path of the bullet in the body.

MR. HOOKS: Okay. So, starting, I guess, with the entrance section, it said the right frontal scalp center, approximately three inches in the vertex, is a V-shape, two and a half-inch by one-inch incision. So, is that incision referring to a -- one of the incisions that would have been like a medical related incision?

DR. THIERSCH: Well, as -- as -- as you mentioned before and pointed out, that she's survived in the hospital. There's -- there's been medical therapy to this -- to this wound, so that it's been modified. I mean, this is -- this is not a typical gunshot wound. It's been modified by medical therapy.

MR. HOOKS: Okay. Oh, I see that -- that next sentence, "Modification of this entrance, medical therapy and healing makes interpretation difficult." So, there's that next sentence that says, "No fouling or stippling is seen on or about the wound." Can you tell me what that sentence means?

DR. THIERSCH: So, fouling and -- and stippling refer to evidence of -- of close-range gunfire, or the -- the weapon being in -- in proximity to the -- to the target or to the skin. So, fouling is the burned and unburned gunpowder that comes out and can be deposited on the skin

with a closer contact wound. Stippling refers to small little injuries that are often seen with burned and unburned gunpowder that strikes the skin and causes small little injuries. So, in this case, there was no fouling or stippling seen on the wound. I mean, that's -- that's kind of a common observation that's -- that's -- that's done about gunshot wounds, trying to give you an idea about range of fire. But we're -- we're also 18 days out, so it -- it makes things -- things a little more complicated.

MR. HOOKS: So, when you say, you know, things are a little more complicated because it's 18 days out, what do you mean by that?

DR. THIERSCH: Well, there's a process for medical intervention, as -- as I describe above, as well, you know, cleaning up the wound, some healing can take place. So, a lot of those things that you can look at on -- on -- on gunshot wounds that somebody dies immediately after they've been shot, and use -- they're useful for determining range of fire, may not -- may not be available or -- or may have -- are gone now.

MR. HOOKS: Okay. And so, I guess -- I guess I'm gonna ask this. I don't know if there's like an ideal time to do an autopsy if somebody -- somebody dies. But you know, if there were like a case that involved a gunshot wound, ideally, is it -- it seems common sense, but is it

better to be able to do the autopsy closer to the time of death?

DR. THIERSCH: Well, in terms of interpretation of the wound and trying to get an idea about range of fire, sooner is better than later because things change, things, you know, can get wiped away or -- or modified, particularly when medical therapy is -- is -- gets involved.

MR. HOOKS: So, is it possible that -- that if there had been fouling or stippling here, medical therapy and healing could have altered that by the time you saw it?

DR. THIERSCH: Potentially, yeah.

MR. HOOKS: Okay. So, I see then on the exit here, modifi -- appears to be describing just the way that the bullet -- is it would have left the scalp or gone to the end of the -- or not scalp, just the head. What is it described what the bullet was doing in terms of that exiting?

DR. THIERSCH: So, there's an exit on the right -- right back of the head, and you know, sort of not directly back, but a little bit forward of that. And we're talking about occipital and parietal. And there -- there's an incision there modified by medical therapy.

MR. HOOKS: Uh huh.

DR. THIERSCH: And with -- with some healing. So, you know, there's -- there's not the, you know -- I'm -- the

gunshot wound has been modified. The exit wound, you know, is -- there's -- there's -- there's a -- there's a hole there that's been modified, but that's about all I can say.

MR. HOOKS: Okay. So, then the -- the -- in terms of how you trace the next section, the path of the bullet, I mean, how are you, I guess -- I know -- because it's very minutely detailed here. So, what were you able to look at that told you what the path of the bullet was?

DR. THIERSCH: I mean -- I'm sorry. What was I able to what?

MR. HOOKS: Like what were you looking at to be able to determine the path of the bullet? I mean, was it something where you were just looking at kind of where the injuries were in the brain and able to trace it that way? What told you, I guess, how the bullet traveled?

DR. THIERSCH: Well, yeah. I mean, when -- when you do an -- when you do an autopsy and you examine the head, you open the scalp, you look at the -- the -- the injuries to the -- to the skull, you take off the top of the skull, you -- and then you remove the brain so you can look at the injuries in the skull. And you look at -- and then you look at the brain, and then you ser -- cut the brain into sections, and you look at the injuries to the brain. And then you look at the back of the skull, or the sort of top right back part of it, and see where the bullet goes out.

That -- I mean, you look at this in a lot of detail, and that's described there in my -- in my path of the bullet section. You -- I mean, it also described the fractures in the skull that were caused by the bullet going through the head, as well.

MR. HOOKS: Certainly. So, then I -- I do see here there's entries two, three, and four that are referring to, it looks like, a -- abrasions. Can you tell me, well, I guess, what those observations are, what those are relating to?

DR. THIERSCH: So, if -- if -- if you recall, this is external evidence of injury. So, the gunshot wound, the entrance and exit are number one, and then other evidence of injury on the body is there in two through four. I think -- I don't think it goes on beyond that, but --

MR. HOOKS: No. I don't -- I don't believe it does. Yeah. I'll just scroll down make sure. Yeah. That's -- so -- so --

DR. THIERSCH: So, these are -- these are just other injuries on the body.

MR. HOOKS: Okay. Is there any way to know how, I guess, old these injuries are?

DR. THIERSCH: I mean, there's -- there's -- number four has a scab. I talk about abrasions. I don't talk about scabs on these. They're -- they're probably, I don't

know -- they're really not that old. I mean, these are -- these are not very big. I mean, these -- these are not really significant or important in -- in -- in relation to the cause of death.

MR. HOOKS: I -- I -- I didn't think so, but I wanted to just make sure. Okay. So, then we shift to what's called internal examination. And so, on Page, I think, 259, Page 5 of your autopsy report, so it looks like where -- you know, this first section is head and the central nervous system. So, you know, we -- we talked a lot about the path of the bullet, but what, I guess, is the difference between the head and the central nervous system on this page versus what you were describing on the previous page?

DR. THIERSCH: Well, the -- the previous page where we're talking about the gunshot, that's specifically describing the path of the bullet through the brain and the injuries that are there. This -- and -- and -- and as you notice at the top of this, there is injuries are described above and -- and -- and are not repeated in the following. This is more a general description of the brain, the weight. I mean, other than the gunshot wound, the brain is -- is pretty normal.

MR. HOOKS: Okay. So, then we see, you know, again -- I'm trying to rush through it, but I want to make sure

we're being efficient here. You know, there's a description of neck, and body cavities, and cardiovascular system. Did any of these examinations bear on determining a cause or manner of death in this case?

DR. THIERSCH: Not -- not here.

MR. HOOKS: Okay.

DR. THIERSCH: Not -- not in the neck, body cavities, or cardiovascular system.

MR. HOOKS: Okay. So, let's go to Page 260, Page 6 of -- of your autopsy report. So, we see, you know, there's a description of -- of the respiratory system. The (Inaudible) the lympho-reticular system, and the urinary system, and the internal genitalia, and the gastrointestinal system. Did any of these bear on your determination on cause and manner of death in this case??

DR. THIERSCH: Yes.

MR. HOOKS: Okay. Can you tell me what?

DR. THIERSCH: Well, there's a respiratory system here, which indicates that the lungs are heavy and there's diffuse consolidation. And --

MR. HOOKS: What are --

DR. THIERSCH: -- this says no consolidation, but well, that -- that's probably my error, but -- but the lungs are -- are heavy and there's thick mucus.

MR. HOOKS: And how would that bear on determining a

cause and manner of death? Like, what does that mean in -- in --

DR. THIERSCH: Well, I mean, there's -- there is -- she had -- she has pneumonia. Related to the gunshot wound to the head. So that -- that's is a significant factor here.

MR. HOOKS: Oh, okay. So, the pneumonia was caused by the -- you know, I don't want to get it wrong.

DR. THIERSCH: Well, in -- in -- in this case, I mean, having a gunshot wound to the head, it is usually -- is sort of rapidly lethal. In -- in this particular case, this is a young individual, she was able to get the medical therapy and assistance rather quickly, and that -- that prolonged her life. And having -- having a gunshot wound like this most likely interfered with her gag reflex. So, the -- the fact that she survives for so -- for so long probably is related to her developing pneumonia as a result.

MR. HOOKS: Okay. Was there anything else on this page that bears on determining a cause or manner of death?

DR. THIERSCH: No.

MR. HOOKS: Okay. So, I'm gonna scroll down to Page 261, Page 7 of your report. I see microscopic -- before we go there, there's the endocrine system and the musculoskeletal system. Anything here that beared on your

cause and manner of death determination?

DR. THIERSCH: No.

MR. HOOKS: Okay. So, here we see microscopic. What is this section referring to?

DR. THIERSCH: During the time of the autopsy, we take small sections of the heart, the arteries, the lungs, liver, kidney, and brain, and -- and we look at them. Those are prepared for examination under the microscope. And this is just a documentation of my findings.

MR. HOOKS: Okay. Do any slides get taken from the skull or from the brain to -- to look for any signs of, you know, ash, or -- or burning, or anything like that?

DR. THIERSCH: No. I mean, we -- we take sections of the brain usually to see if there's -- if there's -- oftentimes in these cases you might see some hypoxic change or lack of oxygen to the brain that may cause problems. I -- I did not see that here. In terms of burning, I'm -- I'm -- I'm -- sort of what was the other part of your question?

MR. HOOKS: I guess to identify -- just I'm imagining like a -- a -- a gun being quite hot, a bullet being quite hot, whether there'd be any like signs of burning either at the flash or beneath the surface at all.

DR. THIERSCH: Well, sometimes, particularly with a closer contact wound, you might -- you might see that in --

in the tissues around the skin. I did -- I did not do that in this case.

MR. HOOKS: So, then we see toxicology evidence, radiographs, and (Inaudible) procedure. So, this section says -- it kind of just says like it's -- I think it's collected and can be tested for one year. Did you do any toxicology testing in this case or no?

DR. THIERSCH: No.

MR. HOOKS: Did you ever ask for any toxicology tests either?

DR. THIERSCH: No.

MR. HOOKS: Why not?

DR. THIERSCH: Well, it's 18 days after the incident. Any drugs that would have been in her are -- are long gone. There is -- there -- there really is no utility or -- or additional information there.

MR. HOOKS: Okay. I'm gonna scroll down Page 262, which looks like essentially a blank toxicology --

DR. THIERSCH: Standard sort of form for toxicology.

MR. HOOKS: Okay. So, would you have submitted this?

DR. THIERSCH: This is probably -- this is probably auto -- so like auto-generated.

MR. HOOKS: Okay.

DR. THIERSCH: And I mean, I don't -- and I don't think I asked for any toxicology in this case.

MR. HOOKS: And then I see this note here that says circumstances of death. Would you have filled that out?

DR. THIERSCH: I'm -- I'm not saying that. Can you --

MR. HOOKS: Oh, yeah. Yeah.

DR. THIERSCH: Oh, in -- in the middle. Okay. In the middle. No, I think this was -- this was probably filled out by the investigative staff.

MR. HOOKS: The -- I see the histology worksheet here.

DR. THIERSCH: This is -- this is filled out by me.

MR. HOOKS: Okay. So, that's Page 263. Then I see external examination. What is this?

DR. THIERSCH: This is just notes taken at the time of the external examination.

MR. HOOKS: Okay. This is -- this is a body diagram just showing where the things -- like sort of diagrammatically what -- what appears in my autopsy report.

MR. HOOKS: Okay.

DR. THIERSCH: And again -- again, these are notes taken at the time of the exam.

MR. HOOKS: So, then I see here, internal examination.

DR. THIERSCH: Same sort of thing. These are notes taken about immediately following the exam, just documenting various organ weights. And there on the bottom you can see the -- and that's sort of my notation about the path of the bullet through the body.

MR. HOOKS: Okay. So, then I see this Page 267, this is record of autopsy attendance. What is this form?

DR. THIERSCH: This is a form for people that -- that come to the Medical Examiner's office at the time of the autopsy and observe the autopsy.

MR. HOOKS: Okay. So, I see that this is filled out, and it looks like it's filled out by -- with the name Jennifer Peterson (phonetic).

DR. THIERSCH: Yes.

MR. HOOKS: Do you -- do you remember Jennifer Peterson being there, or does that indicate to you that she would have been there during the autopsy?

DR. THIERSCH: This indicates that she would have been there. You have to understand, we -- there -- there's a lot of homicides at King County, and I -- I don't have a specific memory. Typically, what happens is that there is an autopsy station set up to -- right next to where the Prosecutor or -- or law enforcement, whoever is there -- that is there to look at -- to watch the autopsy. So, we perform the autopsy in front of them, and they would have been there. Oftentimes, in those situations after I'm done, I might step over and sort of briefly talk to them to see if they have any questions about what -- what they saw or -- and that -- that's -- that -- that's pretty standard.

MR. HOOKS: Okay. So -- so, again, understanding that

you do a lot of autopsies. So, Jennifer Peterson would have been there to answer questions you have or to give you information?

DR. THIERSCH: Gen -- yeah. I mean, that -- that does happen. They -- they sometimes do talk to us about the circumstances. It's more -- they're more there to -- to see what -- what we find and sort of understand, you know, why the person died.

MR. HOOKS: Okay. And it looks like Page 268 is just listing where photos are that were from the autopsy. So, we're not gonna --

DR. THIERSCH: Like, I'm -- yeah. I'm not -- I've not seen the photos since --

MR. HOOKS: Yeah.

DR. THIERSCH: -- the autopsy.

MR. HOOKS: Okay So, give me just a moment here. And I appreciate you guys working through the report with me so we're not making any assumptions along the way. See about my questions -- so, in terms of how you determined that it was -- I guess, I should just ask. How did you determine what the manner of death was in this case?

DR. THIERSCH: I -- mainly by the circumstances that were surrounding this person's death. I mean, she was, I guess -- I guess, eventually it was determined that she was shot by somebody else.

MR. HOOKS: Do you remember how you came to learn that information?

DR. THIERSCH: I'm -- you know, I think there was -- there was information to that effect on the Investigator's report.

MR. HOOKS: Okay. And with respect to information that, I guess, you -- I'm trying to figure out what would have been available to you at the time. Do you remember if there was any blood spatter analysis done?

DR. THIERSCH: No.

MR. HOOKS: Okay. What -- would spatter analysis have been information that would have been -- I guess, you would have wanted or would have been sort of unnecessary for your determination?

DR. THIERSCH: No. I mean, cause and manner is pretty clear of what -- what -- what happened. I mean, as far as, you know, who -- who had the gun and who pulled the trigger, that -- I mean, that's really a, you know, sort of police, law enforcement investigative issue.

MR. HOOKS: Okay.

DR. THIERSCH: I'm relying on them for the information about who had the gun.

MR. HOOKS: Got it. Okay. With respect then to blood spatter -- I guess, the blood spatter tests though that have been done, is that information that if it had been

available to you, you -- you would want or you -- it would be important for you or is there a reason you wouldn't want that?

DR. THIERSCH: No. I mean, I -- I -- I would -- I would have looked at it. I don't -- I don't think that -- I'm not sure that it -- but it wouldn't have changed the cause. The manner, I'm -- I'm not so sure about.

MR. HOOKS: What do you -- what do you -- what do you mean you're not so sure about?

DR. THIERSCH: I'm -- I'm not sure what the blood spatter is gonna tell me to -- to help me determine cause. I mean -- excuse me -- manner.

MR. HOOKS: Okay. Yeah. Certainly. So, I also want to look at -- the -- the blood spatter report, as I understand it, didn't come back until like a year-ish later. I think we just got it last year.

DR. THIERSCH: I never saw it, so I'm -- I have no idea --

MR. HOOKS: Certainly. No. And I don't think you did. It's not a pop quiz. I want to just present you with, you know, one of the pages now, and just kind of show you -- and this is Bates 404.

DR. THIERSCH: We could -- we may -- perhaps we can short circuit this, because I'm not a blood spatter specialist and I -- I'm -- I -- I don't -- I don't really -

- really rely on it that much.

MR. HOOKS: That's fine, too. I just wanted to see what relevance, if any, it would have. So, I appreciate you sharing that. So that's -- that's what I wanted to clarify. With respect to, I guess, you know, you talked about how you're, you know, relying a lot of persons to get information in terms of what goes on, and I want to figure out, as well, are you ever relying on family to give you information or looking to speak with family so you can get some information about the decedent?

DR. THIERSCH: I mean, in general, yes. Certainly -- certainly, I mean, the family may have information that's important. I don't -- I don't recall -- I don't -- I never -- I don't recall speaking to family on this -- in this particular case.

MR. HOOKS: Okay. So, if there had been, I guess, prior occasions where the decedent had been -- when we're saying suicidal ideation, is that information that you, you know, would have wanted necessarily in order to make a determination here?

DR. THIERSCH: Well, I mean, sure. That -- that's -- that's pertinent.

MR. HOOKS: Okay. And would -- in terms of how you get that information, it -- would getting that from family matter, or if you've got hospital records that show that

she'd been hospitalized for suicidal ideation, would that have been relevant for you to determine a cause or manner of death?

DR. THIERSCH: Well, I mean, that's -- that's kind of background information. It gives you an idea of what perhaps is going on in the decedent's head, you know, around the time of the death. But I mean, I think it's -- it's fairly important to know where -- where is -- where -- who had the gun, when it came down to it.

MR. HOOKS: Okay. And again, I know it's been some time here, and it's not in the autopsy report, so I want to make sure I'm not missing it. But do you remember your understanding of how you came to learn sort of who had the gun or what happened to the gun?

DR. THIERSCH: I mean, I think, again, I'm -- I'm -- I point you to the Investigator's report where initially I think there was some thought that this was a suicide, but eventually the boyfriend turned himself in and admitted to the -- to the shooting. I mean, that -- that's -- that's basically all I have. I -- I don't -- I mean -- I mean, I -- I have information that she was shot by somebody else. All right. That -- that would make this a homicide. If -- if those facts change, then, you know, interpretation is different.

MR. HOOKS: Understood. So, give me just a moment

here, 'cause I think I am starting to near the end of my questions. And I do appreciate your patience. I just want to make sure we -- we cover all the ground. I think a couple of these are gonna be relatively quick. And then I'm gonna just turn it over to my Co-Counsel, Ms. Parisky. So, with respect to, I guess, making the determination, does you have any independent recollection about talking about, you know, how you would rule -- or how you would classify in this case with either Dr. Harruff or anybody else in your office?

DR. THIERSCH: No.

MR. HOOKS: No. Do you have any notes that you are still able to access that would have, I guess, captured sort of your decision making about, you know, sketching out how you would do it other than what we've reviewed?

DR. THIERSCH: No. I mean, I -- I have no access to the file. I have no access to King County records. I mean -- I mean, you have pretty much -- I guess, I don't -- I don't know exactly what -- what else is at King County, but I think you've seen all of it.

MR. HOOKS: I think it's -- it's most of what we have other than going through the photos. And so, in terms of sort of, for lack of a better phrase, like is there, you know -- was there -- at any point did you conduct anything like, you know, hypothesis testing to see if -- if this, I

guess -- if homicide made more sense than suicide, of what the reason was that you didn't categorize it as undetermined necessarily?

DR. THIERSCH: No. I mean, the information was, you know, the -- that the boyfriend was re -- was responsible.

MR. HOOKS: Okay.

DR. THIERSCH: I mean, that's the information that I had. So, it's -- it's a homicide.

MR. HOOKS: And if you hadn't, I guess, received information about -- let's -- just playing out a hypothetical, and I understand it's -- it's not hypotheticals that we're in, but if you hadn't, I guess, received any information about what happened with the boyfriend in this case, would that have changed your assessment at all?

DR. THIERSCH: Well, ultimately what it comes down to is who -- who had the weapon and who pulled the trigger? I mean, whose -- whose actions set in -- in motion the events that led to her death. So, I mean -- I mean, information about what was going on with the boyfriend might -- might be interesting, but ultimately what it comes down to is who pulled the trigger.

MR. HOOKS: Uh huh. And is the absence of a gun, you know, a factor that plays a -- a role in determining whether this was suicide or homicide?

DR. THIERSCH: I'm not sure what you mean by absence of a gun.

MR. HOOKS: So, let me doublecheck here, just to make sure it's -- I'll go back a page here. I think it's included here. So, when we had spoke -- oh, here we go. So, on the page itself -- and I'm happy to screenshare again, just to see what you mean.

DR. THIERSCH: Yeah.

MR. HOOKS: Or so you could see -- see what I mean. You can see on -- on this page where it says they responded to the scene, but they were unable to find a firearm. You know, is that one of those factors that would bear heavily on whether this was suicide or homicide?

DR. THIERSCH: Well, I mean, is it -- I mean, that -- that -- that's -- that's concerning if you don't have the weapon at the scene. Usually when -- when someone has a self-inflicted gunshot wound, the -- the weapon is there. The absence of a weapon does cause concern because, you know, after someone shot themselves, I mean the weapon typically doesn't move. So, what happened to the weapon?

MR. HOOKS: And that's why we just want to make sure we're understanding what information is sort of playing that role in trying to establish this. So, I wanted to make sure we -- we just revisited it and we're all on the same page.

DR. THIERSCH: Yeah.

MR. HOOKS: So, give me -- give me just one sec. All right. So, I think I'm about done with my questions. I think that Mr. Frias may have a few questions he wants to go over with you. And so, I think at this point I'm going to turn it over to Enrique.

Enrique, do you want to go ahead?

MR. FRIAS: Yes.

Hi, Doctor. This is Enrique, again. So, just to go over some quick topics. If I missed them, I apologize. Just bear with me here. Did -- when the decedent -- when she was at Harborview Medical Center being treated, and as we mentioned, she was there for 18 days getting medical therapy, did you happen to review any of those medical charts or medical notes from the doctors that were treating or providing medical therapy to the decedent at that time?

DR. THIERSCH: Typically, where -- we get those, but I -- I -- you know, at this point I don't recall that. I -- I don't have a recollection of that.

MR. FRIAS: If you had seen them or received them, would you have notated that in the autopsy report?

DR. THIERSCH: No. Not necessarily.

MR. FRIAS: Okay. And I know that Mr. Hooks here was showing you the entire autopsy file, and -- and there was the diagram showing the -- a female body with some

handwritten notes in it. And in your autopsy report there was the part about medical therapy that was conducted on the decedent. Did you note anything about any of the decedent's wrists or hands, whether they had been in a cast or in a brace of any kind, for either the right hand or the left hand?

DR. THIERSCH: I don't -- I don't recall that. And I don't -- I don't -- I don't -- I don't -- I don't think I mean any notation about that.

MR. FRIAS: Okay. When you examine a body, are you able to tell if the decedent is right-handed or left-handed?

DR. THIERSCH: No.

MR. FRIAS: Okay. I know that you stated that you had received some information, I believe, from law enforcement, possibly from the Investigator, the Death Investigator. Did you have any indication that the decedent had been using drugs of any kind, illegal substances?

DR. THIERSCH: No.

MR. FRIAS: If you did have that information that a person was doing cocaine, or methamphetamines, or other substances, would that impact your -- how you would classify a cause of death or manner of death?

DR. THIERSCH: No. No.

MR. FRIAS: Okay As far as the -- I know that you

mentioned earlier that you -- you examined the -- the scalp and then took -- took out the brain, cut apart the brain, and then you looked at the inside of the head, and all that stuff, were you able to tell what caliber of round was used based on the -- the damage that you saw?

DR. THIERSCH: No, I did not.

MR. HOOKS: Okay.

DR. THIERSCH: I did not make it an estimation.

MR. HOOKS: And I -- again, apologies if Mr. Hooks asked you this. Were you able to tell how close the firearm was to this head when the bullet entered the head?

DR. THIERSCH: And -- and that was -- we had a discussion about that, in determining range of fire. And I said there was no fouling or stippling, which would indicate that this is a more distant range wound. However, there is a caveat that this is 18 days out. This is also after modification due to medical therapy.

MR. FRIAS: Okay. I know that Mr. Hooks earlier asked you how many autopsies you had done at King County Medical Examiner's Office in a year. Approximately, I believe you stated 300. Some of them range one hour, some of them can range quite a few hours. Again, just a rough approximate from your time at King County, when you do autopsies, how many of those would be related to gunshot wounds to the head? Are we talking like 10 percent, 5 percent, 20

percent? Rough approximate per year?

DR. THIERSCH: You mean of King County or of my personal?

MR. FRIAS: Well, of the ones that you've done, I guess. But I -- I would assume for King County.

DR. THIERSCH: So, I'm just thinking in -- in general. It's -- probably, oh, I mean, it's probably under 10 percent.

MR. FRIAS: Okay.

DR. THIERSCH: I mean, it's, you know, probably in the single digits somewhere. There -- I mean, there's certain -- certainly there -- depending on, I mean -- depending on the caseload, I mean, there -- there -- particularly during that time there were lots of homicides, and there were also lots of suicides, probably double the number of suicides to homicides.

MR. FRIAS: Understood.

DR. THIERSCH: So, it's -- so, you know it's -- it's somewhere -- yeah, probably -- probably below 10 percent.

MR. FRIAS: Okay. And --

DR. THIERSCH: I -- I --

MR. FRIAS: -- and --

DR. THIERSCH: -- I mean, that -- that's just off the top of my head.

MR. FRIAS: Totally fine.

DR. THIERSCH: If you --

MR. FRIAS: Yeah. Totally fine, that it's a 10 percent approximate. I'm -- I'm not holding you to any number. So, I know that you said that of that 10 percent, some of them are homicide, and it's double the number for suicide.

DR. THIERSCH: Yeah.

MR. FRIAS: So, of all -- and again, I know that you don't have all your 6000 or 7 --

DR. THIERSCH: Well, I -- I should -- I -- I'm -- I'm sorry. Let -- let me back up on that. I mean, the number of cases that come through King County, I mean, when you -- when you just look at the gunshot numbers, there are more -- there are probably double the number of suicides than homicides. And in suicides, we don't necessarily always autopsy those cases. So, let me just put that -- make that clarification.

MR. FRIAS: Okay. So, I understand that you're not going to have all 6,000 or 7,000 autopsies that you've done throughout your career memorized in the back of your head, but of the ones that you do recall, just based on your general observations of doing this very frequently throughout your tenure as a doctor and pathologist, would the entry wounds and exit wounds for gunshot wounds to the head for suicide decedents that you've examined, have those

entry wounds been in similar places in the head, whether occipital or parietal or frontal, or is it typical -- do you see them typically more in one spot versus another, in the -- the scalp or brain or head?

DR. THIERSCH: Excuse me. My phone was going off. Let me just -- I'm sorry. You're -- you're -- and just to paraphrase it. You were asking about locations of gunshot wounds. You know, suicide versus homicide. Is -- is that -- is that right?

MR. FRIAS: Just for suicide, the ones that you recall. You know, I know you said it's doubled the number roughly, but do you -- do you frequently see the entry wound of gunshot wounds to a head for suicide autopsies in a same or similar area?

DR. THIERSCH: Well, oftentimes, I mean -- I'm -- and -- and I -- and I don't have the -- I mean, I think there's some studies out there that look at the statistics there, but people oftentimes don't shoot themselves in -- directly in the face. It's usually off to the side, under the chin, something like that, in the mouth. Although sometimes people do, you know, put -- put the -- the gun -- they shoot themselves in the forehead. That -- that's -- that's a little -- a little unusual, but it -- it does happen.

MR. FRIAS: Have you done examinations or autopsies of decedents where you did have information that it was a

suicide, and the entry wound was in the back area of the head?

DR. THIERSCH: Yeah. I mean, back towards the -- the posterior aspect, yeah. And that -- that does happen.

MR. FRIAS: Okay. I think Mr. Hooks asked a similar question. I'm gonna try not to ask the same question here. If you did not have the information from the Death Investigator, or from law enforcement, or from any other area that you received information from during the time that you did this autopsy, would it -- would you -- would it have been possible to classify this manner of death as suicide as opposed to homicide? For instance, you just get the body, they say, "Hey, tell us what happened." You don't have any external information other than your own medical expertise. Would you have been able to classify this death as a suicide?

DR. THIERSCH: Well, I mean, there -- there are several assumptions there. You know, number one, you're assuming, I mean -- in particular -- particularly in this case, where she's been in the hospital for 18 days, there -- there usually is some information about how -- how the person was found and how they got to the hospital. But let's say that's not the case, she's just found somewhere. It would be -- it would be really quite suspicious to have a young woman with a gunshot wound to the head and no -- no

idea about what's going on. That -- that would -- that would be quite suspicious.

MR. FRIAS: Okay.

DR. THIERSCH: I mean, and that -- I mean, that would -- that would probably prompt us to -- to dig a little deeper.

MR. FRIAS: Mr. Hooks, can you go back to Bates 231, please? At that bottom section of the notes from the Death Investigator? Bates 231. And share the screen.

I'm almost done here, Doctor. I appreciate your -- your patience here.

DR. THIERSCH: Yeah.

MR. FRIAS: And if you could zoom in on that bottom part so that the Doctor can read it or see it clearly. So, there's that sentence in there, and I think Mr. Hooks had asked you about this in the beginning, and you had noted that it says it right there. So, here it says, "According to Dr. -- I believe that's Vaughn -- and medical records, the subject was admitted to Harborview Medical Center on 3/2/21 with a gunshot wound to the head -- of the head. Circumstances of the shooting were unknown at that time. By 3/3/21, it had been documented that the subject was shot in the context of domestic violence." I just want to confirm, and I think Mr. Hooks asked you this, but did you ever speak to Mr. Porras-Foye, this Death Investigator?

DR. THIERSCH: I don't recall.

MR. FRIAS: Okay.

DR. THIERSCH: I -- I -- I -- I probably did, I -- but you know, it's -- I -- I don't recall at this point.

MR. FRIAS: Okay. Let me see here.

DR. THIERSCH: And so, let me -- let me just make sure this is -- this is the King County Investigator?

MR. FRIAS: Let's see. Yes, I believe. Mr. Zachary Porras-Foye was -- let's see.

DR. THIERSCH: Yeah. I -- I -- I probably did, but I -- I have no recollection --

MR. FRIAS: Okay

DR. THIERSCH: -- at this point.

MR. FRIAS: Not a problem. Let's see. I'm just checking my questions here. I think -- I think that's all I have.

Ms. Parisky, did you have any final questions for Dr. Thiersch before I do the -- the wrap-up, closeout?

MS. PARISKY: Yeah, just one or two. Thank you.

Doctor, you indicated that Jennifer Peterson -- there's a notation that Jennifer Peterson in the file had been present for the autopsy, and -- and she's a King County Prosecutor.

DR. THIERSCH: Yes.

MS. PARISKY: Can you say again, what -- what --

what's the purpose of a Prosecutor coming to a autopsy; do you know?

DR. THIERSCH: Well, you'd have to ask them. I mean, it -- it's -- I think -- I think that that was a practice that the Prosecutor's Office had, to send people down to watch autopsies. I mean, it doesn't -- doesn't really make any difference to me.

MS. PARISKY: Does -- would her presence, or any Prosecutor's presence, have made you think in any way, "Oh, this -- this might be a homicide"?

DR. THIERSCH: I mean, whether -- whether there's a Prosecutor or not really doesn't -- it doesn't influence me that much. It's -- it's just a case that the Prosecutor's Office is interested in. I mean, that's all that -- that it really indicates to me.

MS. PARISKY: Okay. That makes sense. Thank you.

Mr. Hooks, anything else?

MR. HOOKS: I don't have anything else at this time. Enrique, do you want to go ahead and do the closeouts?

MR. FRIAS: Sure. Doctor, this is Enrique again. I know we've asked you a lot. Is there anything else important that you think that we should know about, either about the work that you did or the autopsy report that we went over, anything that you think is -- is important for us to know?

DR. THIERSCH: I -- I think we kind of covered the ground. I don't think there's anything more there.

MR. FRIAS: Okay. And then just to make sure. Other than this autopsy report and everything else, did you do any other follow-up work that perhaps is not documented in this report that you recall?

DR. THIERSCH: No. I don't recall doing anything else.

MR. FRIAS: Okay. And are all the answers that you've given true and correct to the best of your ability?

DR. THIERSCH: Yes.

MR. FRIAS: Okay. Dr. Thiersch, again, we've taken a lot of your time, and we really appreciate your patience. I'm just gonna say the time here and then we'll hang up. The time is 3:38 p.m., and this concludes the interview.

Doctor, thank you so much again, and I hope you have a great rest of your day.

DR. THIERSCH: All right. Goodbye.

MR. FRIAS: Bye.

(END OF RECORDING)

C E R T I F I C A T E

I, the undersigned transcriptionist, do hereby certify:

That the foregoing Audio Transcription of Taped Proceedings was transcribed under my direction; that the transcript is a full, true and complete transcript of the proceedings, including all questions, objections, motions and exceptions; except as indicated as "inaudible" herein, to the best of my ability;

That I am not a relative, employee, attorney or counsel of any party to this action or relative or employee of any such attorney or counsel, and that I am not financially interested in the said action or the outcome thereof;

That I am herewith securely sealing and sending this transcript to the King County Department of Public Defense, The Defender Association Division for filing with the court.

That I have certified this transcript this 18th Day of August, 2023.

/s/ Sheila L. Boensch
Sheila L. Boensch, residing at
Saginaw, Michigan.

ATTACHMENT B
Dr. Richard Harruff Interview 1

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THE DEFENDER ASSOCIATION

STATE OF WASHINGTON,	)	
	)	NO. 21-1-00012-9 SEA
Plaintiff,	)	
	)	
vs.	)	
	)	
KAI ELIJAH BLUE LIGHT,	)	
	)	
Defendant.	)	

TRANSCRIPT OF RECORDED INTERVIEW
OF DR. RICHARD HARRUFF
NOVEMBER 18, 2022

A P P E A R A N C E S:

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King County Medical Examiner

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RECORDED INTERVIEW OF DR. RICHARD HARRUFF

NOVEMBER 18, 2022

MR. FRIAS: Okay. So, the handheld recorders have started.

MS. PETERSEN: Hold on. Sorry. Now it's started.

MR. FRIAS: Okay. The handheld recorders have started. So, this is Enrique Frias, and I'm an investigator with the Defender's Association Division with King County Department of Public Defense. Today's date is Friday, November 18, 2022, the time 11:31 a.m. We're conducting an in-person interview at the King County Medical Examiner's Office in Seattle, Washington with King County Medical Examiner, Dr. Richard Harruff, and we're speaking about the Kai Light case, and that's Court Cause No. 21-1-00012-9. Also in attendance for this in-person interview are defense attorneys, Mr. Vincent Hooks and Ms. Liza Parisky, who represent the defendant in this matter, along with prosecuting attorney, Ms. Jennifer Petersen. Dr. Harruff, do you understand that we're recording this interview and do we have your permission to record?

DR. HARRUFF: Yes.

MR. FRIAS: Okay. Mr. Hooks, do you understand that we're recording and do we have your permission to record?

MR. HOOKS: Yep.

MR. FRIAS: Ms. Parisky, do you understand that we're recording and we have your permission to record?

MS. PARISKY: Yes.

MR. FRIAS: Ms. Petersen, you understand we're recording and we have your permission to record?

MS. PETERSEN: Yes.

MR. FRIAS: Okay. So, Dr. Harruff, thanks for your time. We definitely appreciate it. We're just going to ask you some questions here. If anything doesn't make sense, please let me know and we can clarify, and then if I can just kindly ask that you speak loudly for the handheld recorders, that would be appreciated. And then just to start off, Doctor, can I have you state and spell your full name for the recording?

DR. HARRUFF: Richard Harruff, H-A-R-R-U-F-F.

MR. FRIAS: Okay. And can I just ask you for a brief background regarding your career as a doctor and pathologist?

DR. HARRUFF: I have -- I could give you a CV, but since you asked, I graduated from University of -- from Indiana University for the M.D. and the Ph.D. I've trained in forensic pathology at University of Wisconsin, New York University, University of Tennessee, and I'm board-certified in anatomic clinic and forensic pathology, and I've been the medical examiner since 1993, initially as associate medical

examiner, and chief medical examiner since 2000.

MR. FRIAS: Okay. Thank you. Mr. Hooks.

MR. HOOKS: Yeah. So, Dr. Harruff, obviously, you are an institution here. I do want to ask some more questions, just because I've never had the opportunity to interview you before, just about what your role is. So, what makes what you do different from one of the typical medical examiners?

DR. HARRUFF: Well, I do the same thing, and generally how we operate is that we have a number of pathologists. Currently we have five or six pathologists and trainees, and we rotate the fulltime pathologists on a weekly schedule. So, we take call -- that means we're on duty -- for that week. And so, usually the duty pathologist takes the homicide cases or assigns them elsewhere, and I'm in that rotation just like everybody else. In addition to that, I review all the autopsy reports that are published by this office, all of them, and those that are certified as homicide or suspicious. Usually just the homicide cases, I will counter sign them because that's basically the tradition that's been, you know, carried through, the chief medical examiner signs off on cases so that if the initial pathologist is gone, there would be a backup. Now, since I'm getting so old, that probably doesn't make much sense because the chances of somebody else being around longer than I am,

and you have that complication, you know, that you've made is that the -- whether it's -- what do you call that when you got to have the initial --

MR. HOOKS: Confrontation?

DR. HARRUFF: Confrontation person. You know, like if Thiersch is dead and Harruff was dead, this guy could not be prosecuted. Is that how it works out?

MS. PETERSEN: Well, that's certainly not how we would argue it works out, but, yeah.

DR. HARRUFF: Okay. But, you know, the idea is that somebody is a backup in this case. You can't get ahold of Thiersch, so you got me, and I just sign it, indicating that I, at that time, I agreed with, you know, basically the report itself, that the report followed basically the format that is a standard of our office, and at that time I agreed with the observations and conclusions of Dr. Thiersch.

MR. HOOKS: You said that it is a tradition.

DR. HARRUFF: Yeah.

MR. HOOKS: Can you tell me a little more about what that means and sort of what the criteria are for how that review takes place?

DR. HARRUFF: Well, tradition means that I inherited it from the previous medical examiner in 1993 and carried it through my practice here, so starting in 2000 when Dr. Reay left, I became the chief, and then so I would sign

off on those. And the review process is pretty straightforward. I just went through it and see if everything's there that I would expect to see. I'm not proofreading it carefully, but, you know, generally I will be aware of the case, and most of the time I'm actually gonna be familiar with the case because I'm here every day and I look at the cases, I walk through the autopsy room. I'm not standing over Dr. Thiersch as he's actually doing the examination because, you know, everybody here is I feel competent, and so I don't have to watch them. So, it's just basically in a way a formality, but then just a way to quality assure things. So it's sort of like, you know, they've got a gunshot wound and all the components of that observation are there. I will probably be familiar with the photographs that document the case. I might forget some of the details, of course, and hopefully they're in the file somewhere that would be accessible.

MR. HOOKS: So, I am not a scientist. I am not a doctor certainly, and so I do have some general questions about terminology, and because we haven't had an opportunity to interview Dr. Thiersch yet, I hope you'll forgive me that some of these are going to be particularly basic. Can you define for me cause of death and manner of death?

DR. HARRUFF: Okay. Well, yes, that started pretty basic. Okay. These are terms that appear on the death

certificate. Cause of death is the disease, injury or condition that led to death is often times called the underlying cause of death. Some people call it the proximate cause of death, and then starting from that cause, there might be additional intermediate causes that result in finally the death. There's a good example here, is that she's been in the hospital for eighteen days before she died, and so during that time, she developed pneumonia, which is a natural disease process, right. But she developed the pneumonia due to the gunshot wound to the head. So, if we're gonna lay it all out, we might say that pneumonia is an intermediate condition, or the significant condition that was not independent of the gunshot wound, but due to the gunshot wound. So, if we're gonna go like a sequence of immediate cause of death, we could say like she had -- the death certificate sometimes says cardiac arrest or respiratory failure, but it might be the immediate cause of death. Intermediate cause of death, would be bronchial pneumonia, underlying cause of death is gunshot wound to head. So, those are sort of the things that go into establishing cause of death. Now, manner of death is some indication of the liability for causation, being the human factor. And so the four categories are natural, you know, heart disease, cancer, stuff like that; suicide, through the actions of one self; accident death due to conditions that were not caused by any

other person with intent; and then homicide is basically death due to the actions of another. And those may be established by direct observations or by knowledge of the circumstances that are supplied by an investigating agency external to our own. So, in this case, they got the cause of death as gunshot wound to the head, homicide is the manner of death, and that manner is that in this case, not necessarily a direct observation, but based on the circumstances that come from some other source.

MR. HOOKS: Like I said, because I am going to be very basic here, let's talk about just cause of death for a minute. Can you walk me through how exactly -- I realize it's going to be different in every case -- an individual determines a cause of death? What is the process that is used?

DR. HARRUFF: An autopsy. In our case it would be an autopsy, where you make an examination of the entire body, and we document injuries and condition of all the organs throughout the body by pathologic anatomic pathology analysis, and we identify the injuries that are -- the conditions that are abnormal, and having a big brain damage due to a gunshot wound, you know, makes it pretty easy that we can identify that. So, that would be the major abnormality here due to an external event, and that would be the underlying cause of death.

MR. HOOKS: Okay. Is there one accepted way in which an autopsy is conducted or is that determined on an office by office basis?

DR. HARRUFF: It's generally the practice and standards of pathology conducted in essentially the same way everywhere. You know, pathology was established, you know, in the 1800s as being sort of a standard scientific practice of medicine. So, that is very well defined -- opening up the head, neck, chest, and abdomen to identify all the injuries and disease processes within all the organs and body cavities.

MR. HOOKS: Is there a particular set of steps that a medical examiner follows when they're conducting an autopsy each time or is there a different approach, a different order they take in each case?

DR. HARRUFF: It would be pretty much the same thing. There's reasons for it, but basically we start with an external examination and that will be -- the extent of that will be dependent on the type of case. For example, in a scene death, you know, the clothing might be very important, so we will examine the clothing before we remove it, we remove any trace evidence that we can identify. So, a hospital death, like this one, that's not really, you know, relevant because, you know, all that stuff's been removed a long time ago. And then we remove the clothing. There's no

clothing now in this case. And then we start with taking pictures of everything, and before and after we remove the clothing, and then we will wash the body to make sure all the blood and things are off. We'll do x-rays and then proceed with the internal examination, which is, you know, opening up the head, of the body cavities, and so it sort of follows along with the format of the report itself, starting with the external examination and then the internal examination. So, I think the difference would be is that we do the examination of the torso before we actually go to the head. So, in the report, first section is head, but that's actually one of the last things -- that would be the last one, but it's just a matter of formatting the report more than the actual sequence of the examination. And then the other things would oftentimes be listed in the section of the ancillary things, collecting toxicology specimens, we do microscopic examination on all the pieces and tissues that we take out, and that's all standard. And for a homicide case, we will do x-rays, but in a case like this that's been in a hospital, those x-rays may not be necessary because x-rays, depending on the x-rays, have been performed already in the hospital.

MR. HOOKS: With respect to the protocols for determining a cause of death and conducting an autopsy, are those written down somewhere and administered to medical examiners here in this office so there's a kinda set of

criteria by which to assess them or how do they know that protocol?

DR. HARRUFF: That is something that one learns by the training of pathology. So, a pathologist is board-certified, and that means that they have been trained in the science of pathology, which is, you know, all the things that are considered the standard thing to do in that profession. I mean, you're not working off of a script of questions to ask me, right?

MR. HOOKS: Literally, no. You're correct. I'm trying to just learn more.

DR. HARRUFF: So, but you have the training of being an attorney of how to sort of do things in your science, right? I mean, you say you're not a scientist, but actually, you know, you would -- you're a professional, so you have a set of standards by which you operate. And so, like following a, you know, instead of a menu of things you do; you just know what to do and you follow the standard because you've been trained.

MR. HOOKS: Yes.

DR. HARRUFF: So, I was just trying to make that analogy.

MR. HOOKS: No, I appreciate that. And just one more question on cause of death for now. The reason I'm asking about the order is I'm curious, you know, in a case

like this where there is a gunshot wound to the head, does somebody still go through all of the other steps of doing the dissections, the other parts of the body or is there --

DR. HARRUFF: Yeah.

MR. HOOKS: Can you just tell me a little more about that?

DR. HARRUFF: Again, it's a standard, and because you may want to know something that is not really relevant to the cause of death, and the family might want to know something. So, we're trying to do something that will answer all questions whether they come up now or in fifty years. We actually have material from cases back to, as far back as the '60s. So, we can actually answer some questions on cases that were in the '60s. We've got our autopsy report, and we do get questions. A real good example of that was remember the fear about the Avian flu a few years ago, it was gonna be a big pandemic and kill everybody, and that let us to have interest in the 1918 pandemic flu. It killed maybe fifty million people. It was really also called the Swine flu. Well, they had identified a pig farm in Kansas where they found they virus came from, but somebody got the idea, well, let's go back in some of these old pathology cases and see if we can find out, you know, from doing PCR on the DNA where the virus came from, and they found out it was an Avian flu, not a Swine flu. And so, that's what sort of fueled the fear

of another, you know, 1918 outbreak of a severe influenza, which fortunately didn't have them, but, you know, prepared people to be looking out for a particular virus and make the vaccines and so forth appropriately. So, that's a really good example of something a hundred years ago that was collected by a pathologist that answered the question that really was quite relevant to, you know, global health. Does that answer your question? That was a --

MR. HOOKS: No, that was great. No, I appreciate you explaining why the steps have to get followed every time. That helps a lot. Okay. So, I want to shift gears now and talk a little more about manner of death. So, you walked through kind of those four criteria. Can you just give me an understanding of what kind of the history of manner of death or where that comes from?

DR. HARRUFF: Well, because it's, you know, these are indicators that we -- so we use medical science, right, so we're engaged in things that are of legal significance, so we use the term medical-legal. So, we've got the medical science sitting there, but then oftentimes circumstances will be important for the unnatural death. For example, for this example, a gunshot wound to the head, it could have been homicide, suicide, or accident, right?

MR. HOOKS: Uh-huh.

DR. HARRUFF: So, we have to know what the

circumstances are. Now, we're not investigating directly an event that occurred eighteen days ago, but somebody else is. So, they supplied that information to Dr. Thiersch that was a sufficient basis to call it a homicide, that the death was due to the actions of another.

MR. HOOKS: Sorry. Because I heard cause and manner used together so frequent, so we try to parse these out. I guess, what are the steps for determining a manner of death exactly?

DR. HARRUFF: Well, with something in the hospital. You know, we're not at the scene, we can't see any of the direct evidence, so we coordinate with the police. We're not a police agency, but we coordinate with the police and the prosecutor, I think -- I see somebody's name here. I thought I saw a name. Were you here?

MS. PETERSEN: Uh-huh.

DR. HARRUFF: Okay.

MS. PETERSEN: Yes.

DR. HARRUFF: I swear I saw your name. So, you know, we've got the law enforcement. Oh, yeah, there's Jennifer Petersen happened to be passing by, I guess.

MS. PETERSEN: [Indiscernible]

DR. HARRUFF: Yeah. And so, the SPD, I don't see the name for SPD, but the investigating agency was SPD and Jennifer Petersen was representing the circumstances of the

gunshot wound that led to her death. Now, so we don't know that independently. There's no way we can. So we're basing the manner of death on the circumstances that were reported to us. And I don't -- really at this point I don't remember what they were.

MR. HOOKS: That distinction helps a lot, and so just give me a moment because some of my questions are going to be irrelevant and I don't want to waste your time. Before I ask a little more about the circumstances, I want to go back, because you mentioned there's those four types of death and then there's also, I think you mentioned an undetermined?

DR. HARRUFF: Right.

MR. HOOKS: What does that mean?

DR. HARRUFF: If there's insufficient information to place the manner of death in any of the above categories, then we can use the word "undetermined."

MR. HOOKS: And how -- I guess, what is the determination? I don't want to say what is the determination for when it's undetermined, but how do you know when the quantum of information is not enough to determine a cause of death, or manner of death, pardon me?

DR. HARRUFF: Yeah. Well, for example, finding a body just laying in their home or somewhere, and we don't know how it came to be dead. And probably the best example is maybe a drug overdose. We don't know if they took a drug

for recreational purposes with the intention to end their life. So, we have two possible manners and we don't have enough information to make that selection, one or the other. Gunshot wounds are usually, you know, maybe they're witnessed or there will be some evidence at the scene, or, you know, some reported circumstances. For example, in this case, there was a report apparently that documented somebody else's actions in this death.

MR. HOOKS: So, you think that -- to make sure I'm tracking -- the example in the home I think helps me. So, if you have somebody -- again, just for the sake of example, and [Indiscernible] caveats -- who was found, you know, dead in their home from like a heroin overdose, it's determined that heroin overdose caused the death. I guess, what would be the information that could lead that being classified as accident versus being classified as suicide?

DR. HARRUFF: Well, if a person was a heroin user, if there's a syringe right behind, if they have other evidence of drug use laying around, they have no indication that they were, you know, wanting to kill themselves, and so, you know, it would be a compilation of physical evidence as well as circumstantial evidence. So, we do consider circumstantial evidence and we make it very clear where the objective evidence starts, or ends, and the circumstantial information begins. So, if say the prosecuting attorney and

the police give me a full set of information, that would be a basis to classify a manner of death. Now, again, I've forgotten what those circumstances are, and maybe you can refresh my memory, but if you come along and say that's a bunch of -- that's completely untrue, and, you know, well I'm not gonna decide who's telling the truth or, you know, making stuff up, but, you know, if there was a serious dispute about the circumstances, then that would be a situation in which I'd say perhaps it's best to call it undetermined. Now, again, I'm looking at scientific evidence, but I will consider the circumstantial evidence, and you're gonna say, oh you're sounding so highly biased because the prosecutor is right in there talking to Dr. Thiersch and telling him what to think and what to say. And I'm saying that, yeah, maybe so, but at some point that information seemed credible and it was consistent with the injuries, and so, you know, that's, again, why we have trials, and that's why we have defense attorneys and stuff, so we're justifying your existence.

MR. HOOKS: That's one way of putting it.

DR. HARRUFF: Yeah.

MR. HOOKS: And to be clear, I'm not trying to, I think do anything more than just really understand these terms that come through, and so I hope it's not coming off like I'm trying to --

DR. HARRUFF: Oh, no, no. These are -- these are

excellent questions because, you know, we want to make it clear why we're saying certain things. You know, we don't want to say something that makes it seem like we know something that we don't.

MR. HOOKS: And it's exactly that. I just want to know why, you know, certain information has been said. So, just briefly, and then we are going to turn to the specifics of this case, because your background has been very helpful. You know, you gave me the example of with the person who is dead in the home could be an accident, but hypothetically if there had been something like evidence of a suicide note or, you know, evidence that somebody had seen them, you know, being very sad in the week leading up to it, would that information be relevant to then potentially rule it as a suicide instead of as an accident?

DR. HARRUFF: Yeah. And I saw the investigator's note. This was originally reported as a suicide, I believe. Do you have the investigator's report?

MR. HOOKS: Are you referring to the one from the KCME investigator at the scene?

DR. HARRUFF: Who was he?

MR. HOOKS: I don't know. Do you have that? We will need to double check.

DR. HARRUFF: Well, a good indicator, if you're talking about the heroin overdose, but finding a person dead

of a gunshot wound and there's no gun next to him, now that's gonna be a homicide unless somebody gives me a really good story of why that gun is not there.

MR. HOOKS: Can you tell me why?

DR. HARRUFF: Huh?

MR. HOOKS: Can you tell me why?

DR. HARRUFF: Well, if somebody shoots themselves in the head, collapses, they're unconscious, they're not gonna be able to move the gun, right? But if they're in a boat somewhere, shoot themselves in the head, the water -- the gun drops in the water, that might be an explanation why the gun's not present.

MR. HOOKS: That distinction helps a lot, so thank you for providing that. One term I want to make sure I'm clarifying too is you used the term "circumstantial evidence," and there's a legal meaning to it, but I think there's a lot of common meanings to it. Can you tell me what you mean when you're saying the term "circumstantial evidence"?

DR. HARRUFF: Yeah, I'm not getting to -- it's basically somebody knows what was going on at the time of the injury that led to the death. Not making it really rising to some legal thing, but somebody that I feel has some valid information tells me this, this, and this happened, and I'm not going to be in a position of interviewing them to

determine whether their circumstantial information is -- maybe use circumstantial information rather than circumstantial evidence.

MR. HOOKS: So, give me just a moment because I think I want to shift gears here. The last couple questions on this line. Is there a scope of what is considered kind of relevant information or fair game information considering a manner of death and what's irrelevant?

DR. HARRUFF: Yeah, I think there would be -- and there would probably be different degrees of relevance, like, you know, it would have to be balanced by the physical evidence versus the circumstantial and medical history. For example, we will always say do we know the medical history. That might be important in certain cases. Like, did she have cervical cancer, does she have a history of cervical cancer? Well, that might be interesting and it might be a basis of being depressed or wanting to end her life, but as far as the cause of death, it's irrelevant. Okay? For the manner of death, it may have some relevance because mother might say, "Oh, yeah, she was depressed because she had cervical cancer."

MR. HOOKS: I appreciate you making that distinction between the cause and manner because it did not occur to me, but clearly makes sense that it would apply to both aspects there, who was making the decision for what

information to consider. And when I ask that, I understand that the medical examiner is the one making the determination of manner of death, but I guess what I want to know is what say to they have in what information they want or would want to have.

DR. HARRUFF: Well, in a case such as this, cause of death is easy. Manner of death requires some information that we don't have direct access to. We look at the hospital records. It doesn't help. Brought in by medics, whatever. That doesn't tell us what happened at the time of injury, so we have to seek out other sources of valid information, and we consider, you know, police investigations to be valid. You might want to consider them to be bias, but we consider them valid because, you know, that's their job, and so we will accept that information. We want the answer to the question, was somebody else involved? So that would be the information that we will seek. Now, we're not really concerned about her medical history because that's not really relevant, so we're very specific on what type of information we want surrounding the injury that led to her death.

MR. HOOKS: And I don't mean this to be particularly broad, so I hope it doesn't come off that way, but why do you have to determine a manner of death in addition to a cause of death?

DR. HARRUFF: Because they pay us just a bunch of

money, it's an embarrassing amount of money they pay us, and, you know, we have to make a decision because that's what everybody wants. It's on the death certificate; there's a little box there we got to fill out. And then oftentimes it's the most difficult part because we have to consider, you know, these questions that sometimes we don't know the answer to. So, people might say things that, you know, are misleading or not true, and that we're basing our decision -- so we have to make this decision as part of our job, our responsibility to classify manner of death. You know, if you want to make it really difficult, the whole concept of manner of death is, you know, rooted in history. You know it's like in the old days, you know, it's like everything was controlled by God. There were natural deaths, which means that God chose you to die naturally by his plan. And then there were unnatural deaths that were not according to God's plan. That's why they call it unnatural. So, nobody likes to be called unnatural, right. That means there's something wrong with you. God does not love you. So, if you died unnaturally, you're sort of suspected of being in disfavor of God's eye.

MR. HOOKS: That's a real aspect of some concern of like character that seems entwined with that unnaturalness there.

DR. HARRUFF: Yeah. Now, they did make a caveat or

a qualification; if you died as a hero, that's okay.

MR. HOOKS: So that way that's unnatural but it's okay still?

DR. HARRUFF: Yeah.

MR. HOOKS: It's part of the plan.

DR. HARRUFF: But, you know, if you fall off your horse [Indiscernible], you know, that's just unnatural. God just didn't like you because, you know, you fell off your horse. All right. Now, you didn't want to make it too broad and I did.

MR. HOOKS: No. I'm glad we went to the real existential question there. Finally, you know, I was doing some kind of fiddling around with manner of death online. A very advanced Google research of manner of death. I found this, it's called, "A Guide for Manner of Death" from the National Association of Medical Examiners.

DR. HARRUFF: Yeah.

MR. HOOKS: Is that an important document? I don't know what that is, so I don't --

DR. HARRUFF: It's sort of guidelines. It's not -- some of these other documents that sort of say, they'll give you like a scenario and then they'll collect responses from medical examiners and say -- and then they'll come out and say thirty-seven percent of medical examiners where they classified the manner of death this and this; fifty-two

percent would have classified it as that; and eight percent would say, I don't know. There will be some variation on how different medical examiners will classify things, but more importantly, if you classify something, you should have a good reason to, and it's not going to be absolute if the reasons are all the same, but you should say what was the basis of your certification, what information did you use to make that classification or certification, right. So, you can't just say, well, you know, this, this and this, but you may be able to state exactly what those were. And because I'm just looking at the autopsy report, that does not give me any circumstantial information at all, right. So that's why I keep saying the circumstantial information came from other sources that we incorporated into this document, right, into the certification, and that's why you would be, you know, burning your money to ask, you know, are those circumstances such that, you know, used for perhaps to certify it was a homicide. If you said, yeah, I agree that somebody was shooting a gun, somebody else was shooting a gun, it's good enough for a homicide, just that. If you say, well, they're shooting a gun, but they didn't really mean to shoot her, I'd say, well, that's still a homicide because there's death due to the actions of another. We don't really consider the intent, but somebody shooting a gun in the direction of somebody else, or with the possibility of [Indiscernible]

somebody off --

MR. HOOKS: Oh, I didn't mean to cut you off. But just out of curiosity, you said that there -- so if somebody just hypothetically were under the influence of alcohol, meaning they've had, you know, enough alcohol to be at, you know, .15, and they like hit and they kill somebody, does that get diagnosed as a -- or determined to be an accident or a homicide?

DR. HARRUFF: Hit by a baseball bat or by a Buick?

MR. HOOKS: A vehicle. DUI.

DR. HARRUFF: Oh. Well, those become a special case because, you know, again, going back on tradition, that is death due to the actions of another. Okay? So, yeah, we could classify all traffic fatalities as homicides, but we don't. They get classified as an accident on the death certificate. Now, for our internal classifications, we call them accident (traffic), just to indicate that we're not really sold on just calling these accidents. There was no intent of course, but we, in general, don't consider intent except, you know, that good example of traffic fatalities. You know, our homicide rate would skyrocket if we call them homicides. And it's, you know, well recognized that the prosecutor can prosecute vehicular homicides even though the death certificate says accident. So, that's sort of another exception of what we try to make more or less scientific, but

there are exceptions [Indiscernible].

MR. HOOKS: And then just because you made reference to the autopsy report here, or working through it, when, I guess would it be the case that the circumstances would be noted in the autopsy report, if any?

DR. HARRUFF: When there's maybe a scene investigation where we have direct knowledge of the circumstances.

MR. HOOKS: Okay.

DR. HARRUFF: And with a [Indiscernible] death like this, those circumstances are basically encapsulated in using the word "homicide."

MR. HOOKS: Okay. So, I appreciate all this background info, and so now -- because I know we're going to start to run short on time here in a little bit -- I want to shift gears and talk about this case specifically. So, can you walk me through any memory you have about what your initial involvement was with this particular case? And please feel free, and I'll just say for the record, we have a copy of the autopsy report here.

DR. HARRUFF: Well, I don't have any independent memory at all.

MR. HOOKS: Okay.

DR. HARRUFF: But our general procedure is bodies come in during the night or the previous day. We, meaning

all of us, we do the case as a group, and then make the assignments. So, in this case, we would all see the case, including myself, and then we would go in the autopsy room and perform the autopsy examination. So, initially, I'm seeing the case at the same time Dr. Thiersch and everybody else is, and then he's assigned to do the autopsy.

MR. HOOKS: So, what -- and I'm not asking this in a way to say like to test your memory, to be very frank about it, but what information would you or Dr. Thiersch have had about this case before beginning the autopsy?

DR. HARRUFF: Probably only the medical record that she came from the hospital with a gunshot wound to the head, and that's probably all we need to do, all we need to know to get started, because initially we're not particularly concerned about the manner of death. If it was a fresh case, there would be a whole lot more procedures involved because there's the evidence to collect. This has no evidence to collect, except we did find a fragment of the bullet in the head, so that's the only evidence that was collected here. But we go through the same procedure every time, so it's pretty straightforward from a technical, operational perspective.

MR. HOOKS: Okay. So, then once the case comes in, how does it get like assigned? Like, how did Dr. Thiersch get assigned to it?

DR. HARRUFF: Most likely he was the duty pathologist that day and he says, "Well, you do that case, you do this case, and I'm gonna take the homicide."

MR. HOOKS: Okay.

DR. HARRUFF: Or the shooting.

MR. HOOKS: Okay. So, then once that happens, what would have next happened?

DR. HARRUFF: Well, we go in the autopsy room and we follow our standard procedures for conducting an autopsy.

MR. HOOKS: So, I did see, and we talked about this earlier, that there is this form called "Record of Autopsy Appendix," and it's Bates 267 here.

DR. HARRUFF: Uh-huh.

MR. HOOKS: So, it does say that Jennifer Petersen, her name is here. What would that have meant at the time?

DR. HARRUFF: Well, that would have been a good indication that there was some concern that this is a homicide. Just her walking in would have been a big red flag of potential homicide.

MR. HOOKS: Got it, okay. So, I know you said that you walk around. This is just a logistical question. Are there individual rooms where the medical examiners are doing the autopsies?

DR. HARRUFF: One big room.

MR. HOOKS: One big room?

DR. HARRUFF: Uh-huh. Six stations.

MR. HOOKS: Okay. And so are you like making rounds the whole time that that's happening or like what is your role there?

DR. HARRUFF: Well, I may be doing autopsies in the same room, and stop right there, and I'll walk around and see what other people are doing. I may more or less be looking at things directly, but also will see the pictures that are collected at the autopsy, or obtained during the autopsy. We actually all look at the pictures at the afternoon meeting. We have a meeting in the morning at 7:30, and then we have a meeting in the afternoon at 2:30, so we all will basically everybody is assembled, we'd be looking at the pictures that were obtained during that examination.

MR. HOOKS: Again, only asking this to make sure I'm on the same page. It sounds like you do not remember anything in particular about what Dr. Thiersch was doing for the autopsy in this case, beyond just understanding what he wrote. Is that right or is there anything --

DR. HARRUFF: Correct.

MR. HOOKS: -- that you do? Okay.

DR. HARRUFF: Yeah.

MR. HOOKS: Thank you.

DR. HARRUFF: I'm not looking over his shoulder.

MR. HOOKS: I just don't want to ask forty

questions where it's going to be I don't remember. That's not what I'm going to do.

DR. HARRUFF: Okay.

MS. PETERSEN: Hey, Vince, just to let you know, I was just notified by the court that they have a verdict and they're taking it at 1.

MR. HOOKS: Oh, okay.

DR. HARRUFF: Oh, okay.

MS. PETERSEN: Which means I'm going to leave in the next -- so that I can get back and park and get in, I need to leave by 12:30.

MR. HOOKS: Yeah, I think we're going to need to -- let's go till 12:30.

MS. PETERSEN: Go to 12:30 and then we can discuss what to do, yeah.

MR. HOOKS: Okay. That sounds good.

MS. PETERSEN: Sorry, Dr. Harruff.

MR. HOOKS: All righty. So, give me just a moment. So, in this particular case, I think you said earlier cause of death was not particularly difficult to determine. Is that right?

DR. HARRUFF: Correct.

MR. HOOKS: Okay. So, given that that was there, do you have any idea given what's on the autopsy report, when you would have -- like, when you might have been present just

from what's in the autopsy report or like oh I could have been present this part but not present for this part, or?

DR. HARRUFF: I could have been in and out and seen various parts of the exam.

MR. HOOKS: Okay. So, the question that I have about, again, still just sticking with the report for now, is I see here that the date was signed June 18th, 2021. Why would it have been so much later after the autopsy was done?

DR. HARRUFF: When was the autopsy?

MR. HOOKS: The autopsy was I think March 23rd, 2021.

DR. HARRUFF: Do you remember what was going on in 2021?

MR. HOOKS: I think there was a lot going on in 2021.

DR. HARRUFF: Yeah, it was a shit show.

MR. HOOKS: So, I guess the question I have then, just because again, I just don't know, what would have happened between March 23rd, 2021 in what Dr. Thiersch was doing, and then the date that this was formally authored.

DR. HARRUFF: Well, there's always a delay between the autopsy report, getting all the information and collecting it together, and actually just writing the death -- the autopsy report. It would include microscopic examination and just wading through the number of cases. So,

we all were having more cases than you can work out in one day in terms of getting reports done. So, you're basically dealing with a stack of cases that high, and then you take the top one and you see if you can finish it, and then you take the next one, see if you can finish it. And in the meantime, you're having to answer questions or having to go through other examinations or something, or, you know, somebody tested positive for COVID and you have to like do something else, and, you know, there's a lot of interference with getting things done, and the volume of work -- well, I could ask you. Why aren't you getting your cases done?

MR. HOOKS: And I don't mean to suggest anything negative by not getting it done, because as people who are in trial, and we all recognize what falls to the back burner. So I was curious if there was any information pertinent to this case that caused the delay, would be really what I was trying to get at.

DR. HARRUFF: Let's see. Let's do this QA test here. June 18th, March 23rd, April, May, June. So, he was able to complete his report in ninety days, less than ninety days, and that's sort of our criteria of if we get things done in ninety days we feel good about it. So, I feel good about this one.

MR. HOOKS: Okay.

DR. HARRUFF: Just because it was done within

ninety days. So, by National Association of Medical Examiner Standards, ninety percent of your reports need to be finished within ninety days.

MR. HOOKS: Okay. And with respect to, I guess the cause and manner, would those have been determined on this date or would those have been determined before then?

DR. HARRUFF: Probably before, and what we look at at that time would be the death certificate, when the death certificate was certified and filed.

MR. HOOKS: Okay. So, the death certificate would align more closely from a timeline perspective of when those initial determinations were made?

DR. HARRUFF: Yes. This is just repeating what's on the death certificate, whether that certificate itself will have the date.

MR. HOOKS: Okay.

DR. HARRUFF: Sometimes the death certificates put pending, and then we have to look at the affidavit when it's changed from pending to the final manner.

MR. HOOKS: Okay. So, with respect to documentation that Dr. Thiersch would have generated along the way -- like caseloads sound like they are astronomical for examiners --

DR. HARRUFF: They're a little rough, yeah.

MR. HOOKS: What internal notes, I guess would Dr.

Thiersch keep to help kind of keep these statements straight, keep the information in this case straight that he learned?

DR. HARRUFF: The main thing are the photographs that are always available on our file server, and then these records here, and anything else would be in the police reports or the case file folder as the physical record, and then those are supposed to be copied and submitted to the prosecuting attorney's office. They have sort of a formal way; they fill out the form and request it and everything that we have in our file.

MR. HOOKS: Okay. And the reason I'm asking that is I know that like we have like time slips that we have to keep to help us like kinda remember what we've done on cases. Would there be likely daily notes that he would have been writing down by hand or somewhere to kind of help himself keep track of this, and would any of that have been preserved, do you know?

DR. HARRUFF: No. It's probably nothing like that actually. Basically when you've done the autopsy, you've created everything that's in here, and then the next thing that's coming is the microscopic examination, and we do have records of when the microscopic slides are back, but we don't have any record of when those were actually examined.

MR. HOOKS: Okay. So, in this case, with respect --

DR. HARRUFF: Why do you make time slips?

MR. HOOKS: Huh?

DR. HARRUFF: Why do you make time slips?

MR. HOOKS: Well --

UNIDENTIFIED FEMALE SPEAKER: [Crosstalk]

MR. HOOKS: -- they really require us because apparently county funding depends on us keeping time very rigorously.

DR. HARRUFF: Okay. So, we're not -- we don't need to be paid timewise, so yours is more a financial [Indiscernible] and we just get paid a salary. They don't care how many hours we work.

MR. HOOKS: No, and I only say because they want us to document kind of our impressions and things we're working. So, I don't know whether there is a similar system.

DR. HARRUFF: Yeah. And then you're probably cussing that you have to fill out all those time slips because filling out the time slips takes up time, right?

MR. HOOKS: And you can't bill for billing on time slips, so it's just ouroboros of misery. So, with respect to Dr. Thiersch's circumstantial evidence that he would have learned, what do you know, if anything, about what he would have learned of the circumstantial evidence in this case?

DR. HARRUFF: Yeah, that's what I'd have to, you know, review some of the records, but we don't keep third-

party records. We only keep our stuff. So I couldn't like pull out a police report or something. So this all would have been verbally transmitted to Dr. Thiersch at that time that he was gonna make his decision.

MR. HOOKS: Okay.

DR. HARRUFF: So, you know, if you wanted to pay me as a defense expert, you know, I would say, hey, you know, whatever, but, you know, you're not -- nobody's gonna [Indiscernible] so I don't know. I'll just tell you I don't know what the circumstances are, but the fact that homicide is on there, that Dr. Thiersch heard something that caused him to call this a homicide and he told me, and I agreed with him.

MR. HOOKS: Okay.

DR. HARRUFF: All right.

MR. HOOKS: So --

DR. HARRUFF: If you're gonna tell me oh that's just like crazy stuff, I'd be happy, you know -- I'd be happy if you're paying me, but, you know, since you're not, I'd just be happy to argue with you, because obviously I like talking with you.

MR. HOOKS: I mean, I'm here to learn. I'm not here to argue. But --

DR. HARRUFF: Yeah, unfortunately Dr. -- I mean, Jennifer is just going nuts.

MR. HOOKS: I know. I'm not meaning to hold you here, Jennifer.

DR. HARRUFF: She's saying, would this guy just shut up.

MR. HOOKS: So, it is 12:26. I have more questions, but I want to let you go because --

MS. PETERSEN: Yeah, so sorry.

MS. PARISKY: Why don't we just wrap up the recording and let --

MR. HOOKS: Yes. So, it's 12:26. Dr. Harruff, thank you so much for your time.

DR. HARRUFF: Okay. Forgive me for rambling on.

MR. HOOKS: No. Thank you.

MR. FRIAS: And this concludes part one of the interview.

[END OF RECORDING]

CERTIFICATE OF COURT APPROVED TRANSCRIBER

I, DARLENE E. BROWNLEE, Court Approved Transcriber for King County Superior Court of the State of Washington, do hereby certify under penalty of perjury under the laws of the State of Washington that the following is true and correct:

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2. I received the electronic recording from the King County Department of Public Defense;

3. This transcript is a true and correct record of the recording;

4. I am in no way related to or employed by any party in this matter, nor any counsel in the matter; and

5. I have no financial interest in the litigation.

DATED this 19th day of December, 2022.

/s/ Darlene E. Brownlee

_____

Darlene E. Brownlee

ATTACHMENT C
Dr. Richard Harruff Interview 2

THE DEFENDER ASSOCIATION
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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR THE COUNTY OF KING

STATE OF WASHINGTON, Plaintiff, v. LIGHT, KAI ELIJAH BLUE, Defendant.	Docket No.: 21-1-00012-9 SEA

VERBATIM REPORT OF INTERVIEW OF DR. RICHARD HARRUFF (FROM RECORDED PROCEEDINGS)

Date of Interview: 04-28-2023

Participants: Enrique Frias, Defense Investigator
Vince Hooks, Defense Attorney
Liza Parisky, Defense Attorney
Jennifer Petersen, Prosecuting Attorney
Dr. Richard Harruff, Interviewee

Location: Harborview Medical Center
Seattle, Washington

Transcribed by: Susan Snedeger

MR. FRIAS: All righty, so my handheld recorders have started. This is Enrique Frias, and I'm an investigator with the Defender's Association Division with King County Department of Public Defense.

Today's date is Friday, April 28th, 2023. The time is 11:10 a.m. We're conducting a part two interview with King County Medical Examiner, Dr. Harruff, talking about the Kai Light case, and that's Court Cause Number 21-1-00012-9. In attendance for this in-person meeting are Defense Attorneys, Mr. Vincent Hooks and Ms. Liza Parisky, who represent the Defendant in this matter, along with Prosecuting Attorney, Ms. Jennifer Petersen.

Dr. Harruff, do you understand that we're recording this interview, and do we have your permission to record?

DR. HARRUFF: Yes.

MR. FRIAS: Mr. Hooks, do you understand that we're recording, and do I have your permission?

MR. HOOKS: Yes.

MR. FRIAS: Ms. Parisky, do you understand that we're recording, and do I have your permission?

MS. PARISKY: Yes.

MR. FRIAS: Ms. Petersen, do you understand that we're recording, and do I have your permission?

MS. PETERSEN: Yes.

MR. FRIAS: Okay. Dr. Harruff, thanks again for your

time and your patience. I'm going to turn it over to Mr. Hooks, and we'll begin.

MR. HOOKS: Good morning, Dr. Harruff.

DR. HARRUFF: Hi.

MR. HOOKS: Before the recording started, you had inquired about what we had talked about last time, and what the purpose was of this interview. So just to kind of give you an overview, last time we were here, we spoke about, uh, cause and manner of death, broadly speaking. And you were quite generous with your time and walking us through the history of the cause of death, and how those determinations were made, as well as an overview of the different sorts of manner of death that can be categorized.

Uh, we also talked about some of the (inaudible) policies with respect to cause and manner of death, and that these were the operational logistics of what, uh, goes into determining each of those in a particular case. Um, so today, we're really focused specifically, I think, on this particular case. I have just a couple of general background categories to go through that are going to be pretty quick.

Um, and then I want to make sure that we really spend the majority of the day just focused on this matter. Um, we did also, just for the record, I think, send you a number of documents to review in advance of this interview.

Um, there were three Seattle police reports that we denoted, uh, some specified pages within each of those to review. We also sent you, um, the blood spatter report, as well as the, uh, autopsy that Dr. Thiersch had written, and the autopsy report, I should say, (inaudible) as well as an email. Um, I should say a report that incorporates a reference to a statement you reportedly made on roughly, March 23rd, 2021. Um, did you have an opportunity to review those documents?

DR. HARRUFF: Not in detail, so you'll have to walk me through those, uh, to ask me questions.

MR. HOOKS: Certainly, and I'm not --

DR. HARRUFF: I feel like I'm responsible for my documents. I'm not responsible for other people's documents.

MR. HOOKS: And understanding that there's a lot going on. I did bring copies of those, so if that makes it easier, we can just (inaudible) okay. So jumping into it, um, with respect to the manner of death now and focusing on that, um, can you just talk about what information is in effect able to be considered in a medical examiner's determination on manner of death?

DR. HARRUFF: Uh, most importantly, the autopsy results, and uh, some understanding of the circumstances, uh, without relying heavily on the more arguable things,

um, that may have some nuances. So we go for the, uh, the major categories of circumstances, for example, relevant to this case. Uh, person is found, gun present, not present -- - a person found shot, gun present, not present to distinguish between homicide and suicide. Those being very clear categories. Now, getting into the weeds about like, oh, somebody said this. Somebody said that, and somebody ran off with a gun, things like that, uh, those are issues, of course, but those are something that would require, you know, your interaction between prosecution and defense.

So, we're just taking a higher level approach to classifying things, uh, based on, in this case whether a gun was there or not. Because obviously, if a person shot themselves, the gun should be there. And if somebody wants to say, well, uh, yeah, I took the gun, now that's then something that I have no ability to evaluate. And then you start your arguments for and against that -- those two possibilities. And that's fine with me.

MR. HOOKS: With respect then, and I appreciate you tying it into this case. To be clear -- excuse me -- please feel free to, at any point because I think that's what these questions are about, and I want to make sure I just give you the opportunity to work sort of the broader level to the specific. Um, you mentioned operating at a sort of higher level. Can you tell me what you mean, when

you say that?

DR. HARRUFF: Well, if I've got to -- gave the example, uh, that I'm not going to sit and argue whether somebody took the gun, for what reason. I'm just looking at the evidence of the autopsy report, and uh, it would be based on -- was it, you know, the possibilities there are endless, as you'll point out. But we just look at the facts very objectively. Um and that's a pretty high level because there's all types of different factors that go into this.

There will be investigations that occur, uh, for months, years thereafter. But we have to make a decision -- what category to put this, uh, death into. Uh, and we have the four categories that would be called manner of death. And do we have evidence that it's natural death, accident, suicide, homicide. Do we have enough evidence to, uh, think that somebody else was responsible for this death, other than the dead person themselves. And by that, we're putting in the basket, then gets evaluated by the Prosecuting Attorney. The Prosecuting Attorney then decides whether to, uh, make charges and so forth. So we're just one little element, making the best that we can out of the most easily documented, uh, facts, objectively. Is that okay with you now?

MR. HOOKS: It is. And I'm going to ask another

follow up. With respect to the absence of a gun, specifically, tell me what -- I guess, work goes into determining that that suggests that this is a homicide versus a suicide.

DR. HARRUFF: Well, that should be pretty clear. Suicide, the gun should be within the range of a person shooting himself in the head, being incapacitated, unconscious, not being able to dispose of the gun themselves. So somebody may have stolen the gun. That's another element that is outside of our purview, especially, as in this case, we have a gap of several days between the incident and our examination.

So, uh, we rely on other people's reports, of course, especially the police. Uh, but, you know, the decision has to be made at some point, what basket to put this in. And uh, you -- if you see our -- see our, uh, autopsy report, that is labeled opinion. Okay? So we, based on the available information at the time, classified it as a homicide because there's sufficient evidence of the absence of a gun, absence of evidence of close-range fire, and our examination, that -- that was sufficient to put it in that category, and then turn it over to legal argument about now what do you do?

MR. HOOKS: And I appreciate that you sort of frame it as you being just one step in the chain, and it getting

passed along. And so, to just -- I guess, contextualize that a bit, what you said earlier that it, you know, should be pretty obvious why that's a -- why that's not a suicide. Um, but I guess what I want to know, is that coming from anywhere else that's sort of just the interpretation of events, like sort of a (inaudible) scenario. Is that coming from research? I don't mean to sound dense about it, but when you say it's pretty obvious, what is the reason it's pretty obvious?

DR. HARRUFF: A gunshot wound to the head of this type and documented in the medical record at least, is that this person, the decedent, uh, would have been unable to move the gun out of the environment in which she was found, here she was found. And therefore, uh, the gun was moved by somebody else.

MR. HOOKS: And I guess what I want to understand is why does that then mean that somebody else must have shot her. That's -- that's really what I'm getting at.

DR. HARRUFF: Well, uh, there's no evidence of close range fire. I think I've said that so far, meaning there's no stippling, gun powder residue on the skin that would indicate that this is close range firing. There's no -- no evidence of close range firing. Uh, so those two things taken together, and you probably know that I'm talking about, uh, our anatomic evidence of close range fire is,

uh, important. Suicides generally have evidence of close range fire, contact or near contact. So (inaudible) then we get a little bit concerned.

We then, uh, acknowledge that there's been some delay between the shooting and the death. And therefore, uh, that is not, uh, something that would be an absolute in such a case in which there's a prolonged survival time. Uh, so then we rely on the absence of the gun. So taken together, uh, was the basis of our, uh, decision to classify this as a -- as a homicide.

And again, this is an opinion, and I've given you the basis of the opinion. So you can argue the basis of the opinion, but I can say from my perspective, there's no evidence of close range fire, number one. Number two, you could correct me in my understanding that the gun was not present. So are those two things true? I'd say the first one is, and do you have any information that would make me feel like the second one is untrue?

MR. HOOKS: And -- and I want to be really clear. I'm -- I'm just trying to understand sort of that process, or what are the factors that underlie (inaudible).

DR. HARRUFF: Take objective observations -- no evidence of close range fire, no gun. Okay. I'm not going to make it difficult from my perspective. You can make it difficult from your perspective. Okay. And that's how we

do things; right? That's what this whole process is about.

MR. HOOKS: So I want to ask then, with respect to the close range fire issue, there had been about 21'ish days (inaudible) exact number --

DR. HARRUFF: Uh-huh.

MR. HOOKS: -- between the time of the sustained wound and the time of death. And there have been a number of procedures done on the decedent to try to save her life. Could those procedures have, I guess, altered her skin, or altered her body in a way that would have removed evidence that the gun was fired at close range?

DR. HARRUFF: Uh, possibly, yes. Uh -- and uh, we can look at pictures to see what we're talking about. Um, there's the entrance wound. So --

MS. PARISKY: And I think we're looking at -- sorry, just for the record, 0217.

DR. HARRUFF: 217, yeah, okay, so, that's a pretty clear representation of this wound. Uh, I could go into other details, uh, it's not necessarily a typical (inaudible) for a, uh, contact gunshot wound to the head. Uh, a contact wound actually will have a, you know, if there's a dense deposition and burning and charring and so forth, this would usually show up. But I'm not going to, uh, say that's absolute. So I did mention before that that does complicate the interpretation a little bit. So I'd

maybe add to the mix of criteria, the location of the wound. But none of these are absolute. And that's why we make it clear, this is an opinion.

MR. HOOKS: So would it be, I guess, fair to say that again, because you are dictated to have to render an opinion in terms of categorizing that. Because you don't see in this particular photo that we're referencing, you know, the evidence of that close gunshot.

DR. HARRUFF: Uh-huh.

MR. HOOKS: That's a reason you're not considering it.

DR. HARRUFF: Uh, right. No, I don't have to make a decision, but then I'm not doing my job. So, I'm not the final arbitrator. Uh, I give my opinion, and I honestly, uh, indicate where the, uh, questions lie. Right? So (inaudible) there's no (inaudible) no burning, no evidence of close range fire, and the gun is not in the environment where she was found. So, uh, those are -- those are the things. You could, you know, argue with each of those things, and that's fine with me. I'm just giving the basis of the certification because yes, we basically have to. We really don't have to, but we should, to be doing our job properly for the community, and the, uh, the legal community and for the family and for the sense of justice here.

MR. HOOKS: So I wanted to move forward a bit and just

clarify now. You know, are there steps that a particular medical examiner is allowed to take to try and get, I guess, more information than what they've been presented with, um, in order to rule on the manner of death?

DR. HARRUFF: Uh, right, but then, uh, then we have what we would regard extraneous information. And that's why I tried to say that we try to keep our sources of information as close to the body as possible. And because, you know, we can acknowledge that the police may have some bias, and they might tell us things. And we've seen this before. They tell us certain things that would influence us, and uh, you know, if I start saying, the police said this, the police say that, (inaudible) then you'd say, well, I'm biased by the police. And you know, I want to avoid having somebody else's bias. So we want to keep our observations as close as possible to the body.

MR. HOOKS: So then I -- I guess to clarify and make sure I'm understanding, are there steps that I guess a particular ME is allowed to take to try and get more information? I mean, is the office allow for them to collect additional information, or is it for -- we take what we have, and then we (inaudible) from there.

DR. HARRUFF: Uh, well, you paraphrased what I said before. We're just part of the, uh, process. And another idea that you might consider is, we are terrifically under

resourced. We do not do any independent investigation, other than what's immediately available. So we rely on other sources and try to avoid, uh, taking biases from the other sources.

I'll give you an example. Somebody called me up, or somebody called me -- or contacted our office. She wants our death certificate that was certified 20 years ago, uh, that said one thing, and she wants us to change it, and it's her mother. So she's got a really strong bias of what that death certificate said. And you know, if I wanted to be nice to her, I'd say, oh, sure, I'll change it to please you, but I can't. I have to maintain strict objectivities, and I'm not going to be changing official documents, just because somebody wants me to. So, uh, there's where I stand. Does that answer your question?

MR. HOOKS: It does, and -- and I want to jump forward a bit here now because I want to, I think, really bring to bear some of the questions I have about this particular case. So again, I -- I will clarify the understanding that you are again, you signed off (inaudible) report, but you weren't the person who specifically performed the autopsy (inaudible).

DR. HARRUFF: No, I sort of, no, I was in the environment and reviewed everything and generally agreed. Um, and I don't know if I'd been immediately responsible

for it, if something had been different, uh, but you know, I'm -- I'm again, relying on other people that I trust, employ and uh, back up.

MR. HOOKS: So, I want to then, I guess, ask if Dr. Thiersch is not going to come to court to testify, do you feel as if you are able to opine on the manner of death in -- in this case?

DR. HARRUFF: Yes, I mean, I can take those criteria, and say, that's sufficient. But I've said several times, I could acknowledge that you have, you know, a reasonable basis to argue without even stretching things too much, and then that's the Prosecutor's, uh, domain; right? You guys argue it out. I'll tell you exactly what I see and what the basis opinion is, and then it's up to you now. I've done my job. You do yours.

MR. HOOKS: So, I want to ask you now about some of the specific documents we sent you. And I will be as efficient in trying to tell you about these as I can. So, three of the documents we sent you were police reports. Um, and they were 2018-180258; 2017-418632; and 2018-6089. Um, and we had specifically directed you to pages for the narratives of these police reports. (Inaudible) say in all candor is that what these police reports contain are interactions that the decedent in this case had with law enforcement, where, uh, she had been threatening to kill

herself.

DR. HARRUFF: Mm-hmm.

MR. HOOKS: Or had indicated that she did not want to live any more.

DR. HARRUFF: Yeah.

MR. HOOKS: And what I want to know from you, um, is just given that the existence of this, um, you know, is this information that a medical examiner could be allowed to consider, in trying to rule on a manner of death?

DR. HARRUFF: Sure. That sort of thing is not uncommon, uh, especially in relationships that are challenging. There could be expressions, and we do have these considerations, uh, not uncommonly that, you know, there will be a fight or a disagreement and stuff, in which there's been some utterances of, uh, you know, self-harm. And then, uh, you know, a decedent, and we have to make a decision, what is the (inaudible).

So this is not uncommon, and it can produce some serious problems, uh, for everybody -- family, us, and the legal system. So, uh, I acknowledge that that does make it difficult, and uh, we can acknowledge that as well. And I certainly will not deny it. But again, that does take it about outside of my domain, and uh, going back to the three criteria that I've stated so far, and uh, leave it at that. That makes it a problem, and certainly helps your cause,

but it doesn't help mine.

MR. HOOKS: Just when you say it doesn't help your cause, what do you mean, it doesn't help your cause?

DR. HARRUFF: Uh, you know, it just makes it more difficult but it doesn't diminish the objectivity of what I'm trying to establish. There's three criteria, pretty straightforward objectivity -- objectivity, but you know, you start then introducing what again, we've called extraneous information. Uh, and then, what happened to the gun?

MR. HOOKS: And so, again, I'm really -- I -- it's more just asking. I hope you don't think that I'm trying to have like a one-on-one discussion and persuade you to one side or the other. It's really asking about what (inaudible).

DR. HARRUFF: Well, I mean, it's already certified. Everything is here. I'm just answering the questions.

MR. HOOKS: Yeah.

DR. HARRUFF: You know, so I'm just, uh, you know, enjoying the argument. Um, you know, I can't deny you've got a -- got a point of view. He wouldn't be here, if he didn't.

MR. HOOKS: And -- and, I hope it's -- it's coming off. I'm not trying to have an argument. I really want to know just what the (inaudible) of particular pieces of

data. Because you talked a lot about, you know, how data goes into the interpretation.

DR. HARRUFF: Yeah.

MR. HOOKS: That's what I want to do.

DR. HARRUFF: Yeah, well, I mean, we've got, you know, background information and police reporting and things and stuff, so that then just -- you could put it in a category of extraneous information. So the essential information that we have to consider, is just looking at the body, where it is, and the general circumstances, and then, of course, acknowledging the difficult points. Uh, and the extraneous information is not irrelevant. It's just that it's something that is outside of our purview. Unless, you know, some immediately before the shooting, she said to a witness that's not a suspect, I'm going to shoot myself. That would be helpful.

MR. HOOKS: So, with respect then to kind of another category of information, um, that I want to ask about, so, we didn't send this to you, but I -- I think I'm not speaking out of turn when I say that the decedent in this case, we learned had actually been hospitalized involuntarily four separate times --

DR. HARRUFF: Mm-hmm.

MR. HOOKS: -- for, uh, suicidal ideation and concerns for her well-being.

DR. HARRUFF: Yeah.

MR. HOOKS: And that she had been involuntarily committed to Seattle Children's Hospital. Um, and again, I -- I'm curious, it's at a hospital setting at this point. Is this information that a medical examiner would be allowed to consider ruling on the manner of death?

DR. HARRUFF: Sure.

MR. HOOKS: And is this information -- if Dr. Thiersch had had this in his possession, you would have expected him to discuss with you before ruling on the manner of death?

DR. HARRUFF: Well, I can't say if he had that information or not. Um --

MR. HOOKS: And I'm not saying, that if he had it, just for the sake of the hypothetical.

DR. HARRUFF: Oh, we probably would have, uh, you know, uh, batted it back and forth a little bit. Uh, the other category is, um, I'm determined. So if we have, you know, some -- for the solid evidence one way or the other, in both directions, we can split the difference. But the -- but the inflammation available, and especially the examination of the body, the decision was to classify it a homicide. Now, uh, sometimes we call it undetermined, and uh, the prosecutor does think other evidence is sufficient to proceed with a -- with a prosecution. Uh, and you know, hopefully, we have acknowledge to the prosecutor the

limitations of our, uh, of our opinion bases, which I've repeated about ten times now.

MR. HOOKS: And -- and with that context, I -- I appreciate the framing because that's -- again, it's really about understanding how these data points could affect an opinion, and I -- I will say it on camera, I don't see that Dr. Thiersch had this information at the time, certainly. Um, and I will just clarify -- I think I know the answer, but I don't want to make an assumption, um, do you have any indication that Dr. Thiersch had awareness that the decedent had been involuntarily hospitalized four times for suicidal ideation?

DR. HARRUFF: I don't remember any conversation regarding that.

MR. HOOKS: Okay, thank you. Now, again, moving -- so I -- I, you know, you used that -- that phrase undetermined. You brought it up a couple moments ago. Would having that information, I guess, change the discussion a bit, about whether this would have been categorized as a homicide versus undetermined?

DR. HARRUFF: It -- it could have been. It's -- it's not unlikely. I'm not saying it's probable because I don't know all of the factors that went into it at that time. We sort of have to deal with what had happened at that time. What information was available at that time. Uh, and so

we're talking about, you know, two years later, and uh, it's probably not, um, reasonable to then, you know, say what might have happened. I'm just saying what did happen, and now we're at this point where what happened has happened. That can't be changed. And now, uh, sorry, but I can't really help you out with your struggles, but uh, I'm trying to do my job and be fair to you.

MR. HOOKS: No, and I -- actually think your candor is helping out because I think we want to understand again, the evolution of, I think, the emergence of data, and how that would play into it.

DR. HARRUFF: Right.

MR. HOOKS: Um, and we recognize, and I think you've been -- it doesn't sound like he had that information at the time, and so, um, I think we want to know what you answered. You know, had he had it, would that have been something that you would have talked about and could have played a role. And it sounds like the answer is, fairly, yes.

DR. HARRUFF: Yeah, we -- we considered, uh, so many things. We spent a lot of time discussing these things. Uh, but if the information is available, that's not something we can talk about. Um, oh we even get into (inaudible) what if somebody said this. I said, well, wait a second. You can't be invoking these in a discussion, or

we'll never get out of here, endless speculation is exhausting. Uh, we have, uh, I won't tell you how many cases we have today, but we could do the what if game on all of them, but we would be here for the rest of the weekend. I'm sorry to be, uh, sort of, uh, dismissive regarding the practicality of what we do. We have to make a decision based on the information available at that time. If somebody comes with serious objections, we'll consider that, but, uh, we do have a legal system that decides these things. And I'm depending on you to do the next steps.

MR. HOOKS: Now, I want to go then -- again, forward again, and it's really just sort of interesting, another data point, um, here. So, if -- and I will say this, in our review of the discovery, um, we found some photos of the decedent actually holding a firearm in her mouth. Um, and also one holding what appeared to be a firearm. What appeared to be a firearm in her mouth, and also what appeared to be a firearm against her head. Um, and I guess what I know is whether that's information that a medical examiner, like Dr. Thiersch would have been allowed to consider, um, on ruling on the manner of death.

DR. HARRUFF: We could talk about the mental state. It also could be an indication that had she shot herself, why didn't she shoot herself in the mouth or the side of the head like the photos demonstrate. I mean, so if she

shot herself in a place that is not where she knew she would shoot herself, had she shot herself. So with that bit of evidence, it could work either way. Uh, we've seen plenty of people playing with guns. Uh, you probably know that guns are very common and irresponsible behavior with guns is very common. So that sort of thing could speak either way. It doesn't help us.

MR. HOOKS: (Inaudible)

DR. HARRUFF: It does not help us.

MR. HOOKS: Okay. And then -- so I think the answer just to leave that question was, it does sound (inaudible) he could have been allowed to consider, if that had been available at the time.

DR. HARRUFF: Absolutely.

MR. HOOKS: Okay, um, again, just another data point I want to ask about that we uncovered in our investigation.

DR. HARRUFF: Uh-huh.

MR. HOOKS: If there had been discussions with the decedent, between her and her parents about a plan to kill herself, or indicating knowledge of how to kill herself. You know, is that something that if your doctor had known about it, he would have been allowed to consider in determining the manner of death.

DR. HARRUFF: Certainly.

MR. HOOKS: So now, I -- I do want to talk about, um,

the blood spatter evidence in this case.

DR. HARRUFF: Mm-hmm.

MR. HOOKS: Um, so I do have a copy of the blood spatter report. I don't know if you want to have it for reference, or if you have a copy in front of you?

DR. HARRUFF: I'm not a blood spatter expert. I do remember that I suggested that, uh, you know, somebody look at the blood splatter, and see if it's there, and see if it would help anything.

MR. HOOKS: That's correct. So, I want to go into detail a bit about what you -- about what it was documented that you said. Um, so I'm looking at just Bates 160, um, and it says, the detective spoke with King County Medical Examiner, Dr. Richard Harruff. They spelled your name wrong on here, so I apologize. And after explaining the circumstances to him, and the wounds (inaudible), he suggested that had she shot herself, the blow back from the wound would have produced spatter along the sleeve of her shooting hand. So that's -- just for the frame of reference, that's our understanding of how they document that conversation.

DR. HARRUFF: Right, and that seems fair to me. I remember making that suggestion. But, I'm not a blood spatter expert. I said, you know, (inaudible). So, there we go. I don't know what the blood spatter expert said.

MR. HOOKS: So, I am going to go ahead and hand you a couple items. I understand you're not a blood spatter expert. And I'm going to hand you -- let's mark this Bates 404. I'll just give you an opportunity to briefly review that.

DR. HARRUFF: Okay.

MR. HOOKS: Um, and I'm also going to hand you what's been marked as Bates 406, so you can see sort of the real world version.

DR. HARRUFF: Okay. Yeah, I don't think this helped me. I do remember this, but I said, well, okay, another data point, but from my, um, perspective, I'm not sure I can really say this it's terribly helpful, except that there is blood spatter. But what it means, um, again, could be argued either way. Uh, low back means certain things to different people. All right? But in general, when a projectile enters the head, there's pressure, uh, inside the head, and there's bleeding and that pressure and that blood are expelled. So, um, it doesn't have to be a contact wound to have blood back. It could be a distant wound. Some people think blow back only occurs with, um, a contact wound, but that's not true.

Uh, now, of course we can't do tests on these things to, you know, if we're scientists we'd do a test to see if we could reproduce these things, but we can't do that

obviously. So, then that becomes a data point for your experts and your arguments to proceed along. Let's see. What else with that? Yeah, and then, I guess the other context of blow back is relevant to the gun itself. So, um, I don't know if you can tell me -- was there blood on the weapon itself that would indicate close range fire? So, I haven't heard anything about the gun. I mean, we talked about her and her clothing, and all these other things, but I haven't heard anything about the gun. I don't remember any examination of the weapon.

MR. HOOKS: I'm just looking up one document. So, I guess what I want to ask is, there was this discussion the detectives had with you. Um, where you had -- I think (inaudible) as saying that it would have produced -- if she had shot herself, it would have produced spatter along the sleeve of her shooting hand. Um, and so I think it's -- it's -- I understand you're not a blood spatter expert. It's fair to say that the spatter that's captured there is on the sleeve of her left arm. Is that right?

DR. HARRUFF: It's up towards the shoulder. There's -- I guess there's some back here too.

MR. HOOKS: Certainly, so I guess the entirety of the (inaudible) appears to have a number of blood spatter markings. Is that fair to say from (inaudible)

DR. HARRUFF: Right. Um, yeah, and does she shoot

herself with a left hand.

MR. HOOKS: Well, I -- I think what I'm asking is again, I want to make sure that I'm tracking based off of what you were reported as having said here, the conclusion could be right that -- if she had shot herself, it would have been with the left hand. Is that an interpretation that could be, I think, fair to say?

DR. HARRUFF: Uh, I think at this point this was a suggestion, but basically, uh, it means that the clothing, as she wore it, and how it was positioned, uh, has blood spatter on it. And then the interpretation is whether she shot herself. Is that sufficient evidence to say that she shot herself. I'm not sure. Um, it would be much more relevant to discuss the weapon itself, which I never saw, and I never heard any examination of. And that would be a good data point that we could sort of sink into. It wouldn't be absolute, but it would be another important data point that I don't have.

But I really want to know that because if she's got spatter on her clothing, obviously, she's close to the source of the blood. But was the gun close to the source of her blood. So the -- if the gun was close, then we're talking about, you know, a major data point that I'm completely lacking and nobody is supplying.

MR. HOOKS: So with this, I guess I want to know, Dr.

Thiersch did not have the ability to review this at the time of the autopsy because this report just came through a few months back now.

DR. HARRUFF: Are they this stuff?

MR. HOOKS: Yes.

DR. HARRUFF: Okay, no.

MR. HOOKS: Just so you know. So he did not actually have the opportunity to even review this.

DR. HARRUFF: Yeah.

MR. HOOKS: So, to step back then, and what we've talked about here, is we've asked you sort of about, again, about data points; right, and how they get interpreted. And to review, you know, the data points we talked about were three interactions with law enforcement, where the decedent, uh, was quoted as wanting to end her life or kill herself, and at one point was seen on a bridge, um, saying she wanted to jump. There's also the data point with the four involuntary hospitalizations, um, for suicidality.

DR. HARRUFF: Mm-hmm.

MR. HOOKS: Um, there's also the data point about photos with a gun in her mouth or against her head. The data point about the discussions between her and her parents, and how about plans that she could have to kill herself, as well as the blood spatter; right? Those are all data points we sort of asked you about. And I guess

what I want to know is about, um, cumulatively, what effect does having those data points together, I think have on being able to rule on the manner of death.

DR. HARRUFF: Uh, well, I told you that it's been certified as a homicide. Um, but there may be other elements that would dispute that. And I'm not in the position to, uh, dispute that. I think that, you know, the certification was fairly based on what we knew at the time. And I can't say what the discussions would have been, had we known about it at that time. And I don't know what the effect on the prosecution would have been, if we had certified it as an undetermined. Because we're only basing our opinion on these objective criteria that I described as rather eye level. We have the (inaudible) between the shooting and the death. So, I'd have to wonder, why don't you just get -- stop getting hung up about this one word, homicide, and say, well, we would suggest that you, uh, you know, ask your judge or whatever. Uh, Harruff would be happy to not talk about the word homicide because why argue about one little word when it is clearly an opinion from one person or from two people. Why don't you just move on and look at the actual facts of the case and not rely on a word on an autopsy report.

MR. HOOKS: I appreciate the way you framed it because I think, from what I've reviewed from (inaudible) the

guidelines -- it's been a broad debate as to how to use this administrative determination in a corporate setting, specifically in criminal courts. Um, and so, you know, I -- I guess what I would want to know now is, with cumulatively all of this data here that you have -- like I'm not asking you to speculate on Dr. Thiersch, to be clear because I know you can't do that. I don't want to put you in that position. Um, you know, having this data -- is this data - if you had this in light of everything else that you had, um, would be in support of ruling this undetermined versus homicide, just given the breadth of what is there.

DR. HARRUFF: Well, you ask me all these questions about your point of view, but then I don't think you've even -- I think you've evaded my curiosity of the weapon. Am I correct in that the weapon was absent from the scene?

MR. HOOKS: (Inaudible) when I say, it is correct. The police never recovered a weapon at the scene. That's why.

DR. HARRUFF: Okay. Did they recover a weapon anywhere?

MR. HOOKS: Uh, my review of the discovery is no.

DR. HARRUFF: Do we know who owned this weapon?

MR. HOOKS: Uh, my review of the discovery is that that's unclear.

DR. HARRUFF: Okay. So, uh, you're asking me about what I would have done, uh, what I would have done right back then and right now, is what happened to the weapon? And if you can't tell me that, I'm going to have to stick with homicide 100 percent.

MR. HOOKS: And again, I -- I think (inaudible). I think that's kind of what we were wanting to know is, in evaluating these data points, what's getting the (inaudible). And I think that helps clarify the situation.

DR. HARRUFF: Well, the most objective things, I mean, you know, medical records and stuff, there's a lot of people that are unbalanced and end up getting killed by somebody else. There are a lot of unbalanced people. They kill themselves, and uh, there's a lot of unbalanced people that are in relationships in which all kinds of violence occurs. Uh, there's a lot of unbalanced people, period. But being unbalanced, does not remove the responsibility one way or the other. Facts do.

And one fact is, that the gun is missing and never been recovered, although we apparently have somebody that was present. I mean, those are sort of things that I really wonder about that make me say, if we can't answer that question, we have to stick with our opinion that this is a homicide, and the prosecuting attorney needs to know about it very clearly and not be like avoiding our

responsibility to certify deaths, according to our best medical legal principles. Of course, we can always throw up, uh, you know, ideas and speculations and so forth. But that's not in my, uh, that's not my -- in my job description. Uh, so I'm sorry. It's a lovely discussion, but we do this all the time, the what ifs, and it doesn't really get us anywhere except, uh, you know, no closer to the truth. We just have to go with the evidence. And a missing weapon taken by somebody that claims that she shot herself really makes me, uh, have some anxiety about, uh, she shot herself. Especially with an atypical location, and no evidence of (inaudible). And of course, you can argue with those.

MR. HOOKS: Again, I appreciate your clarification. I think that's what we wanted to know what you're thinking. So give me just a moment. All right, so Dr. Harruff, we appreciate your time. I think we've -- we're coming in right under the hour. I just want to make sure that nobody else has any other questions, otherwise I think we're just going to kind of do our close out. Liza, do you have anything you wanted to ask?

MS. PARISKY: No, I think you've covered it.

MR. FRIAS: I don't have anything.

MR. HOOKS: Jennifer, do you have anything?

MS. PETERSEN: No.

MR. HOOKS: So I was -- surely you have more to ask.

MS. PETERSEN: You want to keep going?

DR. HARRUFF: No, we love to do this. Endless arguments are our specialty.

MR. HOOKS: And again, I --

DR. HARRUFF: Let's put it this way. It beats working. I'm sorry. I'm -- I'm a jokester, and you know because --

MS. PETERSEN: See, we are (inaudible)

DR. HARRUFF: Oh, you're working. I'm just having fun. Okay. But I'm getting hungry. Are you?

MS. PETERSEN: Yes.

MR. HOOKS: So it is 11:59. And Dr. Harruff, I just want to clarify for the recording, we have -- this is part two of an interview. Is there anything you feel like we haven't discussed in relation to this case that we should have asked you about?

DR. HARRUFF: Well, you should have started out with a gun. I've been trying to avoid saying that because again, that's sort of extraneous information. So I just sort of -- I started getting hungry, and I said, well, let's start asking about the gun. And then you couldn't answer any questions, so I'm embarrassing you. And so, I'm sorry.

MS. PETERSEN: Well, we're the lawyers. We can't answer questions.

DR. HARRUFF: Oh, really. I was just hoping to have a nice friendly conversation. But thank you for your patience and understanding of my limitations. There's manifold.

MR. HOOKS: And we appreciate your candor here, and you're, I think, honesty about kind of how you evaluate all this information. So, with that it's 12 o'clock, and then we can go ahead and stop the recordings.

(END OF RECORDING)

C E R T I F I C A T E

I, the undersigned transcriptionist, do hereby certify:

That the foregoing Audio Transcription of Taped Proceedings was transcribed under my direction; that the transcript is a full, true and complete transcript of the proceedings, including all questions, objections, motions and exceptions; except as indicated as "inaudible" herein, to the best of my ability;

That I am not a relative, employee, attorney or counsel of any party to this action or relative or employee of any such attorney or counsel, and that I am not financially interested in the said action or the outcome thereof;

That I am herewith securely sealing and sending this transcript to the King County Department of Public Defense, The Defender Association Division.

That I have certified this transcript this 12th Day of May, 2023.

/s/ Susan Snedeger
Susan Snedeger, residing at
San Tan Valley, Arizona.

ATTACHMENT D
Dr. Richard Harruff Interview 3

THE DEFENDER ASSOCIATION
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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR THE COUNTY OF KING

STATE OF WASHINGTON, Plaintiff, V. LIGHT, KAI ELIJAH BLUE, Defendant.	Docket No.: 21-1-00012-9 SEA

VERBATIM REPORT OF INTERVIEW OF DR. RICHARD HARRUFF (FROM RECORDED PROCEEDINGS)

Date of Interview: 6/27/2024

Participants: Richard Harruff, M.D., Ph.D., KCME
Defense Investigator Enrique Frias
Defense Attorneys Vince Hooks and Liza Parisky
Prosecuting Attorney Lauren Burke and Alex Muir

Location: Telephonic

Transcribed by: Margaret Stewart

UNIDENTIFIED SPEAKER: The orange light is on and they are running.

MR. FRIAS: Okay. So the recording has started. This is Enrique Frias, and I'm the defense investigator with the Defenders Association Division with King County Department of Public Defense.

Today's date is Thursday, June 27, 2024 and the time is 11:10 a.m. We're doing a --

RECORDING: Recording in progress.

MR. FRIAS: Okay. We're doing a third interview with King County Medical Examiner Dr. Harruff, and we're still speaking about the Kai Light case, and that's court cause number 21-1-00012-9.

In attendance for this Zoom conference call are defense attorneys Mr. Vincent Hooks and Ms. Liza Parisky who represent the defendant in this matter. Along with prosecuting attorneys Ms. Lauren Burke and Mr. Alex Muir.

Now, Dr. Harruff, do you understand that we're recording this interview, and do I have your permission to record?

DR. HARRUFF: Yes.

MR. FRIAS: Okay. Mr. Hooks, do you understand that we're recording this interview, and do I have your permission to record?

MR. HOOKS: Yes, and yes.

MR. FRIAS: Okay. Ms. Parisky, do you understand that we're recording this interview, and do we have your permission to record?

MS. PARISKY: Yes, you do.

MR. FRIAS: Okay. Ms. Burke, do you understand that we're recording this interview, and do I have your permission to record?

MS. BURKE: Yes, I understand and yes, you have permission.

MR. FRIAS: Okay. Mr. Muir, do you understand that we're recording this interview, and do I have your permission to record?

MR. MUIR: I do, and you have permission to record my voice.

MR. FRIAS: Okay. With that, Dr. Harruff, I'm going to turn it over to Mr. Hooks for the questions, and I'm going to mute myself.

DR. HARRUFF: Okay. Can I ask a question?

MR. HOOKS: Sure.

DR. HARRUFF: So when did we have interviews before?

MR. HOOKS: Uh, I will be happy to pull that up for you. Uh, it looks like this -- we did two interviews; we did one interview on April 28, 2023, and I believe we did another one --

DR. HARRUFF: Oh, 2023.

MR. HOOKS: -- that's right. Yeah.

DR. HARRUFF: Oh. More than a year ago. Okay.

MR. HOOKS: Yeah, that was the second interview. And then we did the first one I want to say a couple months before that. I want to say February of 2023.

DR. HARRUFF: Oh. Okay. That explains why I don't remember.

MR. HOOKS: Got it. Okay.

DR. HARRUFF: Was -- was I -- ah, 2023. I was still employed then, right?

MR. HOOKS: That's correct, we -- you -- you were kind enough to give us stickers for the KCME when we arrived.

DR. HARRUFF: Oh. Okay. It was actually in the office.

MR. HOOKS: Yes.

DR. HARRUFF: Okay. This is the first remote or virtual interview.

MR. HOOKS: Yes. That's correct.

DR. HARRUFF: Okay. Well, that explains a lot of the things that, you know, before and after retirement sort of a transition there. All right. Sorry to interrupt. Go ahead.

MR. HOOKS: No, you actually -- you kicked it off kind of where I wanted to start, which is, can you, I guess, tell us in what capacity you are now working? 'Cause I --

I thought I had understood that you'd retired, but I want to sort of understand professionally where you are at right now.

DR. HARRUFF: I'm retired.

MR. HOOKS: Okay. What are you doing now in retirement? What are you working?

DR. HARRUFF: Ah, yesterday, I trimmed roses. Before that, I cut down a rhododendron. This morning, I reviewed the journal articles for the Referee (phonetic) -- it's odds and ends. Different things. So, no specific one thing. Sometimes I give lectures to people. Anyway. What do you want me to do?

MR. HOOKS: Are you working as a consultant in retirement?

DR. HARRUFF: No.

MR. HOOKS: Okay. So what is, I guess, in this case, what is the reason that you were reviewing materials from the King County Prosecuting Attorney's Office?

DR. HARRUFF: On request of the King County Prosecuting Attorney's Office.

MR. HOOKS: Okay. Are they -- did they pay you for that additional work here?

DR. HARRUFF: If I bill them, they will pay.

MR. HOOKS: Okay. And are you intending to bill them in this case?

DR. HARRUFF: I don't know. It's -- you know, I try to use that as a way to regulate my time. Because generally, I don't like to give away my time so generously.

MR. HOOKS: Understood.

DR. HARRUFF: So, you know, they have agreed -- I'm not too diligent about billing, but when I do extra work and stuff, and have defense interviews and things, you know, then it becomes more of a burden than a joy.

MR. HOOKS: Okay. And I will try to make sure this is as joyful as it can be. What materials did you review for this most -- I guess -- recent interaction with the King County Prosecuting Attorney's Office for this case?

DR. HARRUFF: They were asking me if there was a possibility of getting any CT scans that would help to find the injury path -- the gunshot wound path. So I do have some relationship with our review -- medical center radiology; I'm actually on the faculty of the radiology department. Although, I don't do much. It's just more a courtesy appointment. So I was able to access the radiology files. And construct some images that could be very useful in helping explain the wound track.

MR. HOOKS: Okay. And so can you, I guess break down for me what exactly a sort of wound track is?

DR. HARRUFF: Well, a wound track, specifically through the body is the path of the bullet from entrance

to, in this case, exit wound.

MR. HOOKS: Okay. And there's a phrase that gets used -- trajectory. It seems kind of common sense, but I don't want to make any assumptions; what exactly is a trajectory?

DR. HARRUFF: Well, trajectory is a general term meaning a flightpath or a direction that an object flies -- and you know, in this context a bullet. But I like to use the word path because that may be same thing, but it is -- specifies it's through the body. So a trajectory could be interpreted as, you know, through the real world. Independent of the body. And the body is only there as it, you know, intercepts that trajectory outside the body. So distinguishing trajectory outside the body, from a trajectory inside the body, I'll just say the wound path through the body.

MR. HOOKS: Understood. And what is the significance of understanding a wound path in a particular case?

DR. HARRUFF: Well, it depends on what the questions are. In this case, it may be relevant to the likelihood of this being a self-inflicted wound versus an other inflicted wound.

MR. HOOKS: How so?

DR. HARRUFF: Well, that a self-inflicted wound is a suicide and firearms are frequent cause of a suicide. So there are generally very common wound paths. And so the

question would be does this wound path match a typical wound path? Or is this wound path different or atypical from the, you know, the general -- within you know, the you know, 90 percent margin.

MR. HOOKS: Mm-hmm. Let's talk about that. When you were talking about suicides and typical wound path, what do you mean when you say there -- an atypical wound path.

DR. HARRUFF: Well, I guess that'd best be framed in in terms of probabilities. So typical would be the probability of a wound path falling into various categories of direction -- entrance, exit, so forth. And then typical -- atypical -- or not typical -- would be outside of that range. So if you take, you know, a common measure of probability is, you know, the P-value or the -- you know, the 10 percent or 5 percent error margin of probability. So you're familiar with the bell-shaped curve, right? So if we group all of the wound paths into, you know, a bell-shaped curve, there's going to be a distribution. Some will lay within 95 percent or 90 percent of that bell-shaped curve. Others do not.

MR. HOOKS: Okay. So, unpacking that a little bit more, and that would -- I think, require a -- quite a bit of data to be able to try to plot that and to look at that. And so I'm curious, in this particular case, what data did -- would you have reviewed to, I guess, be prepared to

(Inaudible) some analysis here?

DR. HARRUFF: Well, I have close to, you know, half a century of personal experience. So I can draw on that personal experience to give some estimates of what probabilities are.

MR. HOOKS: Okay. With respect to data beyond your personal experience, did you review any data from other medical examiners office in other states?

DR. HARRUFF: No.

MR. HOOKS: Okay. Did you review any data on one trajectories or wound paths on it -- from any national databases?

DR. HARRUFF: Uh, there's no national databases that have that information.

MR. HOOKS: Okay.

DR. HARRUFF: There was a publication some long time ago -- I don't think I have access to it, but basically having, you know, an enumeration of entrance wounds. And just to answer your question, in that enumeration, an entrance wound at the top of the head was in the category of rare. But did occur.

MR. HOOKS: Let me clarify; when you say the entrance wound at the top of the head category were rare, meaning what? What does rare mean in that instance?

DR. HARRUFF: Well, that would be in that category --

certainly less than 10 percent. Probably even less than 5 percent. It means less than one out of 20 entrance wounds in a suicide.

MR. HOOKS: Okay. So, if we're dealing -- so there's one study or one paper that you are aware of, where they said that was rare to see a suicide that at the top of the head? Is that right?

DR. HARRUFF: Yeah.

MR. HOOKS: Okay. And so understanding you were referencing probabilities, and talking about the bell-shaped curve and the Gaussian distribution, which I understand generally. I wanted just to clarify -- here, you're drawing more on your sort of personal experience and when you've seen entrance wounds and exit wounds, how frequently you've seen. Is that right?

DR. HARRUFF: Yes. Old references are maybe of limited value because with the proliferation of firearms, firearm suicides have been much much much much much more common. So I -- my personal experience probably has a greater validity than some old study.

MR. HOOKS: Okay. So with that being said, I want to ask, you know sir, generally speaking, in this case, what -- if anything, you know, did you come to understand about the wound track in this case?

DR. HARRUFF: Well. Okay. So you are aware of the --

there's autopsy. Right? As conducted by Dr. Thiersch. And I countersigned it. Indicating that I was, in general, agreeing with his observations and conclusions. And then you're probably also aware that I produced a series of images of CT scans that were taken before death at Harborview Hospital. Right?

MR. HOOKS: We have CT scans; I don't think we know who produced them. And if you recently produced them, we most certainly don't have those.

DR. HARRUFF: Should have had 'em.

MR. HOOKS: Did you make them recently?

DR. HARRUFF: Oh, this has been at least a month ago.

MR. HOOKS: Then we don't have those if you recently made them -- I don't believe. If I'm mistaken, Alex, I will double-check. I know we have CT scans we've received previously. I just want to make sure we're on the same page.

DR. HARRUFF: You have CT scans from where?

MR. HOOKS: I have to double-check. Hang on. Let's see. Okay. They are the ones we got; I'm getting confirmation. And these are the ones we've -- we've reviewed in this case, so.

DR. HARRUFF: Okay. Is there a 3D reconstruction?

MR. HOOKS: Yeah.

DR. HARRUFF: CT Scans? I can't imagine you could get

them anywhere besides me.

MR. HOOKS: Okay. And so --

DR. HARRUFF: So.

MR. HOOKS: -- you review -- yeah, go --

DR. HARRUFF: (Inaudible).

MR. HOOKS: -- ahead; keep going.

DR. HARRUFF: -- previously the wound track was identified as the same as the CT scans demonstrate. The CT scans show it in a better detail, in which, you know, actually angles could be calculated.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: In the standard anatomic position of the CT scan or the anatomic standard -- (Inaudible) standard anatomic position. Now, of course, we've probably discussed that the head is quite dynamic and can move around a lot. So that the angle of the wound through the head from the CT scan could be calculated quite accurately and much better than the autopsy report, so CT scans do show a higher degree of, um, accuracy. The comment in the autopsy report was very general. Now with the CT scans that angle from up to down, or from superior to inferior, could be calculated with a higher degree of accuracy.

MR. HOOKS: I -- I apologize, Dr. Harruff, give me just one moment. There's apparently a medical emergency that somebody's --

DR. HARRUFF: Oh, no --

MR. HOOKS: -- messaging me about, and apparently you're not here, so I'm the one that they have to deal with. Back. Okay.

DR. HARRUFF: Is everything okay?

MR. HOOKS: They're going to figure it out. They're going to talk to somebody who actually knows what they are doing medically speaking, so I apologize for that.

DR. HARRUFF: Ah.

MR. HOOKS: So I apologize. With respect to the CT scan, I guess I wanted to ask, because you can see more of the angles with more specific detail, you know, what is the benefit of being able to see that?

DR. HARRUFF: Well, being able to see that -- well, being able to see that means that if somebody is going to show it to a group of people that are going to have to make a decision, it more clearly represents the wound path then does the autopsy report or diagrams thereof.

MR. HOOKS: Okay. And so what --

DR. HARRUFF: Uh, you -- you don't have to be a radiology expert or anything. It's just like --

MR. HOOKS: Mm-hmm.

DR. HARRUFF: -- there it is. You can see it with your own eyes. Which is always helpful in my mind, if you are presenting to someone who -- what do they call it? The

-- the jury?

MR. HOOKS: And the trier of -- ah, yeah.

DR. HARRUFF: Or the -- the triers of fact. Okay? So to me -- in this world, it's best to have the most accurate representation to help those people out. Making their decision. (Inaudible) making a decision.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: You know, how the -- how it was certified originally. Nothing has changed with that regard. And the basis for that decision or opinion is the same.

MR. HOOKS: Okay. So what -- and y -- so then for you, what are you able to, I guess, glean from understanding both the wound track and I guess the location of -- of the wound. And how -- I guess, would you -- so I guess a couple questions. There's -- the first is, how would you describe, from a measurement perspective -- sort of the entry location of the wound, and then, what do you have to say about the wound track?

DR. HARRUFF: Well, so are you looking at the CT scans?

MR. HOOKS: So, I don't have them in front of me.

DR. HARRUFF: (Inaudible) you know, sort of like we always say it's best to see for oneself, right?

MR. HOOKS: Yep. And if you can -- I mean, if you

have them in front of you and you can screen-share with us, that would be great, so that way we have -- I don't know if you are able to to do that.

DR. HARRUFF: Oh, I can give it a shot.

MR. HOOKS: Appreciate it.

DR. HARRUFF: Hold on a second. (Inaudible) fool around a little bit more than -- uh, where's -- share screen. Okay. I'm going to start sharing just the screen itself. And what do you see -- just see this. And then -- do you see the --

MR. HOOKS: Yes.

DR. HARRUFF: -- images?

MR. HOOKS: Yes. I see these. Yeah, thank you for showing (Inaudible).

DR. HARRUFF: Okay. Sure. So, you see the -- the skull.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: This is the PDF version. And can you see my pointer?

MR. HOOKS: Yes.

DR. HARRUFF: Okay. So there's the entrance wound. It's on the right frontal scalp. And next shows from the top of the head. It's -- this is the frontal part of the skull. It's above the forehead, within the hairline. So it's anterior -- or in front of the very tip top of the

head. And this is the posterior -- where I'm pointing to now -- the exit wound.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: And then tilting this a little bit, shows again the entrance wound, and the exit wound. Both on the right side of the skull. The entrance wound close to midline on the right. And the exit wound being further from midline, also on the right. So the direction is left to right. Because it's going more rightward, right? Correct? Okay.

And then again, you can see the exit wound on the back of the skull. This is the occipital skull. Where there's a comminuted or multiply fractured skull with the exit wound that I'm circling right now. So again, looking at it from the very side we can see the angle, and I put a protractor on that, and the best I can do is about 38 degree downward off of horizontal. So to me, that just shows more clearly than the autopsy itself would show. For the purposes of demonstrating the wound path to the triers of fact.

MR. HOOKS: All right. I appreciate --

DR. HARRUFF: So.

MR. HOOKS: -- you walking us through that, Dr. Harruff. That saves me a lot of questions, given your -- your detail. One that I want to make sure I understand is,

so, you said 38 degrees from horizontal, so this is -- horizontal is zero, and then it sort of counts down one, two, three -- is that right?

DR. HARRUFF: Yeah, it'd be like -38 degrees.

MR. HOOKS: Got it. Okay. So minus --

DR. HARRUFF: Yeah. Somewhere between 30 and 40° -- best I can do with my little protractor. You could do it yourself. You might get a different number, but just more than 30 degrees.

MR. HOOKS: Okay. Understood. So with respect then, to sort of it being, you know, 30 -- 30 degrees, you know, what -- what significance does that have for you, as you're looking at this case -- if any?

DR. HARRUFF: Ah, well again, it doesn't change the final opinion. But the more granular approach to it is that this is an atypical or an infrequent path -- wound path -- for a suicide -- for a self-inflicted wound.

MR. HOOKS: Okay.

DR. HARRUFF: Meaning again, certainly less than 10 percent, based on my personal experience. Most are, you know -- most of them are going to be on the side of the head, through the mouth, forehead, left to right. But very few are going to be near the top of the head, point downward.

MR. HOOKS: And I appreciate you sort of explaining

where that -- so make sure that I get what you're saying. You know, so given the number of suicides that you've had in your career, you would say fewer than 10 percent would feature this type of trajectory, is that right?

DR. HARRUFF: Less than 10 percent. Yes.

MR. HOOKS: Yeah. Okay. So let me ask just generally then, you know, is there a sort of quantitative database that KCME would log about variables for lack of a better phrase around determining of ah, you know, circumstances of death?

DR. HARRUFF: No.

MR. HOOKS: Okay. So.

DR. HARRUFF: Just very very general, you know. You got the house --

MR. HOOKS: Mm-hmm.

DR. HARRUFF: -- you know, the location, type of residence or type of building. Inside, outside, but nothing very specific. No, that's beyond general data collection; that type of thing requires actually when I was working, you know, ah -- what do we call it -- natural language processing to suck that type of information out of narrative reports. Most of the information you're looking for is buried in narrative reports. So to get that information out, either has to use like, uh, manual abstractors, which nobody has money for. Or machine

learning -- natural language processing. Which I was working on but no longer, now that I'm retired. Now if you want to pay me to do that, and get an IRB going, I'd be happy to.

MR. HOOKS: So, I --

DR. HARRUFF: Yeah.

MR. HOOKS: -- I think these next few questions will then be pretty quick, 'cause I think you've already confirmed but I want to make sure I'm not making any assumptions. So it's -- so at KCME, there wasn't the ability to say, you know, oh, there was this percentage of suicides that have a trajectory going from right to left. Or this many going from left to right. Is that right?

DR. HARRUFF: Unfortunately, no. Those are basically research questions. Very good questions. But research. So you have to basically rely on a person that has half a century of experience -- whether you want to believe that person or not -- that's pretty much is what you're stuck with.

MR. HOOKS: Okay. And then, you know, similarly you know, there's not necessarily again, that big picture data that would say, oh, there was this much blood volume in this particular suicide case, or this much volume in this case, where there was this circumstance.

DR. HARRUFF: No. This would not be useful and in any

case, it's not available.

MR. HOOKS: Okay. Okay. So then specifically, with regard to some of your personal experience, and I will say just for reference, I'm going off of a summary of an email that we received from Ms. Burke about a little over a month ago, where she indicated you guys had a discussion and that in your experience dealing with suicide cases, you would expect to see large quantities of blood on the hand that held the gun. Can you tell me a little more about what that means? You know? And kind of what you would expect.

DR. HARRUFF: Well, I don't know exactly what was in the email.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: And I'm not a blood spatter expert. But I do have some understanding of the general concepts. And so, the expectation of having a large quantity of blood on a hand holding a gun would be quite variable. And I don't think anybody can say the expectation. The expectation was that a hand -- near an entrance or exit wound -- would have blood spatter on it, or them, meaning both hands. Depending on how they are presented. Any object around the area of an entrance or exit wound, would have blood spatter. And you certainly know what blood spatter is; I don't have to, you know, define that further, probably. Probably more specifically, the blood spatter pattern

didn't help me understand who was holding the gun. It certainly didn't, you know, it just -- that doesn't -- I'm sure a blood spatter expert -- depending on who you ask or how you ask them, may say one thing or another, but for me, it didn't help me assess whether this is a self-inflicted wound, or an other inflicted one. I was basically going on the, you know, the atypical wound path, and if I understand it correctly, there was no gun at the scene. Which is -- introduces another probability into the consideration.

MR. HOOKS: With res -- I appreciate how you put talking about the blood spatter not helping you one way or the other, but I want to just, I guess, first ask, you know, what generally speaking did you glean from the blood spatter report that, you know, you were considering?

DR. HARRUFF: I don't have that one in front of me, and I'm not gonna bring it up 'cause like I said, it didn't help me much.

MR. HOOKS: (Inaudible).

DR. HARRUFF: There was one on the sleeve. And then area on a -- I think a shoulder of a jacket.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: And so I -- I could think of a number of ways in which that those two depositions could be produced. With or without a gun.

MR. HOOKS: Okay.

DR. HARRUFF: I mean, with or without the -- the decedent holding the gun.

MR. HOOKS: And when you say, you know, you're thinking about that alongside, you know, so the trajectory as being another piece of data, throughout your work on this case, did you do any, you know, three-dimensional software modeling about, you know, what might've happened?

DR. HARRUFF: No.

MR. HOOKS: Okay. Did your office ever consult with individuals about you know, trying to potentially model potential outcomes of what may have happened?

DR. HARRUFF: No.

MR. HOOKS: Okay.

DR. HARRUFF: Consultants cost money, you know?

MR. HOOKS: Yeah. And I -- you answered a lot of my blood spatter questions. And so it sounds like when it comes to blood spatter, that's -- fair to say, that you're reviewing the report, but you are not holding yourself as a blood spatter expert. That's something that's -- for somebody else?

DR. HARRUFF: Yes. You're -- I'm sure you can find somebody that can help you with that.

MR. HOOKS: Okay.

DR. HARRUFF: I mean, consultants like that you know, you just pay for their opinion, right?

MR. HOOKS: Mm-hmm. With respect to, you know, the ultimately, I think work here that was done, with respect to establishing a cause of death and then a manner of death, and I'm curious here, if you're -- the question you were asked. And you said at the beginning, that you know, what matters is the question you are asked. If you were asked here to assess this information as to determining a cause of death, or about determining a manner of death.

DR. HARRUFF: Well, the cause of death is easy. It's a gunshot wound to the head. The manner of death is more of an opinion, based on the -- what's known about the case.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: So we know that there is a wound through the head. That would be classified as an atypical path. Less than 10 percent of suicides. And we also know, if it is still true, that there was no gun present at the scene. I'm not going to try to think of many reasons why the gun was not there, but we're just working with facts and basically probabilities. So if you take -- in my experience -- suicides always have a gun at the scene. And if you say, what percent, I say 99 percent. So you combine that with an atypical wound of 10 percent, and you've got a, you know, 1 percent times 10 percent, which takes it down to less than 1 percent. Of this being a homic -- ah, being a suicide.

The alternative explanation if it's not a suicide, is a homicide. So it's basically an opinion. Based on the probabilities of those two observations. And if you want to, you can explain those way somehow. But I just took those observations as they are, and like I just showed you, you can assign probabilities to them and base your opinion -- more or less -- in a probabilistic fashion.

MR. HOOKS: To clarify some of what you just said, that the numbers where you were getting, you know, the 99 percent. About that. That's again -- that's in your -- in your experience of situations that you've understood to be a suicide, is that correct?

DR. HARRUFF: Yes. Yes. What, over a hundred suicides -- firearms suicides a year? I'm sure it's far more than that. But yeah.

MR. HOOKS: And to clarify, have you at any point ever spoken with a mathematician or a statistician about what you just said?

DR. HARRUFF: I don't think it's really necessary to calculate simple probabilities; do you have a problem with that?

MR. HOOKS: I'm just --

DR. HARRUFF: I thought you were -- said you were familiar with probability and Gaussian distribution.

MR. HOOKS: -- I am, and that's why I just want to

know sort of what --

DR. HARRUFF: You take two independent events. Gun at the scene, or not gun at a scene. Wound path typical or non-typical. You've got two independent events. Right? So probabilistically, one can merely multiply those two probabilities together to give you a final outcome probability. I'm not a mathematician, but I do have quite a bit of experience with data analysis and so forth. And simple ideas of probabilities; I've written papers on Bayesian-type of probabilities.

MR. HOOKS: Okay. Just simple final questions and then I'm just going to ask my cocounsel if he has a few questions. You know, we've used this term suicide quite a bit throughout this process.

DR. HARRUFF: Well, let's just change it to self-inflicted, then.

MR. HOOKS: And that's what I was going to ask, is is that the --

DR. HARRUFF: Yeah, but when you're talking about manner of death then the term is suicide.

MR. HOOKS: Okay.

DR. HARRUFF: But if we're talking about who is holding the gun, we're talking about self-inflicted.

MR. HOOKS: That was exact --

DR. HARRUFF: Versus other-inflicted. Yeah.

MR. HOOKS: -- and so the scenario that you were just kind of working through -- did that refer to suicide? Or is that talking about self-inflicted?

DR. HARRUFF: Well, we deal in terms of manners. We classify things -- certify things in terms of manner.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: So suicide or homicide is basically the manner that is derived from whether we believe it is self-inflicted or other inflicted.

MR. HOOKS: Got it. Okay. And --

DR. HARRUFF: So that's -- yeah.

MR. HOOKS: Yeah.

DR. HARRUFF: And so, there's to be very few in which you'd use the term 'undetermined', where there is insufficient information to classify a death into one of the other manners.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: For example, finding skeletal remains out in the woods with a gunshot wound through the head. And there is probably no gun present, but there is evidence that the body has been moved from its original location by an animal. And so, you know, the presence or absence of gun is explained away by the movement of the body by animals. So that would be undetermined. Where you got the cause of death -- probable cause of death -- but there's

not enough information to decide between it's self-inflicted or other inflicted.

MR. HOOKS: Mm-hmm.

DR. HARRUFF: So things like that. Where you can't calculate or conceive of probabilities -- there's too many parameters. This one, the parameters seemed fairly limited. And again, I won't argue with about -- oh, what if, what if, what if. I mean, that's -- that's your job, right? And I'll give you that freedom. To do what ifs. I'm just working with mere simple probabilities.

MR. HOOKS: Okay. And I just want to clarify again as we are, you know, talking about the -- sort of the 99 percent and sort of the way you formulated that. You know, I know that there is NAME guide to manner of death; is that that formula contained in the NAME guide that you're aware of?

DR. HARRUFF: Ah, well, there's -- how the NAME guide is -- you're talking about the National Association of Medical Examiners. There is different approaches to that. One would be basically having a group of pathologists, like the -- ah, they send out a scenario to, you know, a hundred pathologists and say, how many agree with this being a suicide? How many agree with it being a homicide? How many agreeing with it? So that's not really -- that's not very sound science, it's just basically selecting opinions.

So that's how those NAME guidelines are built. Is like, would most pathologists call this a suicide or a homicide? All right? So it's -- basically you're not like finding fault with anybody calling anything. Because it's not data or evidence-derived in any case. It's just merely opinions. And so this is my opinion and Dr. Thiersch's opinion.

MR. HOOKS: Okay. I don't think I have any other questions. Liza or -- do you have any questions?

MS. PARISKY: No, none at this time; thank you.

MR. HOOKS: Okay. Well then, I think we are good to wrap this interview up. Ah, let me --

DR. HARRUFF: (Inaudible) hope it was helpful.

MR. HOOKS: -- hang on just a moment, Enrique -- can you go ahead and just ask the closeout questions real quick before we hang up?

MR. FRIAS: Yeah. So, Doctor, this is Enrique. Just in case -- if we had to contact you again to ask you any follow-up, would it be okay to contact you for any follow-up questions?

DR. HARRUFF: Yes. Please do it through the prosecuting attorney's office.

MR. FRIAS: Understood. And are all the answers that you've given true and correct to the best of your ability?

DR. HARRUFF: Yes.

MR. FRIAS: Okay. I'll just say the time here and then we'll stop the recorders and end the call. So the time is 11:51 a.m. and this concludes the interview. Thank you so much Doctor. We appreciate it.

UNIDENTIFIED SPEAKER: Recording stopped.

DR. HARRUFF: Okay.

UNIDENTIFIED SPEAKER: Thank you everybody.

(END OF RECORDING)

C E R T I F I C A T E

I, the undersigned transcriptionist, do hereby certify:

That the foregoing Audio Transcription of Taped Proceedings was transcribed under my direction; that the transcript is a full, true and complete transcript of the proceedings, including all questions, objections, motions and exceptions; except as indicated as "inaudible" herein, to the best of my ability;

That I am not a relative, employee, attorney or counsel of any party to this action or relative or employee of any such attorney or counsel, and that I am not financially interested in the said action or the outcome thereof;

That I am herewith securely sealing and sending this transcript to the King County Department of Public Defense, The Defender Association Division for filing with the court.

That I have certified this transcript this 2nd Day of July, 2024.

/s/ Margaret Stewart
Margaret Stewart, residing at
Tacoma, Washington.

ATTACHMENT E
Dr. Jeff Kukucka's Report

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TEL: 206-447-8700
FAX: 206-447-2349

AFFIDAVIT OF DR. JEFF KUKUCKA

I, Dr. Jeff Kukucka, hereby depose and state as follows:

Professional Background and Qualifications

1. I hold a Bachelor of Arts degree (B.A.) *summa cum laude* in Psychology from Loyola College in Maryland (2009), a Master of Arts degree (M.A.) in Forensic Psychology from the John Jay College of Criminal Justice (2012), and a Doctor of Philosophy degree (Ph.D.) in Psychology from the City University of New York (CUNY) Graduate Center (2014).

2. I am currently a tenured Professor of Psychology at Towson University in Towson, Maryland, where I have been employed since August 2014.

3. Broadly, my research examines the psychological causes of erroneous forensic science and medicolegal judgments, with a particular interest in how subconscious cognitive biases can weaken the reliability of said judgments, including ways to protect against said biases.

4. I serve as Vice Chair of the Human Factors Task Group (HFTG) of the Organization of Scientific Area Committees (OSAC) for Forensic Science—a federal organization established under NIST (National Institute of Standards and Technology) to develop and promote best practice standards for all forensic science disciplines. The HFTG's role is to ensure that forensic science standards adequately protect against known sources of bias and human error. I was appointed to this group in 2019, and I was appointed Vice Chair in 2022.

5. I also serve as case manager for the Maryland Office of the Attorney General's ongoing audit of the Maryland Office of the Chief Medical Examiner. In this role, I am working with a team of forensic pathologists, psychologists, and attorneys to develop and execute a procedure to assess the possibility of racial and/or pro-police bias in manner of death determinations pertaining to deaths in police custody between 2003 and 2019 and, informed by these data, offer recommendations on how to improve death investigation practices.

6. Below, I list selected publications that are most relevant to the issues in this case. A complete list of peer-reviewed publications, conference papers, awards, and other credentials can be found in the attached *curriculum vitae* (Appendix A).

Kukucka, J., & Findley, K. A. (2023). Cognitive bias in medicolegal judgments. In K. A. Findley, C. Rossant, K. Sasakura, L. Schneps, W. Squier, & K. Wester (Eds.), *Shaken Baby Syndrome: Investigating the Abusive Head Trauma Controversy* (pp. 205-217). Cambridge University Press.

Kukucka, J., & Dror, I. E. (2023). Human factors in forensic science: Psychological causes of bias and error. In D. DeMatteo & K. C. Scherr (Eds.), *The Oxford Handbook of Psychology and Law* (pp. 621-642). Oxford University Press.

Kukucka, J. (2023). Growing pains of addressing cognitive bias in legal contexts: A commentary on Berryessa et al. (2022). *Legal and Criminological Psychology*, *28*, 213-216.

Quigley-McBride, A., Dror, I. E., Roy, T., Garrett, B. L., & **Kukucka, J.** (2022). A practical tool for information management in forensic decisions: Using Linear Sequential Unmasking-Expanded (LSU-E) in casework. *Forensic Science International: Synergy*, *4*, 100216.

Dror, I. E., & **Kukucka, J.** (2021). Linear sequential unmasking-expanded (LSU-E): A general approach for improving decision making as well as minimizing noise and bias. *Forensic Science International: Synergy*, *3*, 100161.

Dror, I. E., Melinek, J., Arden, J. L., **Kukucka, J.**, Hawkins, S., Carter, J., & Atherton, D. (2021). Cognitive bias in forensic pathology decisions. *Journal of Forensic Sciences*, *66*, 1751-1757.

Dror, I. E., **Kukucka, J.**, Kassin, S. M., & Zapf, P. A. (2018). No one is immune to contextual bias--Not even forensic pathologists. *Journal of Applied Research in Memory and Cognition*, *7*, 316-317.

Kukucka, J., Kassin. S. M., Zapf, P. A., & Dror, I. E. (2017). Cognitive bias and blindness: A global survey of forensic science examiners. *Journal of Applied Research in Memory and Cognition*, *6*, 452-459.

Kukucka, J. (2014). The journey or the destination? Disentangling process and outcome in forensic identification. *Forensic Science Policy & Management*, 5, 112-114.

Kassin, S. M., Dror, I. E., & **Kukucka, J.** (2013). The forensic confirmation bias: Problems, perspectives, and proposed solutions. *Journal of Applied Research in Memory and Cognition*, *2*, 42-52.

7. I have previously submitted affidavits on cognitive bias and related issues in ten U.S. states (AZ, GA, IL, KY, MD, MA, MI, MS, OH, OR), the District of Columbia, and the United Kingdom. I have previously been tendered as an expert witness in Georgia, Illinois, Massachusetts, and Ohio. To my knowledge, I have never been denied qualification.

8. My *curriculum vitae*, attached as Appendix A, is an accurate representation of my educational background and professional accomplishments.

Involvement in this Case

9. I was asked by the defense to provide the Court with general information about factors that are known to weaken the reliability of medicolegal judgments, including especially the potential for cognitive bias and error in manner of death determinations, and to offer my opinion as to whether there is reason to doubt the reliability of Dr. Norman Thiersch's determination that Taj Olivia Harrett-McDonald's death was a homicide.

10. To that end, I reviewed documents pertaining to Dr. Thiersch's manner determination in this case, including various documents from the King County Medical Examiner's Office (KCMEO; i.e., the investigator's report, case notes, laboratory reports, donor screening form, autopsy report, and histology/autopsy worksheets) and transcripts of interviews with Dr. Thiersch

(from 8/2/23) and Dr. Richard Harruff (from 11/18/22 and 4/28/23). I did not review any other documents.

Summary of Opinion

11. Cognitive bias is a natural psychological phenomenon whereby people with different mindsets unwittingly interpret the same information in markedly different ways, especially if that information is ambiguous. It is now well-established that cognitive bias can undermine forensic expert decision-making, such that extraneous factors (e.g., knowledge of irrelevant contextual information) can lead experts to conflicting judgments of the same evidence—at least one of which, by definition, must be incorrect. Accordingly, numerous government organizations have issued best practice recommendations that explicitly require forensic experts to avoid task-irrelevant information in their decision-making.

12. More recently, it has become clear that medicolegal judgments—which are highly subjective and variable between experts even when made in a vacuum—are likewise susceptible to cognitive bias, such that extraneous non-medical information (e.g., about race, socioeconomic status, marital status, or criminal accusations) can lead medical experts to differing—and erroneous—judgments of the very same injury or death. In response to the latter, medical examiners[1] have noted that manner of death determinations are "not scientific" and not motivated by "correctness," and as such, are often "misuse[d]... by the courts."[2]

13. In this case, Dr. Thiersch concluded that Ms. Harrett-McDonald's death was a homicide. However, as explained below, his *a priori* knowledge of extraneous investigative facts and theories raises significant concern that cognitive bias could have tainted his autopsy and his resulting manner of death opinion. Moreover, Dr. Thiersch freely admits that his opinion was wholly contingent on investigative theories and not based purely on an independent review of medical findings within the purview of his expertise. For that reason, Dr. Thiersch's manner determination does not provide independent evidence of Mr. Light's guilt and it should not be treated as such. The extant research strongly suggests that if another qualified expert were to review the same medical findings absent these biasing influences, they may well reach a different conclusion regarding Ms. Harrett-McDonald's death.

Cognitive Bias is a Natural Feature of Human Psychology that Leads People to Interpret the Same Information in Different Ways

14. For over a century, psychologists have understood that *cognitive bias* influences human judgment and decision-making, such that people often interpret the same information in different ways depending on their individual mindsets and/or the context in which they

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[1] In this document, I use the terms "medical examiner" and "forensic pathologist" interchangeably to refer to medical professionals with the legal authority to render manner of death determinations.

[2] Brian L. Peterson et al., *Commentary on Dror et al. 'Cognitive Bias in Forensic Pathology Decisions'*, 66 J. FORENSIC SCI 2541 (2021).

encounter the information.[3] Analogous to a reflex, cognitive bias is a natural byproduct of how the brain processes information; as such, it operates outside of conscious awareness and should not be confused with intentional prejudice, carelessness, or malfeasance.[4]

15. Research-based examples of cognitive bias are abundant. For example, one study[5] found that participants judged the same pairs of faces as more similar if led to believe that the two people were genetically related (e.g., father and son) rather than unrelated. In fact, participants' *beliefs* about whether the two people were related had a stronger effect on their judgments than whether the two people were *actually* related. In another study,[6] people automatically perceived an ambiguous drawing (which could be perceived as either a horse or a sea lion) in line with whichever interpretation they believed would lead to a positive outcome (i.e., drinking a glass of fresh-squeezed orange juice) rather than a negative outcome (i.e., drinking a "chunky, green, foul-smelling" beverage).

16. Cognitive bias is generally beneficial insofar as it allows humans to process information more efficiently and/or encourages adaptive behavior. For instance, studies have found that people perceive the same water bottle as less distant if they are thirsty rather than quenched (which is the brain's subtle way of motivating us to satisfy our thirst)[7] and judge the same incline as steeper if they are tired, elderly, or wearing a heavy backpack (which is our brain's way of dissuading us from climbing when we are already encumbered).[8] However, cognitive bias becomes problematic in situations where the goal is to determine objective truth. That is to say, if cognitive bias leads two individuals to different conclusions about the true state of affairs, then by definition, at least one of those judgments must be incorrect.

17. Importantly, cognitive bias is most apt to influence judgments that are subjective (i.e., judgments based on vague and/or idiosyncratic criteria rather than clear and standardized criteria) and judgments of ambiguous information (i.e., information that allows for more than one plausible interpretation).[9] In one study, for example, people who watched the same video of a child taking an academic test rated her intelligence as lower if led to believe that her family was of low socioeconomic status—but only if her true intelligence was ambiguous (i.e., she answered some questions correctly and others incorrectly).[10]

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[3] *See generally*, Daniel Kahneman et al., NOISE: A FLAW IN HUMAN JUDGMENT (2021).
[4] *See, e.g.*, Joshua Klayman & Young-won Ha, *Confirmation, Disconfirmation, and Information in Hypothesis Testing*, 94 PSYCHOL. REV. 211 (1987); Richard E. Nisbett & Timothy D. Wilson, *Telling More Than We Can Know: Verbal Reports on Mental Processes*, 84 PSYCHOL. REV. 231 (1977).
[5] Paola Bressan & Maria F. Dal Martello, *Talis Pater, Talis Filius: Perceived Resemblance and the Belief in Genetic Relatedness*, 13 PSYCHOL. SCI. 213 (2002).
[6] Emily Balcetis & David Dunning, *See What You Want to See: Motivational Influences on Visual Perception*, 91 J. PERS. SOC. PSYCHOL. 612 (2006).
[7] Emily Balcetis & David Dunning, *Wishful Seeing: More Desired Objects Are Seen as Closer*, 21 PSYCHOL. SCI. 147 (2010).
[8] Mukul Bhalla & Dennis R. Proffitt, *Visual-Motor Calibration in Geographical Slant Perception*, 25 J. EXP. PSYCHOL. HUM. PERCEP. & PERFORM. 1076 (1999).
[9] Ziva Kunda, *The Case for Motivated Reasoning*, 108 PSYCHOL. BULL. 480 (1990).
[10] John M. Darley & Paget H. Gross, *A Hypothesis-Confirming Bias in Labeling Effects*, 44 J. PERS. SOC. PSYCHOL. 20 (1983).

There is Now Ample Research Evidence that Cognitive Bias Can Distort Expert Judgments of Forensic Evidence

18. In their landmark 2009 report on the forensic sciences,[11] the National Academy of Sciences (NAS) likewise explained that "human judgment is subject to many different types of bias [which] are not the result of character flaws [and] cannot be willed away,"[12] adding that "the findings of forensic science experts are vulnerable to cognitive and contextual bias[es]"[13] that can "undercut the power of forensic science."[14] To address these concerns, the NAS noted that the forensic sciences "can benefit significantly from... the findings of cognitive psychology on the potential for bias and error in human observers."[15]

19. Similarly, in a seminal 2013 paper,[16] my colleagues and I explained that cognitive bias due to "an individual's pre-existing beliefs, expectations, motives, and situational context"[17] can "influence the collection, perception, and interpretation of evidence during the course of a criminal case,"[18] especially when "stimulus ambiguity, context-driven expectations, and motivations conspire to create fertile conditions for psychological contamination."[19]

20. Since that time, research on this topic has proliferated,[20] leaving no doubt that cognitive bias can lead forensic experts to interpret the same evidence in conflicting ways, thus increasing the risk of costly errors. In an early demonstration of this phenomenon, fingerprint experts unknowingly changed 17% of their own prior judgments of the same fingerprints after being given extraneous information that implied guilt or innocence (i.e., knowledge of a suspect's confession or alibi, which should have no bearing on visual comparisons of fingermarks).[21] In another study, DNA experts reached different conclusions about the same DNA mixture as a function of whether they knew that one of the potential contributors to that mixture had accepted a plea deal.[22] In still another, extraneous information about a decedent (e.g., their age and race) affected both the interpretation of toxicological test result (i.e., a test with a

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[11] National Research Council, STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD (2009). Available at https://www.ojp.gov/pdffiles1/nij/grants/228091.pdf
[12] *Id.*, at 122.
[13] *Id.*, at 8.
[14] *Id.*, at 16.
[15] *Id.*, at 8.
[16] Saul M. Kassin et al., *The Forensic Confirmation Bias: Problems, Perspectives, and Proposed Solutions*, 2 J. APPL. RES. MEM. COGN. 42 (2013). I characterize this paper as "seminal" because, per Google Scholar, it has been cited by other scholars 811 times—or approximately once every five days—since its publication in March 2013.
[17] *Id.*, at 45.
[18] *Id.*
[19] *Id.*, at 48.
[20] *See, e.g.*, Glinda S. Cooper & Vanessa Meterko, *Cognitive Bias Research in Forensic Science: A Systematic Review*, 295 FOR. SCI. INT'L 35 (2019); Jeff Kukucka & Itiel E. Dror, *Human Factors in Forensic Science: Psychological Causes of Bias and Error*, *in* THE OXFORD HANDBOOK OF PSYCHOLOGY AND LAW (David DeMatteo & Kyle C. Scherr eds., 2023).
[21] Itiel E. Dror & David Charlton, *Why Experts Make Errors*, 56 J. FORENSIC IDENT. 600 (2006).
[22] Itiel E. Dror & Greg Hampikian, *Subjectivity and Bias in Forensic DNA Mixture Interpretation*, 51 SCI. & JUSTICE 204 (2011).

mathematically correct answer) as well as which tests were performed in the first place.[23] These are just a few examples among many; the detrimental effects of cognitive bias have now been replicated across more than a dozen forensic science disciplines.[24]

21. As noted above,[25] cognitive bias is most apt to distort judgments of ambiguous information, which is true of forensic evidence as well. Various studies have demonstrated that cognitive bias had a stronger influence on experts' interpretations of "difficult" as opposed to "not difficult" fingerprint pairs,[26] distorted or incomplete as opposed to pristine bitemarks,[27] and inconclusive as opposed to conclusive polygraph records.[28]

22. Despite ample research evidence to the contrary, many forensic experts mistakenly believe that willpower, training, and/or experience grants immunity to cognitive bias.[29] Conversely, other research suggests that experts are sometimes *more* vulnerable to cognitive bias than non-experts insofar as experts develop "cognitive shortcuts" over time; these shortcuts allow them to process complex information more efficiently but can also limit their cognitive flexibility and cause them to overlook or ignore critical details.[30] For example, expert chess players are much better than novices at remembering the locations of chess pieces when the pieces are arranged on the board in plausible configurations, but experts are no better—or even worse—than novices when the pieces are arranged at random.[31] Moreover, in the only existing study to directly compare the biasability of forensic experts (i.e., experienced crime scene investigators) and novices (i.e., forensic science students),[32] cognitive bias had an equivalent effect on both groups' first impressions of—and behavior at—a mock crime scene, providing further evidence that experience does not beget immunity to bias.

23. Informed by this research, the National Commission on Forensic Science (NCFS)—a Federal Advisory Committee established by the Department of Justice (DOJ) "to enhance the practice and improve the reliability of forensic science"[33]—has urged practitioners to "rely solely on task-relevant information when performing forensic analyses" (i.e., information that is "necessary for drawing conclusions from the physical evidence designated for examination")

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[23] Hilary J. Hamnett & Itiel E. Dror, *The Effect of Contextual Information on Decision-Making in Forensic Toxicology*, 2 FORENSIC SCI. INT. SYNERGY 339 (2020).
[24] *See* Kukucka & Dror, *supra* note 20.
[25] See *supra*, Para. 17.
[26] Dror & Charlton, *supra* note 21.
[27] Nikola K. P. Osborne et al., *Does Contextual Information Bias Bitemark Comparisons?*, 54 SCI. & JUSTICE 267 (2014).
[28] Eitan Elaad et al., *The Effects of Prior Expectations and Outcome Knowledge on Polygraph Examiners' Decisions*, 7 J. BEHAV. DECIS. MAKING 279 (1994).
[29] *See, e.g.*, Jeff Kukucka et al., *Cognitive Bias and Blindness: A Global Survey of Forensic Science Examiners*, 6 J. APPL. RES. MEM. COGN. 452 (2017).
[30] *See, e.g.*, Thomas A. Busey & Itiel E. Dror, *Special Abilities and Vulnerabilities in Forensic Expertise*, *in* THE FINGERPRINT SOURCEBOOK (A. McRoberts ed., 2010); Itiel E. Dror, *The Paradox of Human Expertise: Why Experts Get It Wrong*, *in* THE PARADOXICAL BRAIN (Narinder Kapur ed., 2011).
[31] William G. Chase & Herbert A. Simon, *Perception in Chess*, 4 COGN. PSYCHOL. 55 (1973); Fernand Gobet & Herbert A. Simon, *Recall of Rapidly Presented Random Chess Positions Is a Function of Skill*, 3 PSYCHON. BULL. REV. 159 (1996).
[32] Claire A. J. van den Eeden et al., *The Forensic Confirmation Bias: A Comparison Between Experts and Novices*, 64 J. FORENSIC SCI. 120 (2019).
[33] U.S. Department of Justice, National Commission on Forensic Science, https://www.justice.gov/archives/ncfs

and to "draw conclusions solely from the physical evidence... and not from any other evidence in the case."[34] The NCFS also urged "forensic laboratories [to] take appropriate steps to avoid exposing analysts to task-irrelevant information" by following "standards and guidelines for forensic practice being developed by the Organization of Scientific Area Committees (OSAC)."[35] Accordingly, a growing number of forensic disciplines' best practice standards now explicitly forbid reliance on task-irrelevant contextual information, such as:

- "The analyst shall only consider information relevant to source and/or blood-letting injuries necessary for pattern interpretation... and not utilize task-irrelevant information."[36] (*bloodstain pattern analysis*)

- "To reduce potentially biasing effects, an examiner should not be exposed to task-irrelevant contextual information."[37] (*forensic photogrammetry*)

- [Investigators] shall remain as independent as possible from non-scene-related and potentially biasing case information."[38] (*crime scene investigation*)

- "Information that is task-irrelevant for friction ridge examination includes, but is not limited to the following... crime type; other evidence or investigative information, whether forensic or not; [etc.]."[39] (*friction ridge examination*)

Medicolegal Judgments Lack Corrective Feedback and Are Highly Subjective, Which Renders Them Especially Vulnerable to Bias and Error

24. Decisional contexts can be conceptualized as either *closed-loop* or *open-loop* systems.[40] A closed-loop system is one in which the decision-maker receives feedback and adjusts their behavior accordingly until the desired outcome is achieved—similar to how a thermostat gauges the ambient temperature in an environment and automatically shuts off once the desired temperature is reached. In contrast, an open-loop system is one in which the decision-maker does not receive feedback but rather bases their behavior on pre-determined rules that may or may not achieve the desired outcome—such as a clothes dryer that shuts off after a set amount of time regardless of whether the clothing is actually dry.

25. For living patients, medical diagnosis generally functions as a closed-loop system in that a doctor prescribes a course of treatment, and then the effectiveness of that treatment provides

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[34] National Commission on Forensic Science, *Ensuring that Forensic Analysis Is Based Upon Task-Relevant Information* (2015), at 1. Available at https://www.justice.gov/archives/ncfs/page/file/641676/
[35] *Id.*, at 1-2.
[36] OSAC 2022-S-0030, *Standard Methodology in Bloodstain Pattern Analysis* (July 2023).
[37] OSAC 2021-S-0037, *Standard Guide for Forensic Photogrammetry* (April 2023).
[38] OSAC 2021-N-0015, *Guiding Principles for Scene Investigation and Reconstruction* (September 2021).
[39] OSAC 2023-S-0026, *Task-Relevant Information in Friction Ridge Examination* (August 2023).
[40] *See, e.g.,* Gordon D. Schiff, *Minimizing Diagnostic Error: The Importance of Follow-up and Feedback*, 121 AM. J. MED. S38 (2008).

feedback on the accuracy of their diagnosis.[41] However, post-mortem judgments typically function as an open-loop system since it is often unknown how a person actually died and thus whether the medical examiner's manner of death determination was correct. In theory, a medical examiner could consistently apply the same criteria to every determination but be incorrect every single time because there is no corrective mechanism to alert them when they have made an error. Even prominent medical examiners recognize this important limitation, explaining that "there is no 'right' answer in many manner determinations, and the goal is consistency rather than some nonexistent criteria for correctness."[42] The National Association of Medical Examiners' (NAME) Guide for Manner of Death Classification likewise prioritizes consistency and downplays accuracy, explaining that:

> "It must be realized that when differing opinions occur regarding manner of death classification, there is often no 'right' or 'wrong' answer or specific classification that is better than its alternatives... The recommendations herein are ones selected to foster a consistent approach amongst certifiers, not because the recommended approach is the 'right' or the 'better' one."[43]

26. Despite this aspiration, medicolegal judgments often exhibit poor *reproducibility*—i.e., experts often reach different opinions of the same injury even absent biasing influences. For instance, studies by Dr. William Oliver have shown that interpretations of skin injuries are highly variable between experts. In one such study,[44] medical experts viewed images of "classic" skin injuries (i.e., images that were "largely taken from teaching sets" and were thus "expected to result in high consensus") and judged the class (e.g., sharp, penetrating, or blunt), kind (e.g., contusion, abrasion, or laceration), and object (e.g., pool cue, brick, or car bumper) of each injury in a multiple-choice format. Despite the ostensible prototypicality of the images, experts showed "surprising[ly]" low consensus in their opinions of the class (77%), kind (68%), and object (72%) of these injuries, leading the researchers to conclude that "'classic' patterned injuries may not be so classic" after all.[45]

27. Manner of death determinations are likewise highly variable between experts, as evidenced by data from Dr. Randy Hanzlick and colleagues. In their first such study,[46] medical examiners

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[41] *Id.*

[42] Peterson et al., *supra* note 2.

[43] Randy Hanzlick et al., *A Guide for Manner of Death Classification* (2002). Available at https://name.memberclicks.net/assets/docs/MANNEROFDEATH.pdf

[44] William R. Oliver & Xianming Fang, *Forensic Pathologist Consensus in the Interpretation of Photographs of Patterned Injuries of the Skin*, 61 J. Forensic Sci. 972 (2016).

[45] In a follow-up study, Oliver asked a new group of medical experts to judge a new but similar set of skin injuries, but now each image was accompanied by "historical and contextual information" (e.g., alcohol use, witness statements) that implied a particular diagnosis. As a result, experts' judgments showed greater consensus than they did in the previous study. However, because it was "a study of consensus of diagnosis rather than correctness" and "it was not possible to independently determine the 'ground truth' of the diagnosis," greater consensus does not necessarily mean greater accuracy. *See* William R. Oliver, *Effect of History and Context on Forensic Pathologist Interpretation of Photographs of Patterned Injury of the Skin*, 62 J. Forensic Sci. 1500 (2017).

[46] Julia Goodin & Randy Hanzlick, *Mind Your Manners, Part II: General Results from the National Association of Medical Examiners Manner of Death Questionnaire, 1995*, 18 Am. J. Forensic Med. Pathol. 224 (1997); Randy Hanzlick & Julia

who read the same 23 death scenarios showed "substantial disagreement" in their manner determinations, with only four scenarios resulting in greater than 90% consensus, while 11 scenarios produced lower than 70% consensus. Twenty years later, they conducted a similar study[47] with a new group of medical examiners and found similar results: Across 30 death scenarios, only four produced greater than 90% consensus while 17 showed less than 70% consensus. Given this inconsistency, legal scholars have argued that "manner of death determinations have no rightful place in criminal proceedings"[48] and should be *per se* inadmissible,[49] adding that medical examiners who testify that a death was a homicide risk usurping the fact-finding role of the jury (per Federal Rule of Evidence 704).[50]

Extraneous Information Can Prompt Bias and Error in Medicolegal Judgments, Including Manner of Death Determinations

28. Inconsistency in manner determinations is surely concerning, and cognitive bias can worsen that inconsistency. As with forensic science,[51] research has established that extraneous information can lead medical experts to judge the very same injury or death as either criminal or not—subjective judgments that carry significant ramifications for justice and public safety. Below, I describe several experiments that illustrate this point.

29. In one study,[52] Dr. James Anderst and colleagues had medical experts complete a realistic simulation of a child abuse evaluation in which (a) the child's parents were described as either married and financially stable or as unmarried, poor, and having a volatile relationship, and (b) unbeknownst to the participants, the child's injuries were in fact either accidental or due to abuse. Overall, experts misdiagnosed 15% of abuse cases as accidents and 61% of accident cases as abuse—but when also given prejudicial information about the child's parents, a staggering 83% of experts misjudged accidental injuries as child abuse. In addition to lowering diagnostic accuracy, this biasing contextual information also influenced which tests experts requested be performed, and in some cases, led them to confabulate suspicious inconsistencies in the caregiver's story that did not actually occur.

30. In a similar study,[53] Dr. Marie-Louise Loos and colleagues asked medical experts to evaluate nine X-rays, each of which depicted a child's leg fracture, and to determine whether each child's fracture was accidental or due to abuse. Although all participants saw the same nine

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Goodin, *Mind Your Manners, Part III: Individual Scenario Results and Discussion of the National Association of Medical Examiners Manner of Death Questionnaire, 1995*, 18 AM. J. FORENSIC MED. PATHOL. 228 (1997).

[47] Randy L. Hanzlick et al., *Mind Your Manners: 20 Years Later*, 5 ACAD. FORENSIC PATHOL. 380 (2015).

[48] Dan Simon, *Minimizing Error and Bias in Death Investigations*, 49 SETON HALL LAW REV. 255 (2019).

[49] Keith A. Findley & Dean A. Strang, *Ending Manner of Death Testimony and Other Opinion Determinations of Crime*, 60 DUQUESNE LAW REV. 302 (2022).

[50] *See also* Jeff Kukucka & Oyinlola Famulegun, *The Impact of Stereotypes on Evaluations of Medical Expert Testimony* (INNOCENCE PROJECT JUST DATA CONFERENCE, 2023), https://innocenceproject.org/petitions/2023-just-data-conference/

[51] See *supra*, Para. 20.

[52] James Anderst et al., *Using Simulation to Identify Sources of Medical Diagnostic Error in Child Physical Abuse*, 52 CHILD ABUSE & NEGL. 62 (2016)

[53] Marie-Louise H. J. Loos et al., *Paediatric Femur Fractures—The Value of Contextual Information in Judgment in Possible Child Abuse Cases: Are We Bias?*, 180 EURO. J. PEDIATRICS 81 (2021).

X-rays, each X-ray was paired with different extraneous information about the child's family. As a result, experts judged the same fracture as more likely due to abuse if also told that, for example, the child's parents were unmarried, immigrants, or on welfare.

31. Dr. Knut Wester and colleagues[54] found that merely situating a medical evaluation in a legal context may dispose experts to judge ambiguous injuries as criminal. They first identified 17 cases in which a court-appointed medical expert had opined that a child had suffered abusive head trauma (AHT), 16 of which had resulted in criminal convictions. Then, they obtained the medical records pertaining to those cases and asked a panel of independent medical experts to review them, but without knowing that a criminal accusation had been made. For 16 of the 17 cases, the panel identified an alternative diagnosis (i.e., other than AHT) to explain the same medical findings, leading the authors to conclude that "the majority of the [observed head injuries] possibly, or even probably, had a non-traumatic cause."

32. Dr. Itiel Dror and colleagues (myself included)[55] provided the first evidence that cognitive bias can influence manner of death determinations specifically. In our study, medical experts read one of two clinical vignettes that recounted the death of a young child, and then opined as to how the child had died. In both vignettes, a young girl was found unresponsive at home by a family member and taken to an emergency room, where she died; each file also described the child's history and injuries (e.g., subarachnoid hemorrhage, skull fracture, various contusions). The only differences between the two vignettes were two non-medical details: In one version, the child was white and found unresponsive by her grandmother, and in the other, the child was Black and found unresponsive by her mother's boyfriend. These details had a dramatic effect on medical experts' manner of death judgments: As shown below, experts who read the former vignette more often ruled the death an accident (28%) rather than a homicide (13%), but those who read the latter vignette more often ruled the same death a homicide (35%) rather than an accident (6%). Stated otherwise, the odds of a "homicide" opinion were 12 times greater if experts believed that the child was Black and in the care of her mother's boyfriend, even though all else was identical.

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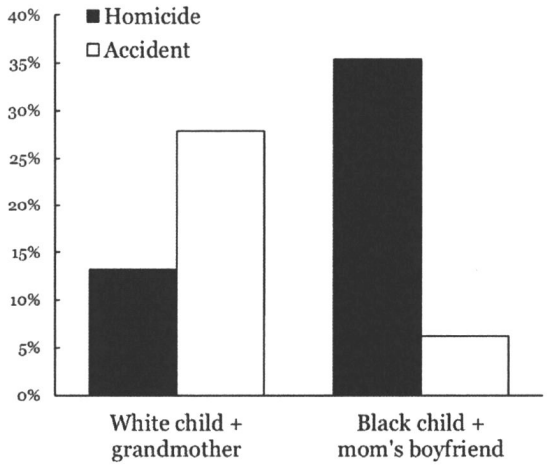
[54] Knut Wester et al., *Re-evaluation of Medical Findings in Alleged Shaken Baby Syndrome and Abusive Head Trauma in Norwegian Courts Fails to Support Abuse Diagnoses*, 111 ACTA PAEDIATR. 779 (2021).
[55] Itiel E. Dror et al., *Cognitive Bias in Forensic Pathology Decisions*, 66 J. FORENSIC SCI. 1751 (2021).



33. Dr. Dror and colleagues then conducted a second study[56] that is highly relevant to this case, in which medical experts evaluated autopsy photos from real cases in which a person died due to a single gunshot wound. Although the experts saw the same photos, each photo was accompanied by extraneous non-medical information that implied the death to be either a suicide (e.g., that the decedent was an immigrant who was molested as a child and was worried about being deported) or homicide (e.g., that the decedent had witnessed a gang-related murder and received threatening text messages to remain silent). As shown below, such information had a dramatic effect on experts' manner of death determinations:

	Expert Opinions of the Same Gunshot Wounds (%)				
	Suicide	Homicide	Accident	Natural	Undetermined
Implied Suicide	**56.7**	**9.3**	9.6	0	24.4
Implied Homicide	**3.8**	**68.6**	6.4	0	21.2

34. To summarize, a host of peer-reviewed experiments have now demonstrated that non-medical information (such as an individual's race, socioeconomic status, marital status, or status as a criminal defendant) can distort medical experts' interpretations of otherwise-identical injuries and deaths in ways that can produce costly errors (e.g., false allegations of child abuse, or actual instances of child abuse going undetected).

Prominent Medical Examiners Freely Admit that Manner of Death Determinations Are "Not Scientific" and Unfit for Courtroom Presentation

35. The publication of the first Dror study[57] evoked strong and mixed reactions from prominent medical examiners: Some lauded it for highlighting the need to protect post-mortem

[56] Itiel E. Dror et al., *Contextual Information in Medicolegal Death Investigation Decision-Making: Manner of Death Determination for Cases of a Single Gunshot Wound*, 5 FORENSIC SCI. INT'L: SYNERGY 100285 (2022).
[57] Dror et al., *supra* note 55.

decisions against bias,[58] while others were hostile and dismissive of our findings. In response to threats from the latter, our paper was subjected to an unprecedented level of post-publication scrutiny, including independent ethical and statistical reviews, all of which unequivocally reaffirmed the validity of our methodology and conclusions.[59]

36. In one published response to our paper, medical examiners argued that a child's relationship to their caretaker is relevant to investigating abuse because, generally speaking, genetically unrelated men more often abuse children than do genetically related women.[60] There are at least three serious flaws with this argument. First, the argument is based on population-level statistics that may be outdated and/or the product of bias (i.e., a self-fulfilling prophecy). Second, even if the statistics are valid, this argument represents an *ecological fallacy*, because population-level data cannot be used to draw inferences about individual cases. Third, even if race and caretaker information are deemed relevant to abuse investigations, these factors should not be the *sole* basis for such a determination, as it was in our study.

37. More importantly, other published responses sought to dispel "misunderstanding[s]" about "the methods and purpose of manner determination."[61] To be exact, a letter co-authored by 86 medical examiners representing 29 U.S. states (including the then-President of the National Association of Medical Examiners [NAME]) clarified that "manner determination is not a 'scientific' determination" but rather a "tool for aggregate statistics [that] often does not fit well in court" and is "misuse[d]... by the courts."[62] A second letter by some of these same authors (again including the then-President of NAME) further explained that "manner of death was established... explicitly for the purpose of public health statistics, not courtroom presentation," and that manner determinations are meant to inform "vital statistics, not trial results."[63] Similarly, another prominent forensic pathologist wrote that "manner determination is a nonscientific determination for statistical purposes" such that "any individual determination is questionable."[64] These statements leave no doubt that, even according to forensic pathologists themselves, manner of death determinations are tenuous and should not determine judicial decisions.

Dr. Thiersch Was Aware of Extraneous Investigative Facts and Theories Prior to the Autopsy, Which Raises Significant Concern over Cognitive Bias

38. Turning now to the case at hand, it is clear that investigators concluded that Mr. Light had killed Ms. Harrett-McDonald well before Dr. Thiersch performed an autopsy and opined as to

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[58] *See, e.g.*, Johan Duflou, *Commentary on Dror et al. 'Cognitive Bias in Forensic Pathology Decisions'*, 66 J. FORENSIC SCI. 2561 (2021); Mark L. Graber, *Commentary on Dror et al. 'Cognitive Bias in Forensic Pathology Decisions'*, 66 J. FORENSIC SCI. 2574 (2021); Ken Obenson, *Commentary on Dror et al. 'Cognitive Bias in Forensic Pathology Decisions'*, 66 J. FORENSIC SCI. 2582 (2021).
[59] *See* Michael A. Peat, *JFS Editor-in-Chief Preface*, 66 J. FORENSIC SCI. 2539 (2021).
[60] Peterson et al., *supra* note 2.
[61] *Id.*, at 2541.
[62] *Id.*, at 2542.
[63] Brian L. Peterson et al., *Response to Authors' Response*, 66 J. FORENSIC SCI. 2549 (2021), at 2550.
[64] William Oliver, *Commentary on Dror et al. 'Cognitive Bias in Forensic Pathology Decisions'*, 66 J. FORENSIC SCI. 2563 (2021), at 2563.

her manner of death. For instance, the KCMEO Investigator's Report notes that "by 3/3/21 [i.e., 20 days before the autopsy], it had been documented that the subject was shot in the context of domestic violence" and that "a suspect was in custody with charges pending." Similarly, the KCMEO Donor Screening Form (dated 3/10/21) describes the "initial circumstances" of her death as "gun shot wound to head by boyfriend."

39. It is also clear that Dr. Thiersch was aware of investigators' belief that Mr. Light had killed Ms. Harrett-McDonald prior to her autopsy. During his 8/2/23 interview, Dr. Thiersch explained that he customarily receives "a brief narrative about circumstances about what happened" that is "available to [him] before performing the autopsy." In this case, the narrative stated that "there was some sort of domestic violence" and that "at some point the boyfriend admitted to shooting [Ms. Harrett-McDonald]." Dr. Thiersch was also aware that investigators "were unable to find a firearm" at the death scene, which he described as "concerning" because "usually when someone has a self-inflicted gunshot wound, the weapon is there." Given the aforementioned research showing that extraneous information can distort medicolegal judgments,[65] there is surely cause for concern that Dr. Thiersch's *a priori* knowledge of these facts and theories would prejudice his manner determination.

40. Dr. Thiersch also describes Ms. Harrett-McDonald's injuries as ambiguous and difficult to evaluate. During his interview, he noted that "modification of the wound" and "healing that goes on" make it "less clear what's going on" because "some of the original evidence that's there may be lost or obscured," including information that would have been "useful for determining range of fire." He likewise explained that Ms. Harrett-McDonald's wound "is not a typical gunshot wound [because] it's been modified by medical therapy [which] makes interpretation difficult." As noted above,[66] the ambiguity of these injuries would inherently render their interpretation more susceptible to cognitive bias.

41. Lastly, it is worth noting that, per the KCMEO Record of Autopsy Attendance form, a prosecutor from the Kings County Prosecuting Attorney's Office ("KCPAO") was present for Ms. Harrett-McDonald's autopsy. In his interview, Dr. Thiersch explained that it is "pretty standard" for him to "briefly talk to them to see if they have any questions" and that "the prosecutor or law enforcement... sometimes talk to us about the circumstances," though he also asserted that their presence "doesn't influence[s him] that much." However, research suggests that (a) people are generally poor at introspecting about their own objectivity,[67] (b) most forensic experts believe that they are unaffected by cognitive bias despite ample evidence to the contrary,[68] and (c) merely situating a medical evaluation in a legal context may create a predisposition to judge injuries as criminal rather than non-criminal.[69]

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[65] See *supra*, Paras. 29-33.
[66] See *supra*, Paras. 17 & 21.
[67] *See, e.g.*, Nisbett & Wilson, *supra* note 4.
[68] Kukucka et al., *supra* note 29.
[69] Wester et al., *supra* note 54.

42. Moreover, Dr. Harruff—KCMEO's Chief Medical Examiner and Dr. Thiersch's supervisor—feels differently about the meaning of a prosecutor's attendance at an autopsy, explaining that "just her walking in would have been a big red flag of potential homicide." Dr. Harruff goes on to characterize the prosecutor's influence on the autopsy as follows:

> "You're gonna say, 'Oh, you're sounding so highly biased because the prosecutor is right in there talking to Dr. Thiersch and telling him what to think and what to say.' And I'm saying that, yeah, maybe so,"

Dr. Thiersch Freely Admits that His Manner Determination Was Based Entirely on Extraneous Rather than Medical Information, and It Thus Carries No Independent Probative Value

43. Most importantly, Dr. Thiersch openly admits that his manner determination in this case was not based on medical information but rather entirely contingent on investigators' theory that Mr. Light had killed Ms. Harrett-McDonald. When asked to explain why he ruled her death a homicide, Dr. Thiersch said it was "mainly the circumstances"—namely that "it was eventually determined that she was shot by somebody else" and "there was information to that effect in the investigator's report." Similarly, when asked why he did not certify the death as 'undetermined,' Dr. Thiersch reiterated: "The information was that the boyfriend was responsible... That's the information that I had. So it's a homicide." Finally, he admits that if the investigators' theory had changed, so too would his opinion, explaining:

> "... initially I think there was some thought that this was a suicide, but eventually the boyfriend turned himself in and admitted to the shooting. That's basically all I have. I have information that she was shot by somebody else. That would make this a homicide. If those facts change, then [my] interpretation is different."

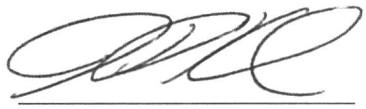
Simply put, Dr. Thiersch's manner of death determination in this case is not a 'medical' judgment in that it is not based on medical information that he is uniquely qualified to evaluate as a medical expert. Instead, his manner determination—by his own admission—is nothing more than acquiescence to the investigative theory of which he was aware before the autopsy, and it therefore carries no independent probative value.

44. Lastly, Dr. Thiersch concedes that he was unaware of certain information that could (and perhaps should) have informed his manner determination. For instance, he admits that a decedent's history of "suicidal ideation" would be "pertinent" to his opinion, and that the results of "blood spatter tests" from Ms. Harrett-McDonald's body may have changed his manner determination "if it had been available" at the time. These statements, along with the aforementioned research, suggest a considerable possibility that Dr. Thiersch would have reached a different opinion if he had known this information prior to the autopsy.

Conclusion

45. Over the past decade, it has become abundantly clear that expert forensic and medicolegal judgments are subject to subconscious biases that can undercut their reliability and produce costly errors if left unchecked. Without equivocation, my review of this case leads to the inescapable conclusion that Dr. Thiersch's manner of death determination is not reliable; the extant scientific research strongly suggests that if another qualified expert were to evaluate the same medical findings with different (or no) extraneous non-medical information, they would very possibly reach a different conclusion about Ms. Harrett-McDonald's death. Moreover, Dr. Thiersch freely admits that his homicide opinion was the result of acquiescence to investigators' theory about the death and not based on an independent consideration of medical findings that fall within the purview of his expertise. For that reason alone, Dr. Thiersch's manner determination in this case should be given no weight.

Signed under the pains and penalties of perjury, this 29th day of April, 2024,



Dr. Jeff Kukucka, Ph.D.

ATTACHMENT F
Keith Findley and Dean Strang Article

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Ending Manner-of-Death Testimony and Other Opinion Determinations of Crime

Keith A. Findley
Dean A. Strang

Ending Manner-of-Death Testimony and Other Opinion Determinations of Crime

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Dean A. Strang[**]

INTRODUCTION

In January 2011, Ellen Greenberg's fiancé and her apartment building manager broke down her apartment door after she failed repeatedly to respond to attempts to contact her.[1] They found her

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1. The facts in this case narrative are drawn from Jessica Lipscomb, *A Woman with 20 Stab Wounds Died of Suicide, an Autopsy Found. Her Parents Are Unconvinced: 'It Makes No*

dead in a pool of blood on the kitchen floor, the victim of twenty stab wounds to her chest, torso, head, and neck, including stab wounds to the back of her head and to her body through her clothes. They found a half-eaten fruit salad on the kitchen counter along with an overturned knife block. By all appearances, Greenberg was the victim of a grisly murder, and the medical examiner ("ME") initially ruled homicide the manner of death.

Eventually, however, the ME changed the manner finding to suicide. It was a curious determination, especially given the nearly two-dozen stab wounds—including wounds atypical of suicide, such as through the clothing and to the back of the head—along with the absence of a suicide note, the appearance that her death had interrupted her dining on the fruit salad, the fact that she had expressed no thoughts to anyone of harming herself and appeared happy to family. Moreover, she had behaved normally earlier that day by, for example, filling up the gas tank in her car before returning home that morning. So why did the ME change the manner-of-death determination to suicide?

The answer lies not in any medical evidence or in anything the ME was specially trained to consider, but in ordinary circumstantial evidence—the fact that Greenberg's apartment was locked from the inside with a swing bar, and the only other entrance, an exterior balcony on the sixth-floor apartment, was covered with fresh, undisturbed snow. Moreover, Greenberg had no defensive wounds, nothing was stolen from her apartment, and she had been on anxiety medication and a sleep aid, both of which listed suicidal ideations as possible side effects. These were the kinds of circumstances that juries are called upon to consider every day, and that juries are fully capable of assessing without expert interpretation from a physician. Yet they were also the kinds of non-expert evidence that routinely underlie medical opinion testimony about manner of death or injury.

In courtrooms across America, MEs and other medical doctors routinely testify to their opinions about both cause and manner of death and about whether injuries were produced by criminal activity or something else.[2] "Cause"—meaning specifically physiological

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Sense.', WASH. POST (Oct. 27, 2021), https://www.washingtonpost.com/nation/2021/10/27/ellen-greenberg-suicide-stabbing/.

2. NAT'L RSCH. COUNCIL OF THE NAT'L ACADS., STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD 243 (2009) [hereinafter NAS REPORT], http://www.nap.edu/catalog/12589.html. Cause and manner of death determinations are routinely made by coroners and MEs. Medical experts also often make determinations about cause and manner of injury in non-death cases, as in, for example, child abuse cases, although that terminology is not routinely used in that context. *See id.* The legal issues related to

cause[3]—generally refers to findings such as heart attack, infection, gunshot wound to the head, or strangulation. These are findings that medical experts, drawing on medical expertise, rightly make.

"Manner" determinations, by contrast, generally refer to interpreting external factors, beyond medical findings about disease or injury to the body, to reach conclusions about whether the "cause" was homicidal, suicidal, accidental, natural, or undetermined.[4] While medical expertise often contributes to understanding manner of death, that determination almost always demands consideration also of ordinary evidence that neither requires nor is improved by a physician's assessment. Because jurors (or judges) typically are assigned responsibility for assessing such ordinary evidence, a question arises: why are medical experts routinely called upon and allowed to testify expansively about "manner?"

There is another, perhaps more subtle, problem with "manner" determinations by medical experts: those opinions conceal an epistemological problem. How does the ME or other medical expert know the veracity or accuracy of the ordinary evidence that provides the contextual support for the "manner" opinion in the end? That is, the "manner" determination both shifts the responsibility for assessing ordinary evidence away from the constitutionally proper factfinder, who is as capable of considering ordinary evidence as the doctor, and rests in part on the merely assumed provenance of that ordinary evidence. Worse, the medical expert does not have the tools that jurors and judges have for assessing the truth and accuracy of that ordinary evidence: an oath taken by the evidence-giver; cross-examination; rules of evidence designed to exclude the grossly unreliable; and the opportunity of an adversary to offer contrary evidence. Instead, the medical expert has professional incentives, which may bleed into personal incentives and cognitive biases, to accept this ordinary, contextual evidence from the police without challenge, regardless of its possible weaknesses.

In Part I of this Article, we examine the historical accident that created the practice of calling on medical experts to testify not only

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such cause-and-manner determinations are the same in both death and non-death cases, so in this paper references to "cause and manner" are meant to apply to both death and non-death cases.

3. *Id.* at 257; *see also* THE AUTOPSY COMM. AND THE FORENSIC PATHOLOGY COMM. OF THE COLL. OF AM. PATHOLOGISTS IN CONJUNCTION WITH THE NAT'L ASS'N OF MED. EXAMINERS, CAUSE-OF-DEATH STATEMENTS AND CERTIFICATION OF NATURAL AND UNNATURAL DEATHS 3 (Randy L. Hanzlick ed., 1997) (defining "cause of death" as "the disease (condition)" that led to death).

4. RANDY HANZLICK ET AL., NAT'L ASS'N OF MED. EXAMINERS, A GUIDE FOR MANNER OF DEATH CLASSIFICATION 3 (2002); NAS REPORT, *supra* note 2, at 248, 257.

about cause, but also manner of death or injury. In Part II, we consider three approaches that U.S. courts use when considering the admissibility of cause- and manner-of-death opinions. We then examine the nature of manner determinations in Part III, looking at the kinds of facts that inform those decisions, and we consider whether such opinion testimony is appropriately admitted under the Federal Rules of Evidence. Finally, in Part IV, we extend this analysis to other "manner" determinations made by physicians, such as child-abuse determinations in shaken baby syndrome or abusive head trauma cases.

In the end, we conclude that manner-of-death or injury opinion testimony is almost always improper under *existing* evidentiary rules. First, to the extent it relies upon *non-medical* facts, the manner determination produces opinions that exceed the scope of a physician's *medical* expertise.[5] Second, because this type of testimony ventures into questions of etiology rather than diagnosis, it fails to meet the standards demanded by Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*[6] In typical diagnostic scenarios, the accepted process of differential diagnosis generally provides adequate reliability for admissibility under Rule 702 and *Daubert*—cause determinations often present no evidentiary problem, then. By contrast, manner determinations entail not a differential diagnosis, but a differential etiology,[7] with fewer assurances of reliability. Third, because manner determinations almost always depend on ordinary factual evidence—the stuff juries can assess on their own—manner determinations are not "helpful" to the factfinder, as required by Rule 702.[8] Fourth, in a criminal case, a manner determination often imports a tacit opinion on the mental state of an actor—the very type of opinion that the Federal Rules of Evidence explicitly forbid in Rule 704(b).[9] Moreover, to the extent manner determinations depend on ordinary facts that juries will hear about and consider, embedding them in medical opinion evidence runs the risk of unwitting double-counting of those facts—once by the expert, and then a second time, independently, by the jury or

5. *See* discussion *infra* Part III.A.

6. 509 U.S. 579, 597 (1993); *see* discussion *infra* Part III.B.

7. In this Article we equate manner determinations with etiology in this sense. Manner calls for a determination of whether a death was a homicide, accident, natural event, suicide, or undetermined. To make that determination, the physician must by necessity, at least to some extent, determine etiology—what happened that made this a homicide, accident, natural event, or suicide? Etiology thus can be understood as a specific determination of what events produced the manner of death (or injury).

8. *See* discussion *infra* Part III.C.

9. *See* discussion *infra* Part III.D.

judge. At a minimum, it heightens the risk that the jury will defer inappropriately to a purported expert: that the lab coat, not the evidence, will decide the case.[10]

I. THE ME'S OR CORONER'S ORIGINAL WARRANT TO DETERMINE "CAUSE AND MANNER" OF DEATH OR INJURY

Under the Rules of Evidence, experts enjoy a privileged place in U.S. courtrooms. And among experts, medical experts and coroners[11] often enjoy even greater privileges than most. The greater leeway extended to such experts is evident in several respects. First, ordinary witnesses usually are allowed to testify only to observed facts, not to their opinions about what they have observed.[12] Second, all other witnesses are usually limited to testifying about matters they have personally perceived and are prohibited from testifying about what others have said or what they have read or learned from other sources.[13] Finally, while witnesses may testify about "ultimate issues" in a case,[14] they may not testify about "whether the defendant did or did not have a mental state or condition that constitutes an element of the crime charged or of a defense[,]"[15] and courts generally prevent witnesses from occupying the entire decisional field—that is, they prevent them from usurping the function of the jury and rendering opinions about guilt or liability on the basis of all evidence in the case.[16] But medical

10. *See* Keith A. Findley, *The Absence or Misuse of Statistics in Forensic Science as a Contributor to Wrongful Convictions: From Pattern Matching to Medical Opinions About Child Abuse*, 125 DICK. L. REV. 615, 650–51 (2021) [hereinafter Findley, *Misuse of Statistics*].

11. Note initially the distinction between medical examiners and coroners. The more modern, statutory office of medical examiner always is filled by a physician, almost always one trained in pathology. As we explain below, see *infra* notes 21–25 and accompanying text, the ancient office of coroner, which persists in many parts of the United States (especially rural areas) is an elective office, typically, that may be filled by anyone. Coroners may be nurses or even people with no medical training. When a coroner happens to be a medical doctor, he or she may be a medical doctor with a specialty other than pathology. For our purposes, though, the distinction between ME's and coroners really does not matter: as to manner of death, both MEs and coroners are venturing into non-medical, ordinary evidence as to which neither is any better qualified than a representative juror in interpreting. We therefore consider MEs and coroners together, unless expressly noted otherwise.

12. *See* FED. R. EVID. 602 (requiring personal knowledge), 701 (permitting lay witnesses to offer opinions only under limited circumstances), 702 (permitting experts to render opinions).

13. *See* FED. R. EVID. 602 (requiring personal knowledge), 802 (banning most hearsay).

14. FED. R. EVID. 704(a).

15. FED. R. EVID. 704(b).

16. *See, e.g.*, United States v. Wright, 48 M.J. 896, 901–02 (A.F. Ct. Crim. App. 1998) ("Expert testimony may not be used to determine the credibility of the victim nor may an expert offer an opinion as to the guilt or innocence of the accused."); United States v. Thanh Quoc Hoang, 891 F. Supp. 2d 1355, 1362 (M.D. Ga. 2012) (quoting Montgomery v. Aetna Cas. & Sur. Co., 898 F.2d 1537, 1541 (11th Cir. 1990)) ("Although Rule 704(a) abolished the

experts often are permitted to exceed these limitations, and they do indeed render opinions that at times purport to decide the entire case.[17]

The ME's or coroner's warrant for rendering such opinions starts with the duties they are assigned by statute. Medical examiners and coroners are charged by law in most states with the responsibility to determine cause and manner of death.[18] Typically, that responsibility includes signing a death certificate "describing the manner or circumstances under which death occurred (natural, accident, suicide, homicide, or undetermined)."[19] The death certificate serves multiple purposes: it "informs families about specific conditions that led to death; provides local, state and national mortality statistics by cataloging morbidity and mortality; indicates priorities for funding programs and policy making for public health and safety issues; and, serves as the legal and administrative documentation of the death."[20]

While such statutes thus make cause and manner determinations part of the ME's statistics-generating and administrative duties, does that legislative and administrative charge mean they also are entitled to offer opinion testimony in court on both issues? Courts often assume as much, but, as explained below, the Rules of Evidence—to say nothing of objective reason—say otherwise. Why then do courts almost reflexively permit such expansive opinion testimony? It may be little more than a historical accident with

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ultimate issue rule, an expert 'may not, however, merely tell the jury what result to reach. A witness also may not testify to the legal implications of conduct.'") (citations and alterations to original omitted); Stephens v. State, 774 P.2d 60, 66 (Wy. 1989) (quoting 3 CHARLES E. TORCIA, WHARTON'S CRIMINAL EVIDENCE § 566 (14th ed. 1987) ("[A] witness may not state his opinion as to . . . whether the defendant was guilty or innocent of the crime charged[.]")).

17. *See* Keith A. Findley et al., *Feigned Consensus: Usurping the Law in Shaken Baby Syndrome/Abusive Head Trauma Prosecutions*, 2019 WIS. L. REV. 1211, 1251–52 (2019) [hereinafter Findley et al., *Feigned Consensus*]; Deborah Tuerkheimer, *Science-Dependent Prosecution and the Problem of Epistemic Contingency: A Study of Shaken Baby Syndrome*, 3 ALA. L. REV. 513, 515–16 (2011); Deborah Tuerkheimer, *The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts*, 87 WASH. U. L. REV. 1, 5 (2009).

18. NAS REPORT, *supra* note 2, at 256; *see, e.g.*, IOWA CODE § 331.802(2) (requiring county medical examiners to "conduct a preliminary investigation of the cause and manner of death [and] prepare a written report of the findings" when "a person's death affects the public interest"); MICH. COMP. LAWS § 52.202(1) ("A county medical examiner . . . shall investigate the cause and manner of death . . . ."); *id.* § 52.205(3) ("The county medical examiner . . . shall carefully reduce or cause to be reduced to writing every fact and circumstance tending to show the condition of the body and the cause and manner of death[.]").

19. NAS REPORT, *supra* note 2, at 257; *see also* Evan W. Matshes & Sam W. Andrews, *The Autopsy as a 'Dying' Art*, 42 CHAMPION, March 2018, at 34, 35 ("[A] manner of death determination is . . . an *opinion* offered by the Coroner or Medical Examiner, with no legal bearing. This opinion is offered primarily for statistical purposes, as part of a statutory obligation to produce a death certificate describing how and why a person died.").

20. Amy Hawes & Darinka Mileusnic-Polchan, *Medical Examiners and 'Manner of Death': How Is a Suicide Determination Made?*, 55 TENN. B.J. 20, 21 (2019).

resulting inertia, or a simple misunderstanding of the purpose and nature of manner determinations, more than principle and law.

The coroner system initially emerged in the ninth or tenth century as an office whose purpose was to safeguard the financial interests of the crown in criminal cases.[21] "On behalf of the crown, the crowner was responsible for inquests to confirm the identity of the deceased, *determine the cause and manner of death*, confiscate property, collect death duties, and investigate treasure troves."[22] For nearly one hundred years, the National Academy of Sciences and other scientific bodies have pushed for abolishing the coroner system and moving toward MEs[23] because the coroner traditionally, and frequently today, is an elected (occasionally appointed) position that requires no medical training at all.[24] Today, in many jurisdictions, coroners have been supplanted by MEs, but the coroner remains statutorily intact in many states, either alone or in tandem with an ME.[25]

II. JUDICIAL APPROACHES TO ADMISSIBILITY OF CAUSE AND MANNER DETERMINATIONS

As MEs began to assume responsibility for determining cause and manner of death and signing death certificates, courts turned to them to testify as experts on those matters.[26] Courts also often admit the ME's autopsy report itself with its cause-and-manner determinations, sometimes over hearsay and Confrontation Clause objections.[27]

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21. NAS REPORT, *supra* note 2, at 241 (citing Randy Hanzlick, *Overview of the Medicolegal Death Investigation System in the United States*, *in* MEDICOLEGAL DEATH INVESTIGATION SYSTEM: WORKSHOP SUMMARY 7, 8 (Inst. Med. ed., 2003)).

22. NAS REPORT, *supra* note 2, at 241 (emphasis added).

23. *See, e.g.*, *id.* at. 242, 247, 267; BULLETIN OF THE NATIONAL RESEARCH COUNCIL, NO. 64, NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMY OF SCIENCES, THE CORONER AND THE MEDICAL EXAMINER (1928).

24. NAS REPORT, *supra* note 2, at 247.

25. "As of 2004, administratively, 16 states had a centralized statewide medical examiner system, 14 had a county coroner system, 7 had a county medical examiner system, and 13 had a mixed county ME/C system." *Id.* at 245 (citing J.C.U. Downs, Board Member & Chair, Governmental Affs. Comm., Nat'l Ass'n Med. Exam'r; Vice Chair, Consortium of Forensic Sci. Orgs.; Coastal Reg'l Med. Exam'r, Ga. Bureau Investigation, Presentation to the Committee (June 5, 2007)).

26. *See* Michael Panella, *Problematic Legal Causations of Death,* 44 TENN. B.J. 21, 24 (2008) ("Given that the medical examiner determines the cause and manner of death, the medical examiner's findings may be critical in the legal proceedings involving problematic death causation"; "the courts may rely on the medical examiner for the cause and manner of death when faced with problematic causation issues.").

27. Andrew Higley, Note, *Tales of the Dead: Why Autopsy Reports Should Be Classified as Testimonial Statements under the Confrontation Clause*, 48 N. ENG. L. REV. 171, 176 (2013).

In the United States today, courts are inconsistent as to whether MEs may testify about both cause and manner of death, but some general principles and approaches are discernible. First, courts almost always permit MEs to testify about cause of death, because that determination almost always depends upon medical expertise to determine if the death was caused by, for example, disease, blunt force trauma, poisoning, heart attack, strangulation, or the like.[28] Even then, a few courts have limited some cause-of-death testimony in those somewhat rare occasions when the determination was based primarily on ordinary non-medical evidence rather than on physical examination of the body at autopsy.[29] Second, some courts admit ME testimony on both cause and manner in almost every case. Illustrative of this group of states is Kentucky, where the state's Supreme Court has held that both are generally admissible because "it is axiomatic that a determination of the cause and manner which led to a person's death is generally scientific in origin and outside the common knowledge of layperson jurors."[30] Third, some courts take a more nuanced approach, particularly with regard to manner-of-death: they generally admit both cause and manner opinions but exclude such evidence, especially manner determinations, on a case-by-case basis, depending on whether the opinion was based on medical evidence from the autopsy or instead almost entirely on non-medical evidence.[31] As the Arizona Court of Appeals put it, after surveying nationwide caselaw: "To the extent that there is a common thread amongst these cases, it is that the admissibility in a criminal case of a medical examiner's opinion regarding the manner of death depends on the particular facts and circumstances of each case."[32]

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28. *See, e.g.*, Baraka v. Commonwealth, 194 S.W.3d 313, 315 (Ky. 2006). Admissibility of medical opinion on that issue has been widely accepted for decades. *See* J. Thomas Sullivan, *When Death is the Issue: Uses of Pathological Testimony and Autopsy Reports at Trial*, 19 WILLAMETTE L. REV. 579 (1983).

29. *See, e.g.*, State v. Tyler, 867 N.W.2d 136, 162 (Iowa 2015).

30. *Baraka*, 194 S.W.3d at 315; *see also* Medlock v. State, 430 S.E.2d 754, 756–57 (Ga. 1993); State v. Byles, 652 So.2d 59, 61–62 (La. Ct. App.1995) ("A physician testifying as an expert may properly give an opinion as to the probable manner in which a wound or other traumatic injury was inflicted where such testimony is based on facts within the expert's knowledge."); Commonwealth v. Pikul, 511 N.E.2d 336, 339 (Mass. 1987); State v. Commander, 721 S.E.2d 413, 419–20 (S.C. 2011) (finding manner-of-death opinion evidence admissible because the "anecdotal history" provided by police and relied on by the medical examiner was the type of information routinely relied on by medical professionals in conducting autopsies); State v. Jones, 801 P.2d 263, 267 (Wash. Ct. App. 1990) ("[U]nder the facts and circumstances presented, the doctors were better qualified than jurors to adjudge the cause of death and whether the fatal blow was accidental or inflicted."); State v. Smith, 358 S.E.2d 188, 191 n.1 (W. Va. 1987).

31. *See, e.g.*, *Tyler*, 867 N.W.2d at 156–57 (collecting cases).

32. State v. Sosnowicz, 270 P.3d 917, 923 (Ariz. Ct. App. 2012).

The Iowa Supreme Court's decision in *State v. Tyler* is illuminating, because it thoroughly canvasses the case law from around the country, and because it recognizes some of the problems with admitting some ME cause and manner opinion evidence. The *Tyler* court held that it was error to admit both cause- and manner-of-death testimony under the unique circumstances of that case because the ME admitted that both opinions were dependent on ordinary, non-medical evidence.[33] The issue at trial was whether the defendant's baby was still-born or born alive and then drowned in a bathtub.[34] The ME conceded that the medical evidence was indeterminate on that question, and that the only thing that caused him to revise his initial findings from undetermined to drowning (cause) and homicide (manner) was that police informed him that, after initially claiming the baby was born still,[35] the defendant eventually told police that the baby had moved and cried after birth and she had filled the bathtub to drown him.[36] Because both the cause and manner conclusions therefore were wholly dependent on ordinary, non-medical evidence, both determinations were beyond the proper scope of expert testimony. The court concluded that the trial court "abused its discretion in allowing the medical examiner to testify to the cause and manner of Baby Tyler's death because the medical examiner based his opinions primarily, if not exclusively, on Tyler's inconsistent and uncorroborated statements to the police as opposed to objective, scientific, or medical evidence."[37]

But the *Tyler* court did not hold that all cause- or manner-of-death opinion evidence is inadmissible. Rather, the court observed:

> [W]hen a medical examiner over-relies on witness statements or information obtained through police investigation in forming his or her opinions on cause or manner of death, such opinions may not assist the trier of fact. Numerous jurisdictions have held that when a medical examiner bases his or her opinions on cause or manner of death largely on statements of lay witnesses or information obtained through police investigation, such opinions are

33. *Tyler*, 867 N.W.2d at 156.
34. *Id.* at 150.
35. *Id.* at 146.
36. *Id.* at 147.
37. *Id.* at 144. For other cases adopting a similar approach and conclusion, see, for example, *Sosnowicz*, 270 P.3d at 922–23; Maxwell v. State, 414 S.E.2d 470, 473–74 (Ga. 1992), *overruled on other grounds by* Wall v. State, 500 S.E.2d 904, 907 (Ga. 1998); People v. Perry, 593 N.E.2d 712, 716 (Ill. App. Ct. 1992); State v. Vining, 645 A.2d 20, 20–21 (Me. 1994); State v. Jamerson, 708 A.2d 1183, 1189, 1195 (N.J. 1998); People v. Eberle, 697 N.Y.S.2d 218, 219 (N.Y. App. Div. 1999); Bond v. Commonwealth, 311 S.E.2d 769, 772 (Va. 1984).

> inadmissible under rules similar to our [Iowa corollary to FED. R. EVID. 702].[38]

The court also held that such opinions are not admissible because they "are not sufficiently based on scientific, technical, or specialized knowledge . . . ."[39]

Consistent with those rationales, *Tyler* announced a case-by-case approach to admissibility:

> Having surveyed the authority on the issue, we conclude there are circumstances when a medical examiner's opinions on cause or manner of death may assist the jury, even when such opinions are based in part on witness statements or information obtained through police investigation. However, our review of the caselaw confirms there is no bright-line rule for determining whether a medical examiner may opine on cause or manner of death when his or her opinions are based, in whole or in part, on such information. Instead, whether a medical examiner's opinion on cause or manner of death is admissible depends on the particular circumstances of each case. For example, when a medical examiner bases his or her opinion of cause or manner of death largely on witness statements or information obtained through police investigation, such opinions would ordinarily be inadmissible under [Iowa corollary to FED. R. EVID. 702] because they would not assist the trier of fact.[40]

While several courts have followed the *Tyler* approach, to our knowledge no court has adopted a *per se* rule excluding all manner-of-death (or injury) testimony. The time has come for just such a rule.

III. TOWARD A *PER SE* RULE OF EXCLUSION FOR OPINION EVIDENCE ON "MANNER" (AND A CASE-BY-CASE RULE ON "CAUSE")

Considering whether manner evidence (and in some cases, even cause evidence) should be admissible requires consideration of the divergent purposes MEs serve as investigators, administrators, and data-collectors on one hand, and expert witnesses in court on the

38. *Tyler*, 867 N.W.2d at 156.
39. *Id.* at 157.
40. *Id.* at 162.

other, as well as the fundamental structure of the trial process that the Rules of Evidence protect. Forensic pathologists have strenuously argued that, to fulfill their statutory duties as MEs to determine cause and manner of death, they must be able to base their opinions on unlimited case information—both scientific or medical evidence and ordinary lay evidence.[41] When MEs are performing their statutory duties to complete death certificates or to classify deaths for epidemiological records or statistical purposes, there is usually no reason to contest the consideration of contextual information in that process. Prohibiting them from considering all relevant evidence would undermine their statutory and administrative roles, just as barring juries from hearing anything but scientific or medical evidence would compromise juries' ability to find facts at trials. But note that the governmental-function rationale applies to MEs, like juries, only in those circumstances where they are the ultimate factfinders. When performing bureaucratic and public health data-collection duties, the ME is indeed the factfinder, just as the jury is in the courtroom. As a death investigator, the ME should have access to all available relevant and helpful information, or at least there is no sound policy reason to deny the ME access to that information—although, as noted below, even then the ME still should grapple with the challenges posed by cognitive biases introduced by context information.[42]

When the ME ventures into the courtroom, however, the standard of proof, the allocation of fact-finding authority, and the public interest change significantly. In the courtroom, the ME no longer is the factfinder. As an expert witness, her license in the courtroom is much more limited: to provide *specialized* knowledge drawn from her unique expertise that the jury cannot access or comprehend, without the help of an expert.[43] In that context, where a person's liberty is at risk of state deprivation, the Constitution has designated the jury as the factfinder. The jury is charged with considering all relevant (and otherwise admissible) evidence, deciding ultimate questions of fact, and concluding whether the prosecution's theory on manner of death is right.[44]

Accordingly, a tension arises whenever a medical expert analyzes and opines about both cause and manner of death or injury, and in

41. *See* William R. Oliver et al., *Cognitive Bias in Medicolegal Death Investigation,* 5 ACAD. FORENSIC PATHOL. 548, 549 (2015); William R. Oliver, *Manner Determination in Forensic Pathology,* 4 ACAD. FORENSIC PATHOL. 480, 483 (2014).

42. *See infra* notes 46, 49 and accompanying text.

43. *See* FED. R. EVID. 702.

44. *See generally* U.S. CONST. amend. VI; Apprendi v. New Jersey, 530 U.S. 466, 476–77, 490 (2000).

doing so relies upon contextual (non-medical) evidence to support a manner conclusion. It is a tension that raises concerns for the legal system on several fronts. First, exposure to such context information exacerbates the risk of error from innate cognitive biases. Second, because assessment of such ordinary—and often vigorously contested—context evidence is not scientific but subjective, untested, untestable, and often inaccurate, it fails the reliability standards demanded by *Daubert* and Rule 702.[45] Third, allowing the ME to testify to manner of death is not "helpful" to the jury as required by Rule 702, and even worse, constitutes vouching for the prosecution's preferred theory of the facts and inferences and the credibility of witnesses. Fourth, it creates a risk that it will improperly allow smuggled opinions on a human actor's mental state, in violation of Rule 704(b). Finally, it permits unlawful usurpation of the role of the jury alone to determine the guilt of the accused. We take up each of these considerations in turn and demonstrate how each is best addressed by a *per se* ban on manner opinion evidence, and a case-by-case approach to cause evidence.

A. Working Around the Cognitive Bias Conundrum

Cognitive bias, and in particular context bias, now is widely recognized as a serious threat to the accuracy and reliability of forensic sciences across many disciplines (just as it is recognized as a potential source of significant error in all academic scientific research and laboratory testing).[46] The NAS put it bluntly: "The findings of forensic science experts are vulnerable to cognitive and contextual bias."[47] These biases, the NAS explained, "are not the result of character flaws; instead, they are common features of decision making, and they cannot be willed away."[48]

Cognitive bias refers to the wide range of cognitive shortcuts or inclinations that can serve us well in most contexts but can lead us astray in disastrous ways in others. The cognitive biases that are widely addressed in the forensic science and criminal justice literature include confirmation bias, hindsight bias, outcome bias, motivated reasoning, group-think, role effects, cognitive dissonance,

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45. *See* discussion *infra* Part III.B.

46. *See* Saul M. Kassin et al., *The Forensic Confirmation Bias: Problems, Perspectives, and Proposed Solutions*, 2 J. APPLIED RSCH. MEMORY & COGNIT. 42 (2013); D. Michael Risinger et al., *The* Daubert/Kumho *Implications of Observer Effects in Forensic Science: Hidden Problems of Expectation and Suggestion*, 90 CALIF. L. REV. 1, 8 (2002).

47. NAS REPORT, *supra* note 2, at 8 n.8.

48. *Id.* at 122.

anchoring effects, availability bias (or heuristic)—and more.[49] All of these can affect ME offices, both because education in one field does nothing to eliminate human cognitive biases, and because ME offices are closely allied with police agencies and prosecutors.

Additionally, another cognitive bias has particular relevance to the forensic science disciplines, including forensic pathology and other medical specialties: context bias.[50] Context bias refers to the risk that an analyst's exposure to task-irrelevant information can bias the way the analyst interprets case data, especially when those data are ambiguous.[51] If, for example, a fingerprint examiner learns that the suspect was seen in the area of the crime, or that the suspect made incriminating statements, that knowledge might lead the examiner, even unwittingly, to see similarities between the crime scene latent prints and the suspect's rolled print and to declare a "match" when the analyst might not have otherwise. The psychological research on this is extensive, rendering it beyond legitimate dispute that such cognitive biases are ubiquitous and dangerous, and apply to all humans, including experts operating in their fields of expertise.[52] That includes medicine.[53]

When it comes to medical opinions related to cause and manner of death or injury, context bias presents a unique challenge. For many of the pattern-matching forensic disciplines (*e.g.*, fingerprints, firearms & toolmarks, bitemarks, handwriting comparison, fiber and hair comparison, shoe and tire impressions, drug spectra, and the like), discerning what evidence is task-relevant and what is task-irrelevant is often straightforward and non-controversial.[54] For example, when pattern analysts compare evidence from the crime scene to evidence from the defendant, they usually need to

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49. *See* Keith A. Findley & Michael A. Scott, *The Multiple Dimensions of Tunnel Vision in Criminal Cases,* 2006 WIS. L. REV. 291, 307–22 (2006); Silvia Mamede et al., *Effect of Availability Bias and Reflective Reasoning on Diagnostic Accuracy Among Internal Medicine Residents,* 304 [J]AMA 1198, 1198 (2010); Risinger et al., *supra* note 46, at 12–21.

50. *See* Itiel Dror et al., *Cognitive Bias in Forensic Pathology Decisions,* 66 J. FORENSIC SCIS. 1751, 1751–52 (2021); NAS REPORT, *supra* note 2, at 8 n.8.

51. *See* Risinger et al., *supra* note 46, at 26.

52. *See* DAN SIMON, IN DOUBT: THE PSYCHOLOGY OF THE CRIMINAL JUSTICE PROCESS 21 (2012) [hereinafter SIMON, IN DOUBT]; Itiel E. Dror, *Cognitive and Human Factors in Expert Decision Making: Six Fallacies and the Eight Sources of Bias*, 92 ANALYTICAL CHEMISTRY 7998, 7999 (2020); Jeff Kukucka et al., *Cognitive Bias and Blindness: A Global Survey of Forensic Science Examiners*, 6 J. APPLIED RSCH. MEMORY & COGNIT. 452, 452 (2017).

53. NAT'L ACADS. SCIS., ENG'G, & MED., IMPROVING DIAGNOSIS IN HEALTH CARE 56–58 (Erin P. Balogh et al. eds., 2015); Joseph J. Lockhart & Saty Satya-Murti, *Diagnosing Crime and Diagnosing Disease: Bias Reduction Strategies in the Forensic and Clinical Services*, 62 J. FORENSIC SCIS. 1534, 1537 (2017) (noting that in clinical medicine, "[d]iagnostic errors can, and do, occur in response to extraneous contextual information").

54. *See* Dan Simon, *Minimizing Error and Bias in Death Investigations*, 49 SETON HALL L. REV. 255, 276–77 (2019).

know little or nothing more than what they can see in the disputed evidence itself and in the known sample used for comparison—the fingerprint patterns, the shoe or tire marks, etc. There is no need for them to know about the prosecution's theory of the case, or about evidence of purported confessions, witness statements, or any of the other ordinary evidence the jury will be called upon to consider. Knowledge of that information does not help them determine, from a scientific or expertise-related perspective, whether the patterns match. Indeed, it can lead them to see patterns that might not be there.

Forensic pathology and other medical specialties are different. For them, the exposure to background information creates a true "conundrum," to use Professor Dan Simon's term.[55] On the one hand, non-medical evidence of unknown reliability can skew an ME's interpretation of medical information, rendering the ultimate opinion vulnerable to error, just as contextual information can taint interpretations made by other forensic analysts. On the other hand, as forensic pathologists correctly remind us,[56] background information[57] is at the same time essential to an informed death investigation, particularly one charged with determining manner of death.[58] First, the medical profession rightly considers contextual information in general: medical history, family history, diet, habits, and so on. Second, forensic pathology specifically seeks background information such as the victim's or suspect's behavior leading up to the incident, the presence of non-medical physical evidence, the physical setting in which the body was found, the statements of witnesses, etc. This information may be important to determining manner of death in the ME's administrative and data-collecting roles. Without it, for example, it might be impossible for an ME to decide for those purposes whether a fatal dose of poison was ingested voluntarily (suicide), mistakenly (accident), or through coercion or intervention of a third party (homicide). Moreover, as Dan Simon has observed, "background information also plays an important facilitative role in death examinations by way of enabling

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55. *Id.* at 256.

56. Oliver et al., *supra* note 41, at 549.

57. In death investigations, "background information" is often understood as "any information that is not derived directly from the postmortem medical testing or autopsy." Simon, *supra* note 54, at 267–68.

58. *See* Lockhart & Satya-Murti, *supra* note 53, at 1537 ("Complex medical decisions are, at once, both dependent and also vulnerable to raw contextual information."); Simon, *supra* note 54, at 293 ("[A]llowing an unfettered flow of background information is likely to skew some investigations away from reaching accurate conclusions, but blocking access to that information is bound to stifle and skew other investigations.").

the generation of investigative hypotheses without which the process is unlikely to succeed."[59]

Debate rages about how to address this conundrum. Some scholars call for implementation of case management systems, such as those being adopted in other forensic disciplines, to blind MEs from non-medical or background information that might taint their analyses.[60] In particular, for many disciplines, linear sequential unmasking is often proposed to address context bias,[61] and is indeed being implemented in some prestigious forensic laboratories.[62] Linear sequential unmasking employs a case manager to screen information before it is released to the analyst; the manager sequentially releases background information only as needed to complete the analysis, so that early steps in the process can be analyzed without risk of bias from that information.[63]

Death investigators, however, have pushed back strenuously, arguing that such limitations are unworkable in a field as "complex, sprawling, iterative, and open-ended" as death investigations.[64] They contend that, in order to determine cause and manner of death, all *case*-relevant information is *task*-relevant for the ME; that to deprive MEs of any such information would create more errors than it would prevent; and, that to deny physicians such information is tantamount to limiting their ability to practice medicine.[65] Indeed, in death investigations, because investigators explicitly and intentionally factor non-medical background information into their conclusions, exposure to background information is often not so much a matter of cognitive bias as it is a feature of the "legal and normative aspects of death examination."[66]

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59. Simon, *supra* note 54, at 256.

60. *See, e.g.*, Itiel E. Dror & Jeff Kukucka, *Linear Sequential Unmasking–*Expanded *(LSU-*E*): A General Approach for Improving Decision Making as Well as Minimizing Noise and Bias*, 3 FORENSIC SCI. INT'L: SYNERGY, 100161, 2021, at 4, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8385162/pdf/main.pdf.

61. *Id.* at 1; *see also* Dan E. Krane et al., Letter to the Editor, *Sequential Unmasking: A Means of Minimizing Observer Effects in Forensic DNA Interpretation*, 53 J. FORENSIC SCIS. 1006, 1006 (2008); Itiel E. Dror et al., Letter to the Editor, *Context Management Toolbox: A Linear Sequential Unmasking (LSU) Approach for Minimizing Cognitive Bias in Forensic Decision Making,* 60 J. FORENSIC SCIS. 1111, 1111 (2015).

62. *See* Simon, *supra* note 54, at 260.

63. *See* Dror & Kukucka, *supra* note 60, at 2.

64. Simon, *supra* note 54, at 255; *see also id.* at 261 (summarizing the opposition by death investigators to any context management).

65. William R. Oliver, *Commentary on: Lockhart JJ, Satya-Murti S. Diagnosing Crime and Diagnosing Disease: Bias Reduction Strategies in the Forensic and Clinical Sciences*, 63 J. FORENSIC SCIS. 651, 651 (2017); Oliver et al., *supra* note 41, at 549. *See generally* Lockhart & Satya-Murti, *supra* note 53, at 1537.

66. Simon, *supra* note 54, at 275.

In a thoughtful response to those objections, Dan Simon has proposed a compromise. Simon suggests a system in which death investigators have unfettered access to general background information in most cases, but utilize a structured context management system to minimize context biases in a very small number of what he calls "acute cases"—those in which the case is "headed for criminal proceedings, in which the costs of investigative errors are particularly high and the prospect of incomplete or inconclusive investigations is more tolerated, and in which the investigative task is non-obvious."[67] Even for those rare cases, he would only blind the MEs to some background information: "death examiners shall continue to be exposed to the medical history and death scene findings, but not to the less reliable types of information."[68]

There is much to be said for Simon's proposal, at least as a starting point for taking seriously the challenges posed by context biases. At the very least, Simon's work reminds us of the potential for error from unreliable context information even in the death investigator's bureaucratic role in recording cause and manner of death—a risk that the death investigation community has not yet been willing to acknowledge or address in a serious way.

But our purpose here is not to weigh in on the best process for generating cause and manner determinations for data collection, statistical, and public policy purposes. Our purpose instead is to highlight an obvious pathway forward for resolving this conundrum *in the courtroom*. It is a pathway, in fact, offered both by Simon and the chorus of forensic pathologists who object to any context management systems, but that gets lost in the more heated debates about whether context bias is a serious problem and about how context bias might be managed. The solution: regardless of what MEs and coroners do in their own domain pursuant to their statutory duties, their testimony in the courtroom should be limited uniformly to offering medical-evidence-based expertise, which in every case would exclude opinions about manner of death (or other injury). Those opinions always entail heavy reliance on non-medical, or background, information.

Simon makes the point this way:

> It must not be overlooked that manner of death determinations have no rightful place in criminal proceedings. As stated above, in their public health capacity, forensic pathologists serve as the effective final decision maker and

67. *Id.* at 264.
68. *Id.*

> are free to use low standards of proof in reaching their decisions, whereas in the criminal domain the final decision making authority is vested in the jury and should be made using the high threshold of beyond a reasonable doubt.[69]

Simon also notes: "Recall that the critical manner of death determination—classifying a death as a homicide—is strictly for the jury to make."[70]

On this point, the mainstream forensic pathology community appears to *agree* with Simon (and us). Dr. William Oliver and his colleagues, for example, argue that it is a mistake to "ignore what manner determination is, and why it is done. Manner determination is not a legal determination. It is a public health classification for statistical analysis. It is absurd to pretend that manner determination has inherent legal meaning, and it is a misuse of manner to act as if it does."[71] Oliver elaborates: "[I]t is inappropriate to ignore the actual purpose of manner and claim that manner determination should be changed so that it can be misused more egregiously."[72] Similarly, in 2021, eighty-six prominent forensic pathologists and death investigators signed a letter to the editor of the *Journal of Forensic Science* in which, among other things, they addressed what they called the "misuse" of manner determinations as evidence in court. They wrote: "The fact that this tool for aggregate statistics often does not fit well in court is not a criticism of manner determination by forensic pathologists. It is instead a criticism of misuse of manner determination by the courts."[73]

We think this criticism is well-founded and urge courts to listen to what forensic pathologists are saying about their own manner determinations. Hence, as Simon put it, "lawmakers and judges . . . are strongly encouraged to alter this legal situation and purge the criminal process of all references to manner of death determinations."[74] In the following sections, we explain why this approach indeed follows unavoidably from existing evidentiary rules and principles.

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69. *Id.* at 294.
70. *Id.*
71. Oliver et al., *supra* note 41, at 552.
72. *Id.* at 553.
73. Brian Peterson et al., Letter to the Editor, *Commentary on: Dror IE, Melinek J, Arden JL, Kukucka J, Hawkins S, Carter J, et al. Cognitive Bias in Forensic Pathology Decisions*, 66 J. FORENSIC SCIS. 2541, 2542 (2021).
74. Simon, *supra* note 54, at 296.

B. The Unreliability and Non-Scientific Nature of Manner Determinations

Admissibility of expert opinion evidence is governed in federal and most state courts in the U.S. by Federal Rule of Evidence 702 or its state corollaries, as interpreted in the *Daubert* trilogy of Supreme Court cases.[75] At bottom, the rules demand that trial judges play a rigorous gatekeeping role to screen out purported scientific and technical opinion evidence if it lacks sufficient reliability or is not helpful to the trier of fact. In a nutshell, *Daubert* and Rule 702 require that courts ensure that expert opinion evidence meet the following requirements:[76]

> 1. The expert must have expertise, as demonstrated "by knowledge, skill, experience, training, or education[.]"[77]
>
> 2. The opinion must be based on principles or methods that are sufficiently reliable to constitute good science,[78] or, if not science, areas of expertise that bear sufficient indicia of reliability to demonstrate (a) a reliable process, (b) "sufficient facts or data," and (c) reliable application of the process to those facts and data.[79]
>
> 3. The expert's opinion must "help the trier of fact to understand the evidence or to determine a fact in issue[.]"[80]

Expert testimony on manner runs afoul of all three requirements in virtually every instance (and occasionally but less frequently in cause determinations as well, as exemplified by the *Tyler* case[81]). Looking at the first two requirements—qualified expertise, and reliable processes and application of those processes—it is clear that,

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75. Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141–42 (1999); Gen. Elec. Co. v. Joiner, 522 U.S. 136, 138–39 (1997); Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579 (1993).

76. Rule 702 provides in full:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:
> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
> (b) the testimony is based on sufficient facts or data;
> (c) the testimony is the product of reliable principles and methods; and
> (d) the expert has reliably applied the principles and methods to the facts of the case.

FED. R. EVID. 702.

77. FED. R. EVID. 702(a).

78. *See Daubert*, 509 U.S. at 589–95 (discussing the components required to qualify as good science).

79. FED. R. EVID. 702(b), (c), (d).

80. FED. R. EVID. 702(a).

81. 867 N.W.2d 136, 177 (Iowa 2015); *see* discussion *supra* Part II.

as a group, MEs are qualified as medical experts and employ valid and reliable medical procedures, for many purposes.[82] Their education, training, and experience clearly make them experts in medical matters. And no one doubts that modern medicine applies scientifically valid procedures and relies upon adequate data for many diagnostic purposes, despite sometimes alarming rates of error in virtually all types of diagnoses.[83] But that conclusion about expertise and reliability applies only to determinations that depend on the scientific and medical principles and training that physicians bring to the task.

Manner determinations *always* exceed these limits. Manner determinations, almost by definition, require consideration of non-medical or background information. Cause can often be determined largely, if not exclusively, by examination of the body and laboratory analysis of fluids and tissue obtained from the body. The autopsy and associated medical tests can identify blunt force trauma, or stab wounds, or illnesses, or the like. But *how* that blunt force trauma was inflicted requires much more—it requires ordinary background information and other direct or circumstantial evidence. A physician can know from examination of the body that a gunshot wound caused death. But the physician cannot know from examination of the body alone whether that gunshot wound was the result of an accident, suicide, or homicide. The Ellen Greenberg case, described at the outset of this Article, illustrates the point vividly. One might think that nearly two-dozen stab wounds, including through the clothing and in the back of the head, would alone be enough to permit a physician to determine this was a homicide. But it took context information—the fact that the door was locked from the inside and snow on the balcony was undisturbed—to lead the ME to change the manner determination (whether correctly or incorrectly) to suicide.

The problem is this: interpreting such background or context information is an ordinary task for fact-finders that does not require—and is not even advanced by—medical training. Hence, while an ME might be well qualified to render opinions based on medical evidence, she has no special training or qualifications that make her an expert on interpreting things like the meaning of a

82. The third requirement is our next point. *See* discussion *infra* Part III.C.

83. *See, e.g.*, James Anderst et al., *Using Simulation to Identify Sources of Medical Diagnostic Error in Child Physical Abuse*, 52 CHILD ABUSE & NEGLECT 62, 66 (2016); Mark L. Graber, *The Incidence of Diagnostic Error in Medicine*, 22 BRIT. MED. J. ii21, ii25 (2013); Gordon D. Schiff et al., *Diagnostic Error in Medicine: Analysis of 583 Physician-Reported Errors*, 169 ARCHIVES INTERNAL MED. 1881, 1883 (2009).

locked door or undisturbed snow. Quite simply, analyzing such evidence exceeds the expertise of the ME.

Likewise, considering such evidence moves the determination outside the categories of good science or reliable processes demanded by Rule 702 and *Daubert*. There is simply no science behind figuring out what to make of the locked door or the undisturbed snow. And there is no medical data, nor any reliable medical process, to rely upon to aid in the interpretation of this information. It is for this reason that some courts on a case-by-case basis exclude some manner determinations that rely heavily on such information.[84] What is required is ordinary reasoning from evidence to a conclusion—just what juries are called upon to employ themselves.

Importantly, again, this observation about manner determinations—that they are unscientific and bear no special indicia of reliability—is one that forensic pathologists themselves embrace. Pathologist William Oliver surveyed MEs and found that "most medical examiners accept that their determinations of manner are made with uncertainty."[85] He elaborates that, "[b]ecause [manner] is a matter of weighing information for which there may not be much certainty, virtually every serious discussion of manner accepts that in many cases there is no 'right' or 'wrong' answer."[86] He explains that the reason MEs accept unreliability or uncertainty in their manner determinations is because the manner determination is not intended to resolve individual cases, but is "to allow the collection of aggregate statistics from death certificates for public health purposes."[87] For that purpose, in most cases the cause and manner of death are obvious and non-controversial. Only the exceptional case is ambiguous. And of these, even smaller numbers are prosecuted as crimes, necessitating ME testimony. But, Oliver points out, for statistical purposes, even "if every single case where the manner is disputed had been incorrectly determined by the

84. *See, e.g.*, *Tyler*, 867 N.W.2d at 177; cases cited *supra* note 37.

85. William R. Oliver, *Intent in Manner Determination*, 2 ACAD. FORENSIC PATHOL. 126, 133 (2012).

86. Oliver et al., *supra* note 41, at 552. Consider an example that Oliver does not use by recurring to our example of the gunshot wound assigned as cause of death. In fact, sometimes it will not be clear on medical principles and training alone whether a gunshot wound was ante-mortem, post-mortem, or peri-mortem. But if medical examination suggests no other cause of death, for statistical and administrative purposes, a medical examiner reasonably could conclude that it was ante-mortem and therefore caused death. Combined with other, non-medical context information, that same reasonable supposition might lead to a manner determination of homicide. Again, that would be fine for many routine purposes outside a courtroom. But within the courtroom, the manner determination would be two-fold separated from what medical science itself could determine in such a case.

87. Oliver et al., *supra* note 41, at 552.

medical examiner or coroner's pathologist, it would be statistically irrelevant. From the perspective of the purpose of manner determination, it simply *does not matter* whether or not some individual case in litigation is determined incorrectly."[88]

This is true as a matter of statistics. But, of course, for the criminal justice system, getting the individual case right is *all* that matters. That is why Oliver calls manner-of-death testimony in litigated cases an "off-label use[]."[89]

Oliver is not at all alone in that view. An influential *Guide to Manner Determination* published by the National Association of Medical Examiners notes: "It must be realized that when differing opinions occur regarding manner-of-death classification, there is often no 'right' or 'wrong' answer or specific classification that is better than its alternatives."[90] As we noted above, in 2021, eighty-six prominent death investigators, primarily forensic pathologists, signed a published letter making the same points.[91] They wrote:

> Manner determination is not a "scientific" determination. It is a cultural determination that places a death in a social context for the purpose of public health statistics. Manner determination is by no means uniform in practice—for example, at least one large office deems death by drug overdose as "undetermined" with respect to manner, while many others by convention deem such cases "accidental." The criteria are guided by policy promulgated by the National Association of Medical Examiners (NAME) and the Centers for Disease Control and Prevention (CDC). This is why the NAME guidelines explicitly acknowledge that there is no "right" answer in many manner determinations, and that the goal is consistency rather than some nonexistent criteria for correctness. Manner determination is designed to assist public health agencies and the CDC, and it is they who determine what should and should not be considered relevant. The fact that this tool for aggregate statistics often does not fit well in court is not a criticism of manner determination by forensic

88. *Id.* at 553.
89. *Id.*
90. HANZLICK ET AL., *supra* note 4, at 2.
91. Peterson et al., *supra* note 73, at 2542–43.

> pathologists. It is instead a criticism of misuse of manner determination by the courts.[92]

Hence, it will not do to conclude that manner determinations are admissible, as many courts do reflexively, simply because MEs are assigned responsibility by statute to determine both cause and manner of death.[93] That rationale wholly ignores the critical question of *why* or *toward what end* MEs are charged with that responsibility. And the MEs themselves tell us, it is for bureaucratic statistic-keeping, the administrative necessity of death certificates (which then have several routine, collateral uses for funeral homes, insurance claims, probate, cessation of public benefits, and so on), and public health and policy reasons—not for generating testimony in contested court cases.

In those contested court cases, too, the epistemological problem hidden in the manner determination becomes easiest to see. All or most of the ordinary, contextual evidence that the ME folds into a manner determination comes from law enforcement officers or prosecutors. These are the natural allies of and frequent collaborators with medical examiners' offices. The ME, the police, and prosecution are local government employees (or a regularly consulted prosecution expert, in the case of some forensic pathologists). They work in harness frequently. For both professional and often personal reasons, then, the risk of a bandwagon or familiarity bias—or just uncritical acceptance of casual information—is very high when an ME receives ordinary, contextual evidence from others in the investigative and prosecutorial apparatus.

Moreover, even an objective ME, or one given to critical assessment, lacks the tools that juries and judges have at their disposal in considering this sort of ordinary evidence, which again they are

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92. *Id.* at 2541–42; *see also* Hawes & Mileusnic-Polchan, *supra* note 20, at 22 ("A medicolegal suicide is a classification of professional opinion based on forensic investigative information after a complete investigation. It is never possible to 'second-guess' what was in a decedent's mind; we must rely on explicit or implicit evidence of intent, while acknowledging that there may potentially be more than one interpretation of some evidence."); Panella, *supra* note 26, at 25 ("For some manners of death, there exists nonuniformity within the medical examiner community with different opinions predicated upon various philosophical views, training or office policy.").

93. *See, e.g.*, People v. Yost, 749 N.W.2d 753, 786 (Mich. Ct. App. 2008) (per curiam) (finding it significant that medical examiners are required by statute to investigate both the cause and manner of death, and thus, "medical examiners must routinely investigate and determine whether the manner of death for a particular person was suicide"); People v. Unger, 749 N.W.2d 272, 301 (Mich. Ct. App. 2008) (noting that MEs are required by statute to investigate both cause and manner of death, and concluding that therefore "it is not beyond a forensic pathologist's area of expertise to offer testimony in the courts of this state concerning both the cause of death and the manner of death").

as equipped as the medical expert to assess. All of the time-honored safeguards of the trial process—the jurors' oath, the witnesses' oath, confrontation through cross-examination, the rules of evidence, and the adversary's opportunity to introduce competing or contrary evidence—are afforded the fact-finder in a courtroom. None of them are available to the ME, even if she would be inclined to use them. The ME either accepts on faith information from law-enforcement colleagues or, at best, has not the means that jurors and judges have to test that information.

Yet, because that ordinary, contextual evidence often is barely acknowledged or buried in the final opinions of the ME or other medical expert on manner, the implicit determination that this information is true, accurate, or at least highly reliable is invisible. The ME rarely is called upon to answer or explain how she knows what she claims to "know." Provenance is presumed, rather than tested or even addressed honestly.

That epistemological problem finds no justification in the evidentiary rule that experts may rely on information that other qualified experts in the same field reasonably use as a basis of their opinions.[94] That relaxed rule of information-gathering and reliance for experts is about admissibility, not about epistemology. Not all the information that the expert "has been made aware of" beyond what he personally observed need be admissible, or true.[95] But nowhere does the rule suggest that its reliability or veracity is unimportant or may be presumed or overlooked. To the contrary, "facts or data" that otherwise would be inadmissible may be disclosed to the jury only if their probative value in helping to evaluate the opinion substantially outweighs their prejudicial effect.[96]

There is the rub. As an epistemological matter, the ME cannot meet the first requirement that this contextual information really consists of "facts." Even if a jury could find that the information is factual, it has little or no probative value when embedded in the very opinion that the jurors must evaluate, for they would be the superior assessors of that contextual information in the first place. The ME has no better training in that role than the jurors or judge, and the latter has the better tools. They also may not labor with the same cognitive biases that familiarity and professional alliance breed.

It is time, then, that legal rule makers and courts take forensic pathologists at their word: manner determinations do not fit the

94. *See* FED. R. EVID. 703.
95. *Id.*
96. *Id.*

expertise and reliability paradigms established by Rule 702 and *Daubert*. And that applies across the board, in all litigated cases in which manner is at issue. For such manner determinations are not just sometimes dependent on context evidence of unknown reliability, or divergent policies, cultural norms, and standards, but in every case, at least in every disputed case that goes to litigation.

To understand why, consider again what the pathologists themselves have said: "Manner determination is not a 'scientific' determination. It is a cultural determination that places a death in a social *context* . . . ."[97] Where does that context come from? Either from non-scientific context information, or from cultural norms—the very stuff juries, not experts, are supposed to consider and apply in the courtroom.[98] Without context evidence, except perhaps in the rarest of circumstances, no medical expertise can tell anyone, MEs included, whether any death was inflicted by some other person (*i.e.*, a homicide).

An analogy to the pattern-matching forensic disciplines can help make this point. Pattern-matching (fingerprint, shoeprint, tire print, firearms, bitemark, and the like) analysts can compare patterns on evidence from the crime scene and evidence from the accused and find similarities that make it possible (or even likely) that the suspect was the source of the crime-scene evidence. But a determination that the suspect *was* the source always (or nearly always; we cannot rule out every possible odd case) requires additional context information—information that exceeds the analyst's expertise—to rule out the possibility that the observed similarities were merely a coincidence. Was the accused in the area at the time of the crime, or locked up or otherwise incapacitated? Did the suspect have a motive? Did other evidence place the suspect at the scene? William Thompson explains that analyst opinions about "source probabilities" are problematic because they are "based partly on the examiner's analysis of the physical characteristics of the items being compared, and partly on the examiner's assumptions or conclusions about the strength of other evidence that bears on whether the items have a common source."[99]

Bayesian statistical analysis also can help us understand this point. Again, the insights of forensic pathologist William Oliver are

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97. Peterson et al., *supra* note 73, at 2541–42.

98. *See* Keith A. Findley, *Innocence Protection in the Appellate Process*, 93 MARQ. L. REV. 591, 624 (2009); D. Michael Risinger, *Unsafe Verdicts: The Need for Reformed Standards for the Trial and Review of Factual Innocence Claims*, 41 HOUS. L. REV. 1281, 1291 (2004).

99. William C. Thompson, *How Should Forensic Scientists Present Source Conclusions?*, 48 SETON HALL L. REV. 773, 809 (2018).

instructive. In arguing that contextual information is needed for an ME to make a manner determination, Oliver draws on Bayes's Theorem.[100] In simple terms, Bayes's Theorem teaches that, to make an ultimate determination—what Bayesians call the "posterior odds" of a fact in question—the decisionmaker must take the "prior odds"—that is, the assessed likelihood of the fact in question based on other, pre-existing evidence (*e.g.*, context evidence) and multiply it by the likelihood ratio created by new evidence under consideration. Likelihood ratios are, again in simplified terms, the ratio of the likelihood of seeing a particular piece of evidence if one hypothesis (say, the prosecutor's hypothesis, or the guilt hypothesis) is true divided by the likelihood of seeing the evidence if an alternative hypothesis (the defense hypothesis, or the not-guilty hypothesis) is true.[101]

In the ME context, the prior probability can be understood as the likelihood that the death was a homicide given the context or background information in the case. The likelihood ratio can then be understood as the strength of the medical evidence, expressed as the likelihood of seeing the particular medical findings if the death was a homicide divided by the likelihood of the medical findings if the death was not a homicide. In the medical context, Oliver explains it this way:

> Bayes' theorem notes that the posterior probability of a diagnosis (i.e., the probability of a diagnosis given some evidence) is a function of the prior probabilities of the presence of the diagnosis regardless of the evidence, and the presence of the evidence regardless of the diagnosis . . . . These prior probabilities are cohort-specific. History and context are the primary ways in which these cohorts are identified.[102]

This analysis thus makes clear that determining manner of death—that is, reaching an ultimate opinion (in Bayesian terms, assessing posterior odds) on manner of death—*necessarily* requires consideration of prior odds, which unavoidably is based on context evidence. As one of us put it in the context of analyzing broadly the role of forensic expert evidence:

> It is the role of the legal fact-finder (judge or jury) to reach ultimate conclusions about guilt or absence of guilt—what

100. Oliver, *supra* note 65, at 651.
101. *See id.*
102. *Id.*

> we might think of as an expression of the posterior odds. Theoretically, the legal fact-finder will embark on this task by considering the available relevant evidence in the case to intuit some belief in the prior odds of the defendant's guilt. To that, the testimony of the expert (the forensic analyst) might add an evaluation of the evidence, i.e., a likelihood ratio—that is, an assessment of the likelihood of seeing the particular evidence (the fingerprints, the bullet striations, or the like) if the defendant is the source—which the fact-finder might use intuitively as a multiplier, to arrive at the posterior odds. Breaking down the decision points required to assess the evidence in this way makes it clear that determining the prior odds and the posterior odds is, or least should be, a task reserved for the legal fact-finder, not the forensic analyst. The analyst only adds the likelihood ratio—the likelihood of seeing the particular forensic patterns if the defendant is the source.[103]

Put more simply, ME testimony about manner of death inevitably implicates an opinion about prior odds and posterior odds, and thereby necessarily incorporates ordinary evidence that exceeds the reliability assurances of the expert's expertise and scientific processes.

C. Unhelpfulness to the Jury

The foregoing analysis should make it apparent that ME testimony on manner also fails Rule 702 and *Daubert* for another reason, the *Daubert* framework's third requirement: it is not helpful to the jury.[104] Recall that, under Rule 702, even if an expert has reliable expertise, her opinions will be admissible only if they "will help the trier of fact to understand the evidence or to determine a fact in issue."[105] Certainly, medical expertise can help the jury understand the injuries or illnesses from which an individual suffers, and even help the jury understand whether those medical findings are consistent with homicide or some other action by an accused individual. But the manner determination itself—the conclusion that this was or was not a homicide (or other criminal act)—is different. As the foregoing analysis demonstrates, that determination can only be made on the basis of the medical evidence in combination with the

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103. Findley, *Misuse of Statistics*, *supra* note 10, at 647–48.
104. *See* discussion *supra* Part III.B.
105. FED. R. EVID. 702(a).

non-medical context evidence. But because the jury is fully capable of assessing that non-medical context evidence—the meaning of the locked door or the snow on the porch, or in another case the veracity of a confession or a suicide note or the relationship between victim and accused—expert testimony that depends upon that evidence simply is not helpful. The jurors can assess it themselves.

Because manner determinations *always* will depend at least in part on ordinary, non-medical evidence, determining manner always will include assessment of that ordinary evidence both by the ME and the jury. In effect, although usually unnoticed, that evidence will be double-counted, leading to inappropriate overweighting of the probative value of that evidence. Moreover, because the jury will often be unaware of the ME's reliance on that same ordinary evidence, or at least the extent of that reliance, the jury will be misled by an illusion of independence. To the jury, the ME's opinion will appear to be strong, independent, scientific corroboration of the jury's own assessment of the other evidence in the case, when in fact it may be to a large extent just the ME's own assessment of that same evidence as a thirteenth juror.[106] Moreover, "[t]his problem [is] exacerbated by the fact that when an 'expert' takes the witness stand, preferably in a white lab coat, her testimony takes on a 'mystic infallibility.'"[107]

Courts have widely recognized the lack of "helpfulness" as a basis for excluding some manner determinations when they depend on ordinary case evidence. As one court has put it, the general rule is that "if the court or jury is able to draw its own conclusions without the assistance of an expert opinion, the admission of such testimony is not only unnecessary but improper."[108] Typifying this, the Arizona Court of Appeals in *State v. Sosnowicz* held that the ME's manner opinion was inadmissible because the doctor did not rely "on any 'specialized knowledge' to classify the death as a 'homicide' rather than an 'accident.'"[109] Instead, "he based his conclusion that the death was a homicide on the circumstances reported to him by the police. Indeed, Dr. Stano was in no better position to determine the manner of death than was the jury who heard the actual trial testimony of witnesses and had the opportunity to evaluate their

106. For discussions of the double-counting problem and what Simon calls "pseudo corroboration," see Simon, *supra* note 54, at 273; SIMON, IN DOUBT, *supra* note 52, at 181; Findley, *Misuse of Statistics*, *supra* note 10, at 651.

107. Rebecca Brown & Peter Neufeld, *Chimes of Freedom Flashing: For Each Unharmful Gentle Soul Misplaced Inside a Jail*, 76 N.Y.U. ANN. SURV. AM. L. 235, 265 (2021) (quoting United States v. Addison, 498 F.2d 741, 744 (D.C. Cir. 1974)).

108. Cramer v. Theda Clark Mem'l Hosp., 172 N.W.2d 427, 429 (Wis. 1969).

109. 70 P.3d 917, 922 (Ariz. Ct. App. 2012).

credibility."[110] To this we add only that because manner determinations inevitably rely on such ordinary evidence in every case, as explained above, the opinions about manner are unhelpful in every case. Again, an ME's opinion about the medical findings will typically be helpful, but the combination of that expertise-based testimony with ordinary evidence that the jury is fully capable of assessing to reach a manner determination is not.

D. Improper Intrusion into the Core Functions of the Jury

All of this leads to yet another reason why opinion evidence on manner is impermissible: it inevitably intrudes improperly into the core functions of the jury. Courts uniformly carve out some matters that are so central to the jury's function that no witness is permitted to intrude into them.[111] Among these central matters is the rule that no witness may testify about the credibility of another witness, and accordingly "expert testimony is not admissible merely to bolster a witness's credibility."[112] The Iowa Supreme Court in *Tyler* explained the rule this way:

> Our system of justice vests the jury with the function of evaluating a witness's credibility. The reason for not allowing this testimony is that a witness's credibility "is not a 'fact in issue' subject to expert opinion." Such opinions not only replace the jury's function in determining credibility, but the jury can employ this type of testimony as a

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110. *Id.* The *Sosnowicz* Court went on to cite these additional cases for the same proposition:

> As have courts in other jurisdictions under similar circumstances, we conclude that the medical examiner's testimony was not admissible pursuant to Rule 702. *See, e.g.*, State v. Vining, 645 A.2d 20, 21 (Me. 1994) (determining that medical examiner's testimony that victim's death was a homicide and not an accident was erroneously admitted: "Her opinion was based solely on her discussions with the police investigators and therefore amounted to an assessment of the credibility and investigatory acumen of the police."); State v. Jamerson, 708 A.2d 1183, 1195 ([N.J.] 1998) (holding that the medical examiner "should not have been permitted to testify that this was a reckless homicide rather than an accidental killing" because "there were circumstances leading up to the accident that were within the understanding of the average juror"); Bond v. Commonwealth, 311 S.E.2d 769, 772 ([Va.] 1984) (concluding that the medical examiner's testimony was inadmissible: "The ultimate question was whether the decedent jumped intentionally, fell accidentally, or was thrown to her death. The facts and circumstances shown by the testimony of lay witnesses were sufficient to enable a jury to decide that question. The expert's opinion was based largely, if not entirely, upon the same facts and circumstances.").

270 P.3d 917, 923 (Ariz. Ct. App. 2012) (citations omitted in part). To the extent, therefore, that the manner determination might constitute an opinion that the defendant or another witness was lying, it runs afoul of this rule.

111. *See, e.g.*, *infra* notes 112–14 and accompanying text.

112. State v. Tyler, 867 N.W.2d 136, 154 (Iowa 2015).

> direct comment on defendant's guilt or innocence. Moreover, when an expert comments, directly or indirectly, on a witness's credibility, the expert is giving his or her scientific certainty stamp of approval on the testimony even though an expert cannot accurately opine when a witness is telling the truth. In our system of justice, it is the jury's function to determine the credibility of a witness.[113]

More fundamentally and ubiquitously, manner opinions run afoul of the rule that no witness may opine on the guilt or innocence of the accused, because that judgment is reserved for the jury. Courts consistently hold that the final judgment about guilt is reserved solely for the jury.[114] To the extent that determining manner of death effectively answers the triable issues related to guilt in a case, such testimony violates this rule.

An analogy to investigating police officers can help make this clear. MEs, as death investigators, serve a role much like that of police—they *investigate* to determine if a crime occurred, and if so, how it occurred. To do so, they may rely on expertise,[115] but they will also invariably and appropriately rely on ordinary evidentiary facts. Like MEs, police deploy their expertise and the facts they have amassed to reach a conclusion—an opinion—about criminality in the case. They then forward that conclusion and their opinions to the prosecutor when they refer the case for prosecution. But in the courtroom, police are limited to describing the facts they found in their investigation (or their expert opinions on issues short of guilt); they are never permitted to apply their investigative expertise to the facts they collected and offer an opinion about guilt or about whether a crime occurred.[116] It is that same principle that

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113. *Id.* (citations omitted) (quoting State v. Dudley, 856 N.W.2d 668, 676–77 (Iowa 2014)).

114. *See, e.g.*, United States v. Wright, 48 M.J. 896, 901–02 (A.F. Ct. Crim. App. 1998) ("Expert testimony may not be used to determine the credibility of the victim nor may an expert offer an opinion as to the guilt or innocence of the accused."); United States v. Thanh Quoc Hoang, 891 F. Supp. 2d 1355, 1362 (M.D. Ga. 2012) (quoting Montgomery v. Aetna Cas. & Sur. Co., 898 F.2d 1537, 1541 (11th Cir. 1990) ("Although Rule 704(a) abolished the ultimate issue rule, an expert 'may not, however, merely tell the jury what result to reach. A witness also may not testify to the legal implications of conduct.'"); Stephens v. State, 774 P.2d 60, 66 (Wyo. 1989) (quoting 3 CHARLES E. TORCIA, WHARTON'S CRIMINAL EVIDENCE § 566 (14th ed. 1987) ("[A] witness may not state his opinion as to . . . whether the defendant was guilty or innocent of the crime charged[.]")).

115. The expertise police and MEs bring to the task will be quite different, but they will each employ a type of expertise.

116. *See, e.g.*, State v. Steadman, 855 P.2d 919, 924 (Kan. 1993) (finding error to admit police testimony "that in their opinion the defendant was guilty of the crime and exhibited the pressure felt by a guilty person [and] other persons interviewed were not guilty of the crime . . ."); State v. Trinidad, 228 A.3d 1243, 1255–56 (N.J. 2020) (under the rule that "police

drives a rule against ME opinion evidence on manner determinations.

When performing her investigative and bureaucratic functions, the ME actually functions very much like—indeed, typically *in tandem with*—the police. Police officers—but never representatives of the defendant—are often present during the autopsy itself and help shape the ME's investigation.[117] Most of the background and context information MEs rely upon usually comes directly from law enforcement and social service agencies. While such information is often vigorously contested at trial, the ME, not being exposed to those contrary claims, might accept state agency versions of the evidence. But the jury, as fact finder, has an independent duty to assess information, and a far greater opportunity to hear competing information or interpretations of the evidence through contested trial proceedings, and may discount or reject police and ME investigative assumptions and assessments.

E. Violation of Rule 704(b)

This problem of usurping the jury's core functions now has a specific rule of evidence to underscore it. The Federal Rules of Evidence provide generally that "[a]n opinion is not objectionable just because it embraces an ultimate issue."[118] But this is not so when, in a criminal case, an expert witness proposes to opine on whether the accused did or did not have a mental state or condition that is an element of the crime charged or a defense to it. This the expert may not do, regardless his or her area of expertise.[119] Almost

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officers may not opine directly on a defendant's guilt in a criminal case," it was error for an officer to testify that his investigation led him to conclude that the defendant's actions "appeared to have been criminal"); State v. Black, 745 P.2d 12, 19 (Wash. 1987) ("No witness, lay or expert, may testify to his opinion as to the guilt of a defendant, whether by direct statement or inference.").

117.

> One systemic feature that appears to produce error . . . is that medical examiners long have been close allies of police and prosecutors—frequently partisans, not neutrals. Many allow the police, but not others, to observe autopsies and to influence critical steps in death investigation. They often talk freely to prosecutors, but only grudgingly—if at all—to defense lawyers. In a 2011 survey, 22 percent of medical examiners and coroners reported pressure from government officials to change the cause or manner of death on a certificate.

Peter Neufeld et al., *Thousands of Missed Police Killings Prove We Must Address Systemic Bias in Forensic Science*, WASH. POST (Oct. 15, 2021), https://www.washingtonpost.com/opinions/2021/10/15/medical-examiners-forensics-bias-police-killings/.

118. FED. R. EVID. 704(a).

119. FED. R. EVID. 704(b) ("In a criminal case, an expert witness must not state an opinion about whether the defendant did or did not have a mental state or condition that constitutes an element of the crime charged or of a defense. Those matters are for the trier of fact alone.").

always, when an ME offers an opinion that a death was due to homicide (or accident), he necessarily, if tacitly, is opining on intent, recklessness, or negligence—all elements of a charged offense, typically.

That forensic pathology attempts to limit its manner determination of "homicide" to the non-legal conclusion that a second person was the actor who supplied the cause of death merely strengthens the point that Rule 704(b) excludes that opinion. First, that sort of fine, hair-splitting, definitional distinction between homicide for statistical and other statutory purposes, on the one hand, and legal purposes on the other hand, is likely to be lost on a jury (and may not be a matter of jury instructions by the court). At the very least, this would be a reason to exclude the opinion under Rule 403 because its potential to confuse the jury far outweighs its probative value.[120] Second, the very definition of homicide for manner determinations concedes that it is an opinion that embraces an element of the offense or a defense, but in a way that conflates the medical examiner's statutory duties with the different legal offense that the jury must decide. That amounts to a concession that it has no actual probative value in the courtroom. Rule 704(b) exists for exactly that reason. Opinions that merely invite the fact-finder to defer to the conclusions of a stranger to the jury box, in effect to vote by proxy, have no probative value. They tend to prove nothing. Rather, they propose to shift to a non-juror the task of weighing proof.

All of these points explain, too, why the admissibility of even cause-of-death determinations should be considered case by case. Often the cause opinion will not run afoul of the Rules of Evidence and the proper structure of fact-finding in a trial. But on occasion it will. And when non-medical, ordinary evidence underlies an ME's determination of cause, that opinion is no less contrary to the Rules of Evidence and corrosive of the structural reliance on juries, not government officials, to decide facts and guilt or innocence than when the ME offers manner opinions.

IV. MANNER EVIDENCE RELATED TO OTHER OFFENSES, INCLUDING CHILD ABUSE

Our discussion so far has focused on manner determinations by MEs in death cases. That is most frequently the context in which

120. FED. R. EVID. 403 ("The court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.").

these issues are discussed in the cases and the literature. But we want to make clear that the same problems with such opinions as evidence in court apply just as much—truly, often even with more force—in other types of cases in which a physician is called upon to render an opinion about whether a crime occurred, and if so, how it was committed. Most notably, that occurs when child-abuse physicians (or MEs) render opinions that a child was the victim of abuse (sometimes, but not always, leading to death), as in Shaken Baby Syndrome or Abusive Head Trauma ("SBS/AHT") cases.

Whether a child dies or survives, child-abuse physicians, as well as MEs (in death cases), routinely investigate and render opinions, based upon non-specific medical findings[121] coupled with context evidence, to "diagnose" abuse involving violent shaking or shaking with impact. While these physicians insist that such determinations are medical "diagnoses,"[122] they clearly go beyond diagnosis to assess manner, and even more specifically, a particular etiology[123]—that is, they not only diagnose what ails the child's body and what treatment to prescribe, but also purport to determine what external factors *caused* or were the source of those injuries.[124] And just like all other manner determinations, the determination of abuse *as the manner of the injury*, or the underlying etiology, depends not just on the physician's medical expertise and consideration of medical evidence—again, the medical evidence itself that is used to determine SBS/AHT is non-specific—but also on

121. It is universally recognized in the literature that there are no medical findings that are specific for or uniquely diagnostic of abuse, and that indeed all of the diagnostic findings in such cases have multiple known etiologies. *See, e.g.,* Kent P. Hymel et al., *Derivation of a Clinical Prediction Rule for Pediatric Abusive Head Trauma*, 14 PEDIATRIC CRITICAL CARE MED. 210, 212 (2013) ("Gold standard definitional criteria for AHT do not exist."); *id.* at 217 ("[I]n the absence of a gold standard, clinicians can rarely confirm or exclude AHT with complete certainty . . . ."); Sandeep Narang, *A* Daubert *Analysis of Abusive Head Trauma/Shaken Baby Syndrome*, 11 HOUS. J. HEALTH L. & POL'Y 505 app. at 628 (2011) (listing the numerous conditions or etiologies that can produce subdural hematomas, one of the cardinal findings underlying an SBS diagnosis); *id.* app. at 629 (listing the numerous conditions or etiologies that can produce retinal hemorrhages, the second primary diagnostic finding underlying most SBS/AHT determinations).

122. *See* Arabinda Kumar Choudhary et al., *Consensus Statement on Abusive Head Trauma in Infants and Young Children*, 48 PEDIATRIC RADIOL. 1048, 1051 (2018).

123. *See* Findley et al., *Feigned Consensus*, *supra* note 17, at 1238 ("The term 'diagnosis' is wrong, for these cases do not involve a medical *diagnosis* in the true sense. Rather, they involve a causation inquiry that goes beyond diagnosis, and ventures into etiology—a matter that exceeds the expertise of physicians."); *id.* at 1238–45 (discussing at length); Randy Papetti, et al., *Outside the Echo Chamber: A Response to the "Consensus Statement on Abusive Head Trauma in Infants and Young Children"*, 59 SANTA CLARA L. REV. 299, 301 (2019) ("SBS/AHT is not a typical medical diagnosis . . . . [I]ts dominant function is forensic. It is not a diagnosis made for treatment, but rather to identify abuse—specifically, that the child has been violently shaken or subjected to other severe 'acceleration-deceleration' head trauma.").

124. Findley et al., *Feigned Consensus*, *supra* note 17, at 1238–45.

consideration of non-medical context evidence that jurors are as equipped as a doctor to assess.[125]

Moreover, the SBS/AHT determination inevitably runs afoul of the other rules discussed above, just as does the more general manner-of-death determination. Child-abuse physicians, for example, invariably rely upon information that they have no expertise in assessing: things like confessions,[126] a parent's demeanor or character,[127] or the parent's response to the child's condition,[128] or the caregiver's delay in seeking medical care,[129] or the veracity of the

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125. *See infra* notes 138–144.

126. *See generally, e.g.*, Catherine Adamsbaum et al., *Abusive Head Trauma: Judicial Admissions Highlight Violent and Repetitive Shaking*, 126 PEDIATRICS 546 (2010); Dean Biron & Doug Shelton, *Perpetrator Accounts in Infant Abusive Head Trauma Brought About by a Shaking Event*, 29 CHILD ABUSE & NEGLECT 1347 (2005); George A. Edwards et al., *What Do Confessions Reveal About Abusive Head Trauma? A Systematic Review*, 29 CHILD ABUSE REV. 253 (2020); Suzanne P. Starling et al., *Analysis of Perpetrator Admissions to Inflicted Traumatic Brain Injury in Children*, 158 ARCHIVES PEDIATRIC & ADOLESCENT MED. 454 (2004); Matthieu Vinchon et al., *Confessed Abuse Versus Witnessed Accidents in Infants: Comparison of Clinical, Radiological, and Ophthalmological Data in Corroborated Cases*, 26 CHILD'S NERVOUS SYST. 637 (2010).

127. In foundational literature on "diagnosing" child abuse, Drs. Ray Helfer and Henry Kempe instructed physicians to consider the following as signs of possible abuse:

WHEN THE PARENT:

1. Shows evidence of loss of control, or fear of losing control.
2. Presents contradictory history.
3. Projects cause of injury onto a sibling or third party.
4. Has delayed unduly in bringing child in for care.
5. Shows detachment.
6. Reveals inappropriate awareness of seriousness of situation (either overreaction or underreaction).
7. Continues to complain about irrelevant problems unrelated to the injury.
8. Personally is misusing drugs or alcohol.
9. Is disliked, for unknown reasons, by the physician.
10. Presents a history that cannot or does not explain the injury.
11. Gives specific "eye witness" history of abuse.
12. Gives a history of repeated injury.
13. Has no one to "bail" her (him) out when "up tight" with the child.
14. Is reluctant to give information.
15. Refuses consent for further diagnostic studies.
16. Hospital "shops."
17. Cannot be located.
18. Is psychotic or psychopathic.
19. Has been reared in a "motherless" atmosphere.
20. Has unrealistic expectations of the child.

Ray E. Helfer & C. Henry Kempe, *The Child's Need for Early Recognition, Immediate Care and Protection, in* HELPING THE BATTERED CHILD AND HIS FAMILY 69, 73 (C. Henry Kempe & Ray E. Helfer eds., 1972). No scientific or medical research or data was or has since been cited for the diagnostic value of these factors.

128. "Clinical judgment is used to decide what an appropriate parental response entails. This assessment is subjective and therefore dependent on the clinician's personal biases and previous experience." Caitlin Farrell et al., *Symptoms and Time to Medical Care in Children With Accidental Extremity Fractures*, 129 PEDIATRICS e128, e132 (2012).

129. *See id.* ("Delay in seeking treatment is frequently cited as behavior that may signal an abusive injury, but no specific definition of 'delay' is provided.").

parent's statements,[130] and the like. Child abuse physicians invariably also rely on expertise from other domains in which they have no training, like biomechanics and physics.[131] Their opinions therefore depend on assessing matters that exceed their expertise as physicians, and their opinions are not "helpful" to the jury, which is more fully equipped for and appropriately tasked with assessing the ordinary, non-expert evidence. Moreover, to the extent that debate rages about the scientific foundations for the SBS/AHT hypothesis and a physician's ability to determine abuse based on non-specific medical findings, it stumbles on *Daubert's* reliability and scientific-foundation requirements.[132]

Importantly, the SBS/AHT determination violates the rule that no witness, including an expert, may opine about the guilt of the accused, or about the truthfulness of any witness. Indeed, SBS/AHT violates these prohibitions even more clearly than other manner-of-death determinations. Almost uniquely, in many SBS/AHT cases the expert's opinion is used to satisfy all the legal elements of the prosecution's case—to determine that a crime was committed, with the requisite mental state, and that the accused committed it.[133] First, the physician's opinion satisfies the *actus reus* element—what happened—by opining that the child had to have been violently shaken or shaken and slammed.[134] Second, the physician's testimony then also often satisfies the *mens rea*, or mental state of the perpetrator, element, when the physician opines that the shaking or slamming had to have been so violent it could not have been accidental, but had to have been knowing, or intentional, or reckless, or whatever mental state is required under the charges.[135] Moreover, because a "diagnosis" of abuse necessarily includes an opinion that the perpetrator inflicted the injuries with

130. *See, e.g.*, Joeli Hettler & David S. Greener, *Can the Initial History Predict Whether a Child with a Head Injury has been Abused?*, 111 PEDIATRICS 602, 602 (2003); Narang, *supra* note 121, at 560 (positing that one of the strongest diagnostic indicators of abuse is if a parent makes statements about what happened that the physicians deems implausible or untrue, i.e., "discrepant" statements).

131. *See* Keith A. Findley et al., *Shaken Baby Syndrome, Abusive Head Trauma, and Actual Innocence: Getting It Right*, 12 HOUS. J. HEALTH L. & POL'Y 209 231, 236 (2012) [hereinafter Findley et al., *Getting It Right*].

132. *See* RANDY PAPETTI, THE FORENSIC UNRELIABILITY OF THE SHAKEN BABY SYNDROME (2018); Findley et al., *Getting It Right*, *supra* note 131, at 302; Papetti et al., *supra* note 123, at 363–64.

133. *See infra* notes 134–37 and accompanying text.

134. Keith A. Findley, *Flawed Science and the New Wave of Innocents*, *in* WRONGFUL CONVICTIONS AND THE DNA REVOLUTION: TWENTY-FIVE YEARS OF FREEING THE INNOCENT 193 (Daniel S. Medwed ed., 2017); Findley, *Misuse of Statistics, supra* note 10, at 650–51; Findley et al., *Feigned Consensus*, *supra* note 17, at 1246.

135. Findley et al., *Feigned Consensus*, *supra* note 17, at 1246–47.

something more than a benign state of mind (otherwise it would not be abuse, but at worst an accident), an SBS/AHT diagnosis violates the explicit command of Rule 704(b) that no witness may opine about the mental state of the accused. And finally, because many child-abuse physicians will testify that a child so injured would become immediately comatose and unresponsive, the expert's opinions will answer the identity question—the person caring for the child at the time of the collapse must have done it.[136] Because those three elements constitute the entire case, SBS/AHT often constitutes what Professor Deborah Tuerkheimer aptly has described as a "medical diagnosis of murder."[137] No other witness is allowed to so fully usurp the role of the jury as ultimate fact-finder in the courtroom.

Some legal authorities are beginning to recognize this problem with SBS/AHT opinion evidence. The American Law Institute ("ALI"), in its newly adopted Restatement on Children and the Law, now explicitly recognizes that determining whether a caregiver "has physically abused a child is a legal determination to be made by the factfinder"—that is, the judge or jury.[138] The Restatement explains that the role of the expert witness is not to make such determinations but instead is limited to "diagnos[ing] the child's medical conditions, including for example, broken bones, bruising, internal bleeding, and swelling, as well as the medical consequences of those conditions for the child."[139] According to the Restatement:

> In addition to allowing a medical expert to render opinions regarding diagnoses of the child's bodily condition, a court may also allow a medical expert to render opinions regarding the external forces that may have caused the child's conditions. A medical expert may testify, for example, about whether a child's injuries are consistent with a parent's testimony that the child was injured while playing or whether the injuries are consistent with blunt force trauma inflicted by the parent. Determinations regarding the external forces that may have caused the child's condition exceed the scope of a diagnostic determination,

136. *Id.* at 1248.

137. Deborah Tuerkheimer, *The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts*, 87 WASH. U. L. REV. 1, 5 (2011); Deborah Tuerkheimer, *Science-Dependent Prosecution and the Problem of Epistemic Contingency: A Study of Shaken Baby Syndrome*, 3 ALA. L. REV. 513, 515–16 (2009); *see also* DEBORAH TUERKHEIMER, FLAWED CONVICTIONS: "SHAKEN BABY SYNDROME" AND THE INERTIA OF INJUSTICE 38 (2014).

138. RESTATEMENT OF CHILDREN AND THE LAW § 3.20 cmt. k (AM. LAW INST. Tentative Draft No. 1, Apr. 6, 2018).

139. *Id.*

> however, and therefore the court must separately ascertain that the medical expert has appropriate expertise to render an opinion on such issues and that the opinion is adequately grounded in science.[140]

The Reporter's Comment elaborates: "The conclusion that the child's diagnoses were the result of abuse is a decision that should be left solely to the trier of fact."[141]

Likewise, in *People v. McFarlane*[142] the Michigan Court of Appeals recently applied this limitation in an SBS/AHT case. The court held:

> [W]e conclude that in cases involving allegations of abuse, an expert goes too far when he or she diagnoses the injury as "abusive head trauma" or opines that the inflicted trauma amounted to child abuse. The ordinary understanding of the term "abuse"—as opposed to neglect or carelessness—implies a level of willfulness and moral culpability that implicates the defendant's intent or knowledge when performing the act that caused the head trauma. An expert may not offer an opinion on the intent or criminal responsibility of the accused.[143]

The ALI and *McFarlane* court surely are correct about that.[144]

Just as ME testimony in death cases can almost always be appropriate and helpful to the jury when constrained to describing and interpreting the *medical* evidence from the examination of the body and associated tests (which will often, but not always, permit opinion testimony about cause, but not manner), so can the child-abuse physician's testimony be appropriate and helpful when limited to describing the medical findings and the various scenarios that *medically could* produce such findings. But they go too far when they purport to "diagnose" abuse—to determine which, among the competing possibilities, was the true external cause of the injuries,

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140. *Id.*
141. *Id.* § 3.20 reporter's cmt. k.
142. 926 N.W.2d 339 (Mich. Ct. App. 2018), *appeal denied*, 943 N.W.2d 84 (2020).
143. *Id.* at 350 (citation omitted).
144. Despite its holding banning expert opinions about abusive head trauma or child abuse, the court in *McFarlane* also suggested that physicians may opine that a child's injuries were "inflicted." *Id.* As one of us has noted before, however, "[t]his part of the decision makes little sense . . . because calling an injury 'inflicted' is effectively equivalent to calling it 'abusive.'" Findley et al., *Feigned Consensus, supra,* note 17, at 1255 n.190 (quoting *McFarlane*, 926 N.W.2d at 350).

including the state of mind of the third-party perpetrator, and indeed the identity of that perpetrator.

CONCLUSION

Medical examiners, other physicians, and coroners play a critical role in two separate U.S. institutions—the public health system, and the judicial system. While their roles in these two systems overlap, they are in fact distinct. In the public health system, MEs are by law the ultimate fact-finders, who must consider all case evidence of every sort to reach fully informed decisions. In the legal arena, they are not the fact-finders at all, and the rules limit them to offering opinions grounded carefully in their expertise, leaving consideration of non-expert evidence to the proper fact-finders in the courtroom, the jury. Forensic pathologists themselves remind us that, in the public health system, their task is to create aggregate data on cause and manner of death. For that task, getting it right in the individual case, particularly the difficult, ambiguous, and contested case, is of relatively little concern, because those cases make up a tiny proportion of all death investigations—such a small number that they have no significant effect on aggregate statistical data. And for that matter, statistics themselves are not focused on the accuracy of individual instances; by definition, they present broad patterns. But in the legal system, it is the difficult, ambiguous, and contested cases that go to litigation and verdict, and in those individual cases getting it right is all that matters. Manner determinations fit the ME's responsibilities as public health officials but are a misfit for their role as expert witness in the courtroom.

It is past time that courts recognize that, under long-established rules of evidence that protect even older structural roles in trials, manner determinations are for the jury, not the expert. Opinions about manner should be inadmissible in every death case. Moreover, cause-of-death determinations, while generally dependent on medical expertise and discernible from medical expertise, sometimes also are dependent on ordinary, non-medical evidence, and accordingly should be inadmissible in those cases, on a case-by-case basis, as some courts have begun to recognize. Finally, because these principles apply equally to other medical determinations of crime, such as medical opinions about SBS/AHT, those ultimate causation and manner opinions in those cases, when properly understood and analyzed as etiology, not diagnosis, should be inadmissible as well.

ATTACHMENT G
National Association of Medical Examiners Manual

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A Guide For Manner of Death Classification

First Edition

National Association of Medical Examiners ®

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Approved by the NAME Board of Directors
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Preface and Caveats

If reading this Guide results in a given certifier of death deciding to change his/her approach to classifying manner of death in certain types of cases, there is no need to amend or change certifications that have already taken place. Starting the new approach at a given point in time is acceptable, with the caveat that one may occasionally need to explain differences between newer and older certifications involving similar or identical circumstances.

If changes in manner-of-death classification procedures are undertaken, it may be prudent to discuss them with appropriate vital records registrars so they are not surprised, and that they understand the reasons for the change.

This book is a Guide. The recommendations contained herein are not standards and should not be used to evaluate the performance of a given certifier in a given case. Death certification and manner-of-death classification require judgment, and room must be allowed for discretion on a case by case basis.

It must be realized that when differing opinions occur regarding manner-of-death classification, there is often no "right" or "wrong" answer or specific classification that is better than its alternatives. When promulgating guidelines, however, one of the available options needs to be selected as the one recommended for use. Thus, the recommendations herein are ones selected to foster a consistent approach amongst certifiers, not because the recommended approach is the "right" or the "better" one.

The "arguments," principles, and foundations used to support certain recommendations in this Guide cannot be applied uniformly to every conceivable death scenario because issues sometimes vary with the manner of death being discussed. As a result, there will be obvious, apparent "inconsistencies" in the rationale discussed for making some of the recommendations in this Guide. This problem is unavoidable because of the nature of the subject at hand. Thus, in some cases, one simply must select an available manner-of-death classification as the preferred one for use in a given scenario while recognizing that the logic used to select that option may not be applicable or directly transferable to other situations (and, in fact, may seem inconsistent with the logic employed in other scenarios). In short, it is sometimes necessary to simply select an approach and use it for the purpose of consistency, recognizing that other approaches may be "just as good."

Finally, a draft publication of this Guide was made available for review and comment by the NAME membership. All comments were reviewed and considered. Discussion of the nature of the comments and the way they were addressed is included as an Appendix to this Guide. This revised version of the Guide was approved as an official publication of NAME by the Board of Directors at its Interim Meeting in Atlanta, Georgia on February 12, 2002.

It is anticipated that supplements to, or revisions of this Guide will occur in the future.

Introduction:

All states have a standard death certificate that is based upon a model certificate called the US Standard Certificate of Death. Although the official death certificate in each state varies from the model and the death certificates used in other states, there are numerous similarities in form and content. The *certifier of death* is the physician, medical examiner, or coroner who completes the cause-of-death section of the certificate that also includes details about the circumstances surrounding death. *Manner of death* is one of the items that must be reported on the death certificate and a classification of death based on the circumstances surrounding a particular cause of death and how that cause came into play.

In most states, the acceptable options for manner-of-death classification are:

- Natural
- Accident
- Suicide
- Homicide
- Undetermined (or "Could not be Determined")

Whether manner of death is indicated by checking an appropriate box on the death certificate or by writing or typing the manner in a designated space depends on the state and how its standard death certificate form is designed. Familiarity with state death certification procedures and the death certificate form are required.

Manner of death is an American invention. A place to classify manner of death was added to the US Standard Certificate of Death in 1910. Manner of death is not addressed directly in the International Classification of Diseases as promulgated by the World Health Organization. It was added to the death certificate by public health officials to assist in clarifying the circumstances of death and how an injury was sustained—not as a legally binding opinion—and with a major goal of assisting nosologists who code and classify cause-of-death information from death certificates for statistical purposes.

Medical examiners and coroners have debated for decades about how the manner of death should be classified in certain situations, and more recently, whether certifiers should be required to classify manner of death at all. The debate continues and is a frequent subject of discussion.

This Guide has been written with the assumptions that, for the foreseeable future, manner-of-death classification will continue to be recorded on the death certificate—and differences in opinions about how to classify manner of death shall persist. The major impetus for preparing this Guide is the premise that, for consistency's sake, there can be a common thought and decision-making process upon which manner-of-death classifications can be based reproducibly in the great majority of cases.

Medical Examiners and Coroners reached the point that for personal, interpersonal, and inter-jurisdictional consistency, we as death certification professionals should be able to

recognize the recurrent debates about manner-of-death classification and arrive at a consensus approach for the commonly encountered manner of death dilemmas. We can "agree to disagree-- but to not be disagreeable," to quote New York City Medical Examiner Charles Hirsch. All agree, however, on the fundamental premise that manner of death is circumstance-dependent, not autopsy-dependent. To that end, the suggestions in this Guide are made based on experience, the literature, and a goal for greater consistency.

Other Background Information:

The death certificate is used for several major purposes. One purpose is to serve as legal documentation that a specific individual has died. In general, the death certificate serves as legal proof that death has occurred, but not as legal proof of the cause of death. Other major purposes of the death certificate are to: (a) provide information for mortality statistics that may be used to assess the Nation's health; (b) systematically catalogue causes of morbidity and mortality; and (c) develop priorities for funding and programs that involve public health and safety issues.

In general, the *certifier of death* completes the cause-of-death section and attests that, to the best of the certifier's knowledge, the person stated died of the cause(s) and circumstances reported on the death certificate. It is important to remember that these "facts" only represent the certifier's opinion and are not written in stone or legally binding. Information on the death certificate may be changed, if needed. In general, states require that the certifier of death be a licensed physician, a medical examiner, or a coroner. In some states, lay coroners may serve as certifier, but such certifiers can and should rely upon physician input and guidance when completing the death certificate.

Because the cause and manner of death are opinions, judgment is required to formulate both for reporting on the death certificate. The degree of certainty required to classify the manner of death depends sometimes on the circumstances of the death. Although such issues will be discussed in further detail below, a general scheme of incremental "degrees of certainty" is as follows:

- Undetermined (less than 50% certainty)
- Reasonable medical or investigative probability (Greater than a 50:50 chance; more likely than not)
- Preponderance of medical/investigative evidence (For practical purposes, let's say about 70% or greater certainty)
- Clear and convincing medical/investigative evidence (For practical purposes, let's say 90% or greater certainty)
- Beyond any reasonable doubt (essentially 100% certainty)
- Beyond any doubt (100% certainty)

Seldom, for the purpose of manner-of-death classification, is "beyond a reasonable doubt" required as the burden of proof. In many cases, "reasonable probability" will suffice, but in other instances such as suicide, case law or prudence may require a

"preponderance" of evidence—or in homicide—"clear and convincing evidence" may be required or recommended. Further references to these principles will follow on the discussion of specific scenarios, as appropriate, below.

The certifier's responsibilities include professional, administrative, and quasi-judicial elements. The conclusions that lead to manner-of-death classification are drawn at some point during an ongoing investigation. Cases are seldom, if ever, truly "closed" because the conclusions regarding manner of death may be changed (amended) anytime based on new relevant and material information. It is also important to remember that the conclusions reached for the purpose of manner-of-death classification may not be the same as those of other entities and officials. Such differences are expected because of the different roles and viewpoints of those entities and officials. In virtually all instances, explanations for such differences are usually apparent and readily offered. It is also important to remember that new developments in medicine and forensic science may provide the relevant and/or material information that leads to a need for reclassification of manner of death.

Manner-of-death classification has, to a significant degree, an element of history and tradition. When asked why manner of death is classified in a specific way, a not-uncommon response is "that's the way I was trained" or "that's the way its always been done where I have worked." Tradition, history, training, and local idiosyncrasies in the criminal justice and law enforcement communities can have impact upon manner-of-death classification strategy. This phenomenon is recognized and is taken into account during the development of principles in this Guide.

Finally, one cannot escape the need to consider **intent** when classifying manner of death. However, the definition of, or need to consider "intent" may vary depending on the case. One basic consideration is beyond dispute: the concept of intent differs when manner-of-death classification issues are compared with other paradigms such as legal code and public health strategies. These issues will be addressed in various scenarios below. The take-home point devolving from contemporary practice is that a singular definition and application of "intent" does not work in the context of manner-of-death classification.

General Principles:

There are several General Principles that may guide manner-of-death classification for the purposes of the death certificate. It is important to recognize that the death certificate has unique uses which dictate a special set of guidelines for manner-of-death classification.

A. There are exceptions to every "rule," but every rule holds true most of the time. Therefore, rules can be modified or broken in exceptional circumstances but can, and should be followed most of the time.

B. There are basic, general "rules" for classifying manner of death.

- Natural deaths are due solely or nearly totally to disease and/or the aging process

- Accident applies when an injury or poisoning causes death and there is little or no evidence that the injury or poisoning occurred with intent to harm or cause death. In essence, the fatal outcome was unintentional.
- Suicide results from an injury or poisoning as a result of an intentional, self-inflicted act committed to do self harm or cause the death of one's self.
- Homicide occurs when death results from a volitional act committed by another person to cause fear, harm, or death. Intent to cause death is a common element but is not required for classification as homicide (more below). It is to be emphasized that the classification of Homicide for the purposes of death certification is a "neutral" term and neither indicates nor implies *criminal* intent, which remains a determination within the province of legal processes.
- Undetermined or "could not be determined" is a classification used when the information pointing to one manner of death is no more compelling than one or more other competing manners of death in thorough consideration of all available information.
- In general, when death involves a combination of natural processes and external factors such as injury or poisoning, preference is given to the non-natural manner of death.

There are challenging aspects and exceptions related to each of the above classifications and concepts. These will be addressed in the various sections that follow.

C. Certifiers of death should avoid, to the extent possible, interpretation of specific statutes as they may apply to a specific case in question. For example, if a state defines a fatal vehicular hit-and-run incident as a type of "vehicular homicide," the certifier may classify manner as accident if the fatal injury seems to have been unintentional without clear intent to harm or cause death. Prosecution for vehicular homicide is not precluded if the legal requirements are met. This principle minimizes the need for the certifier to rely upon reported, often circumstantial third party or hearsay information and evaluate these data it in the context of applicable criminal law, a function better suited to others in the criminal justice system.

D. In general, the time interval between an injury/poisoning event and death is of little relevance in regard to manner of death classification if death resulted from the effects or complications of the injury/poisoning and there is no clear supervening cause. For example, if a person dies 10 years after being intentionally shot by another person, with death resulting from pneumonia and systemic sepsis as a result of quadriplegia caused by the gunshot wound, the manner of death would still be classified as homicide. By reliance on this approach, legal interpretations are not required of the certifier and the criminal justice system's duties are not precluded.

E. Manner of death certifications should be objective and based on simple, established criteria. Manner-of-death classification should not be formulated on the basis of trying to facilitate prosecution, avoiding challenging publicity, building a political base, or promoting a personal philosophy or agenda.

F. Regardless of how the certifier classifies the manner of death, the certifier may later address whether the findings are consistent with a proposed hypothetical situation. For example, if the proper legal foundation is laid, the certifier may explain in court why the manner of death was certified as accident when told that the defendant has been charged with vehicular homicide. Whether the certifier is permitted to testify in court about the certified manner of death rests upon the law and practice of the relevant jurisdiction.

G. The "but-for" principle is commonly applicable. "But-for the injury (or hostile environment), would the person have died when he/she did?" This logic is often cited as a simple way to determine whether a death should be classified as natural or non-natural (homicide, suicide, accident). When an injury or poisoning is involved in the cause of death, an answer of "yes" supports a natural death and an answer of "no" should prompt due consideration to be given to a non-natural manner of death. The certifier needs to recognize, however, that the intermingling of natural and non-natural factors presents a set of complex considerations in assigning a manner of death. Regardless of whether the non-natural factor (a) unequivocally precipitated death, (b) exacerbated an underlying natural pathological condition, (c) produced a "natural" condition that constitutes the immediate cause of death, or (d) contributed to the death of a person with natural disease typically survivable in a non-hostile environment, this principle remains: the manner of death is unnatural when injury hastened the death of one already vulnerable to significant or even life-threatening disease.

H. Most jurisdictions do not provide for manner of death to be classified as "Complication of Therapy." Although there are advocates for such an approach, acceptance of the approach is not widespread. To be sure, the death certificate should indicate when a death results from complications of medical diagnosis or treatment--whether such indication is given in the cause-of-death statement itself, the "how injury occurred" section, or in some other way. This Guide indulges the presumption that "Complication of Therapy" is not an accepted category for manner of death, and that a decision will have to be made for classification as one of the standard manners of death.

I. Risk-taking behavior poses challenges when classifying manner of death. More and more, people are engaging in risky sports, recreational activities, and other personal behaviors. Injury or death, when it occurs during such activities, is not entirely unexpected, prompting the argument that such deaths may not truly be "accidents." Further, relevant differences in the nature and extent of risk, when comparing risky activities, are difficult to clearly identify. For example, how does placing an "unloaded" gun to the head and pulling the trigger (Roulette) differ from jumping from a bridge on an elastic cord, engaging in sexual acts with a noose around the neck, or participating in a sport in which blows to the head are part of the "game."? These are challenging questions. In subsequent sections of this Guide, an attempt is made to provide a system of defensible logic to classify the manner of death in such cases.

J. Volition versus Intent. In evaluating the manner of death in cases involving external causes or factors (such as injury or poisoning), injuries are often categorized as

"intentional" (such as inflicted injury in child abuse or shooting a person during a robbery) or "unintentional" (such as falling from a building). Thus, assessment of "intent" does relate to manner-of-death classification: it necessarily underlies the quasi-judicial responsibility derived from the enabling law in the relevant jurisdiction of the death certifier. However, the legal view of intent may differ from the death investigator's viewpoint. It is sometimes agonizingly difficult, and occasionally impossible, for the unbiased investigator to infer a victim's or "perpetrator's" intent. Intent is also much more apparent in some cases than others. For this reason, the concept of "voluntary acts" or "volition" may be useful. In general, if a person's death results at the "hands of another" who committed a harmful volitional act directed at the victim, the death may be considered a homicide from the death investigation standpoint. For example, consider the case of a variation of firearms "roulette" in which the game is played as usual (one bullet in the revolver's cylinder) except that another person holds the gun to the "player's" head, spins the cylinder, pulls the trigger, and the gun discharges and kills the "player." All acts (loading the gun, spinning the cylinder, placing the gun to the head, and pulling the trigger) were both volitional and intentional. Although there may not have been intent to kill the victim, the victim died because of the harmful, intentional, volitional act committed by another person. Thus, the manner of death may be classified as homicide because of the intentional or volitional act—not because there was intent to kill.

Principles and recommendations for specific types of cases.

1. To classify a death as Suicide, the burden of proof need not be "beyond any reasonable doubt," but it should exceed "more likely than not" (that is, the burden of proof should be more compelling than 51%, which barely exceeds chance). In general, requiring a "preponderance of evidence" is a reasonable practice when deciding whether to classify a death as suicide. In some states, case or other law requires that a preponderance of evidence exist to classify death as suicide. In short, if classification as suicide is little more than an informed guess or mere speculation, accident or undetermined are deemed to be better options.

2. When a natural event occurs in a hostile environment, as when someone has a myocardial infarct while swimming, and there is a likelihood that the person was alive when the face became immersed (i.e., the person was still alive while in the hostile environment), preference is usually given to the non-natural manner unless it is clear that death occurred before entry into the hostile environment. In the example cited (drowning because of a myocardial infarct while swimming), the manner of death would be appropriately classified as **Accident**. In this instance, a modified "but-for" test can be applied. "But-for" the hostile environment, death would have been considerably less likely to occur when it did and may not have occurred at all.

3. Consequences of chronic substance abuse, such as alcoholic cirrhosis, alcohol withdrawal seizures, endocarditis secondary to chronic IV drug abuse, and emphysema associated with smoking, have been traditionally designated as **Natural** manner. The

argument is often made that these deaths are chronic poisonings or that they result from continuous exposure to external agents and are, therefore, not natural deaths. Further, some argue that there is a "sub-intent" to do self- harm. However, the classification of such deaths as natural has a long history, widespread acceptance, and recognition that such behaviors result in "diseases" and become part of the person's "normal" lifestyle which often includes psychiatric elements such as a dependency or addictive disorder. For these latter reasons, classification as natural seems most appropriate.

4. Deaths directly due to the acute toxic effects of a drug or poison (i.e., poisoning), such as acute alcohol poisoning, excited delirium from acute cocaine intoxication, or cardiac dysrhythmia due to tricyclic antidepressant toxicity have been traditionally classified as **Accident** (assuming there was no intent to do self harm or cause death). In general, these are adverse acute events involving external factors, and the occurrence of the adverse event is not planned, reasonably expected, or reliably predictable as to time, place, or person. The difficulty often encountered is whether the drug or substance detected represents an acute exposure. For example, if benzoylecgonine only is detected in blood, does that constitute an "acute exposure"? The issues involved are highly dependent on the substance involved, are beyond the scope of this Guide, and are better left to other publications. Suffice it to say that if death results from an acute intoxication and the death was "unintentional," tradition and logic indicate that the manner of death is best classified as "accident." Further discussion (and exceptions) are discussed in #6 below in reference to some deaths involving medications and treatments.

5. "Natural" disorders precipitated by an acute intoxication, such as cerebral hemorrhage associated with acute cocaine intoxication, or rupture of a coronary atherosclerotic plaque during acute cocaine intoxication, for the purpose of consistency, may be classified as **Accident** if toxicology tests are supportive of an acute intoxication. The problem is, however, as in #4, deciding upon how "acute" such an intoxication is or must be to classify the manner of death as accident—and how acute effects of the drug relate to more chronic effects, if present. A convincing argument could be offered that preference should be given to the natural event while citing the intoxication in Part II and classifying the death as natural. It is recommended, however, to remain consistent with General Principle B (last bullet) that such deaths be classified as accidents. It is also recommended that "acute" be interpreted liberally, perhaps even as "recent." That is, if the circumstances appear to link the death and a very recent intoxication, that the intoxication be considered when classifying manner of death.

6. Deaths due to predictable, essentially unavoidable toxicity related to accepted treatment of a medical disorder, such as digoxin toxicity in severe congestive heart failure, or bone marrow suppression with fatal infection secondary to chemotherapy (a poison), may be classified as **Natural.** In such cases, the treatment may have prolonged the life of the individual. Because such deaths are "poisonings," some advocate classification as accident. However, tolerance, the need for high doses, and other factors can make interpretations difficult. For these reasons, natural is the preferred classification.

7. Hunting "accidents" in which a hunter intentionally fires a weapon (but may not intend to shoot at a human), may, for consistency's sake, be classified as **Homicide** because the decedent died at the hands of another who volitionally fired the weapon. Each step but one involved intent and volition: loading the weapon, aiming it at a target, and pulling the trigger. The only intent absent was that of striking a human. The intent to hit a target was fulfilled.

8. Firearms deaths in which a gun is shown to be capable of discharge without pulling the trigger, and, based on investigation, did so (as when a gun fires when dropped on the ground, or discharges when it is picked up), may be classified as **Accident** if circumstances and investigation indicate that the gun was not fired by intentionally pulling the trigger (lack of a volitional act).

9. Death of one who is struck by a ricochet from a firearm fired legally and without disregard for safety or human life may be classified as **Accident**. To classify this as homicide, critical elements are missing: an intent to harm or kill, and an intentional or volitional pointing of the weapon in a way that the victim was the intended target. Often, if bullets ricochet, wound morphology allows analysis of possible ricochet before bullet entry, allowing the forensic pathologist to assess the possibility or likelihood of ricochet.

10. Russian roulette or similar variants may be classified as **Suicide** because the act of placing a loaded gun to the head and pulling the trigger is inherently dangerous, carries a high risk of death, and implies a "subintent" to do self-harm or accept the risk of serious injury or death. Guns are generally regarded as lethal weapons and are inherently lethal if misused. Knowledge of this fact is part of the reason the game is played. Thus, playing the game connotes an acceptance of possibly fatal outcome. Attempting to determine the victim's state of mind and intent are extremely difficult. Classification of such deaths as suicide provides for a consistent approach and reflects the most common practice.

11. Motor vehicle fatalities in general, may be classified as **Accident** (assuming no suicidal or homicidal intent), even if by law the death may be regarded as vehicular homicide—and, there is no evidence from reasonable investigative inference that the at-fault person was using the vehicle as a weapon with an intent to kill the victim (in which case homicide would apply.)

12. Deaths due to vector-borne disease, even though the result of a bite or puncture such as rabies, Rocky Mountain Spotted Fever, and malaria, may be classified as **Natural.** These vectors transmit disease, and humans become ill or die from the disease processes. Typically, the deaths are less sudden than those due to envenomization and idiosyncratic responses to the agents are less variable than the individual response to envenomization.

13. Deaths due to toxic envenomization, such as spider bites, snake bites, and anaphylactic reactions to bee stings may be classified as **Accident**. These episodes are typically acute and the fatal human pathophysiologic response involves reaction to a toxin. Granted, the distinction between this type of death and those described in #12 is

somewhat arbitrary, but the line of distinction, thus drawn, is also fairly clear and easy to establish.

14. Deaths due to drug or food induced anaphylaxis or anaphylactoid reaction may be classified as **Accident,** even if there is a previous history of allergic reaction to the putative agent. Some argue that anaphylaxis represents an idiosyncratic pathophysiologic response and should therefore be considered natural. However, such deaths are often sudden, unpredicted, "premature," and involve an external factor. Thus, classifying the manner as accident is preferred. It matters not whether the agent is food, drug, contrast dye, or other.

15. Unintentional deaths from drug toxicity/poisoning in which the drug is administered by someone with the consent of the decedent may be classified as **Accident,** as long as there is no evidence by reasonable investigative inference that the drug was given with the intent to kill the victim. Prosecution may still occur, if appropriate. This approach may seem inconsistent with some other scenarios, but it is reasonable on the basis that severe injury or death is not near as likely as, for example, when a loaded gun is placed to the head and the trigger is pulled.

16. Deaths due to positional restraint induced by law enforcement personnel or to choke holds or other measures to subdue may be classified as **Homicide**. In such cases, there may not be intent to kill, but the death results from one or more intentional, volitional, potentially harmful acts directed at the decedent (without consent, of course). Further, there is some value to the homicide classification toward reducing the public perception that a "cover up" is being perpetrated by the death investigation agency.

17. Deaths of athletes due to injuries sustained in organized sports may be classified as **Accident** because the participants accept inherent risks of the sport, unless the nature of the injury clearly falls outside that which normally occurs during the activity. Another way to regard this issue is that the "volitional or intentional act" that causes harm is inherent in participating in the game, and the game or sport requires the participant to commit potentially harmful acts. Thus, an untoward event is not solely attributable to the participant, and the potential risks have been sanctioned and accepted. Examples might include death from a "legal" head blow during boxing, or a broken neck from a tackle during a football game. However, death resulting from an altercation might be considered homicide if there were clear, unwarranted aggression outside the bounds of normal activities related to the rules of the sport—chasing down a baseball pitcher and striking him with the bat, for example. Judgment and informed discretion are required.

18. Death of a law enforcement officer from cardiovascular or other natural disease while in pursuit of a criminal, felon, or suspect may be classified as **Natural,** assuming there is no aggression or battery on the part of the person fleeing. Physical exertion may be listed as a contributory factor. Sample wording for use in Part II might be "Physical exertion while apprehending a fleeing suspect." Such wording is appropriate for Part II because no injury occurred, thus, the "how injury occurred" item is not applicable.

19. Deaths due to reasonably foreseeable complications of an accepted therapy for natural disease may be classified as **Natural.** Examples include bone marrow suppression from chemotherapy (a "poisoning," actually) and digoxin toxicity in someone who had intractable heart failure and required digoxin to maintain cardiac function and life. Numerous other analogous examples exist.

20. Deaths due to improper use of medical equipment (without evidence of intentional misuse) or defective or malfunctioning medical equipment may be classified as **Accident.** Some examples are: instilling of air instead of water during an endoscopic procedure, causing air embolism; connecting an oxygen cannula to an IV line; malfunction of a morphine drip pump; cutting an artery during surgery and failing to recognize and adequately repairing the "injury."

21. Deaths resulting from grossly negligent medical care (such as inducing anesthesia without resuscitative equipment/supplies available) may be classified as **Accident** unless there is clear indication of intent to do harm, in which homicide might apply. The criminalization of medical malpractice is of great concern to both the legal and medical professions, and whether or not medical acts of commission or omission meet a legal definition of negligent or other homicide is better left to others more familiar with the legal issues involved.

22. Deaths due to undesirable outcomes of diagnostic or therapeutic procedures and which involve circumstances outside the realm of reasonably acceptable risk and expected outcome may be classified as **Accident** if a traumatic or toxic cause is shown (such as inadvertently cutting a major artery or overdosing with anesthetic), and **Undetermined** if a cause cannot be established (such as a young healthy man who dies during surgery for a inguinal hernia and a cause cannot be determined).

23. High risk surgical patients who die while undergoing (or after) high risk procedures may be classified as **Natural** if it appears that the normal and unavoidable stress of the surgery and underlying disease resulted in death. Using the ASA surgical risk classification to evaluate manner of death, as described by Reay, is a useful approach. An approach to periprocedural deaths is contained in the CAP manual on death certification. Both references are listed in suggested readings at the end of this Guide.

24. When a person commits suicide by forcing the police to shoot, the death may be classified as **Homicide**. In "How injury occurred," language such as "decedent forced police to shoot him" may be used. The accuracy of reported details in such cases is not always known, and classification as homicide seems to be the best approach. Public perceptions of a "cover up" are also minimized using this approach.

25. Judicial executions may be certified as **Homicide**. In "How injury occurred," language such as "judicial electrocution" or "judicial lethal injection" may be used

26. When a young child shoots another child by pointing a gun and pulling a trigger, the death may be classified as **Homicide** even though the child may not be subject to

prosecution. Undetermined may be appropriate if the circumstances are not well clarified, or Accident may apply if investigation shows a faulty/malfunctioning weapon.

27. Traffic fatalities in which a pedestrian is killed and the driver has shown negligent behavior, probable intoxication, or fleeing of the scene may be certified as **Accident** even though these features may meet a legal definition of vehicular homicide, and assuming that there was no intent to kill the individual. Whether or not the case meets a legal definition of vehicular (or some other form) of homicide/manslaughter is better left to the criminal justice system.

28.Deaths resulting from fear/fright induced by verbal assault, threats of physical harm, or through acts aggression intended to instill fear or fright may be classified as **Homicide** if there is a close temporal relationship between the incident and death. Examples include someone who has an acute cardiac death while being verbally assaulted; someone who dies in an auto crash while being chased by another to instill fear or panic; someone who dies suddenly immediately after being bitten; and someone who dies suddenly when someone scares them by popping up in a window and yelling "BOO!" with an apparent intent to scare or instill fear. In general, the time interval to establish the causal relationship between "minor injury" and collapse followed by death or those involving acute cardiac deaths following fright must be very short—during the stress inducing episode or immediate emotional response period-- a few minutes or less.

29. Post-traumatic seizure disorders may be classified in accordance with the nature of the injury that resulted in the seizure disorder—regardless of the time interval between the injury and death. Thus, post-traumatic seizure disorder that caused death 10 years after the auto accident that caused the disorder may still be classified as Accident.

30. Failure to prescribe needed medication for natural disease, if there is no indication of willful failure to prescribe with intent to do harm, may be classified as **Natural**.

31. When a person has clearly committed a suicidal act, then apparently changes his/her mind, but dies as a result of the act, the manner of death may be classified as **Suicide.**

32. Café coronary in its classic form of upper airway obstruction by food (that hasn't made it to or through the esophagus) in an otherwise healthy person may be classified as **Accident**. Typically, there is historical, anatomic, or toxicologic evidence accounting for compromised deglutition. Agonal aspiration of gastric contents or GE reflux do not fall into this category and, in general, should not be classified as an accidental manner of death.

33. Deaths due to aspiration of oral secretions or gastric contents in those with dementia or other chronic debilitating central nervous system disease may be classified as **Natural**.

34. Death involving obstruction of a tracheostomy site or tube by mucous plugs or other secretions may be classified in accordance with the nature of the condition that required the tracheostomy to be performed. If performed for throat cancer, the manner would be natural. If performed because of an old accidental head injury, the manner would be accident, for example.

35. Deaths due to work-related infections resulting from job-related injury, such as HIV infection acquired through an accidental needle stick, may be classified as **Accident** if investigation shows no other compelling, competing causes, and the details of the incident are reasonably well documented.

36. Deaths involving active euthanasia or actively assisted suicide may be classified as **Homicide** unless state law dictates otherwise.

37. Assisted suicide involving passive assistance may be classified as **Suicide** unless otherwise required by state law, and assuming that the assistance goes no further than supplying one or more items (or information needed) to complete the act.

38. Deaths in which infants/young children die because of placement in a potentially hostile environment (such as in a bath tub with water, or being left in a locked car) may be classified as **Accident** if there is no evidence of intent to harm the child.

39. Deaths due to environmental hypothermia or hyperthermia may be classified as **Accident** if there is no intent to kill or harm the victim via the act of placing or leaving a person in such environment with apparent intent to do harm.

40. Deaths in which hot weather or cold weather seem to precipitate death primarily caused by underlying disease such as cardiovascular or respiratory illness may be classified as Natural. In Part II of the cause-of-death statement, "Hot weather" or "Cold Weather" may be listed as contributory factors. Life consists of having to live within the realm of natural conditions imposed by the weather and climate, and if the individual's underlying ill-health is a major factor in causing death, the adverse impact of natural changes in weather, even if regarded as extreme, does not warrant classification as Accident. For example, if a person's emphysema/bronchitis are aggravated by a high pollen count and death results, are we to classify the death as an Accident? What about high and low humidity that may contribute to death by aggravating severe respiratory disease? The potential cause and effect relationships are too vague and difficult to establish to allow for non-natural classification in such cases. Similarly, deaths related to exertion brought about by adverse weather may also be classified as natural, such as a myocardial infarction brought about by shoveling snow.

41. Deaths of those with major disease and minor accidental trauma may be classified as natural if it is thought that death was about as likely to have occurred when it did had the trauma not existed. For example, a person in sickle cell crisis might sustain a minor injury that could exacerbate the crisis, yet the crisis is severe enough that it may well have been fatal on its own.

42. Pregnancy-related deaths such as those due to eclampsia, air embolism, amniotic fluid embolism and other well-recognized complications of pregnancy may be classified as natural if there is no indication that that the complication resulted from inappropriate use of a medical device or an inappropriate or unlawful procedure.

43. Death resulting from an act of aggression with a chemical or biological agent released or activated to cause fear or harm may be classified as homicide. Bioterrorism events are included in this category which would also include smaller scale events such as intentionally poisoning the food at a salad bar, or tainting a commercial drug with a poison.

44. Fatalities resulting from autoerotic behavior or consensual atypical sexual behavior may be classified as accident in manner. Examples include autoerotic asphyxia with hanging or deaths involving bondage with asphyxia in which the person being bound did so voluntarily as far as investigation can show. As dangerous behaviors, one could argue that these are not dissimilar from Russian Roulette. The perceived risk of death, however, may not be as great and the "weapon" or agents involved are, in general, not as inherently dangerous.

45. Natural deaths occurring during the exertion of intercourse or other sexual activity such as masturbation may be classified as natural in manner. An example would be rupture of a berry aneurysm shortly after coitus.

46. Self-inflicted deaths committed while under the influence of a mind-altering drug may be classified as **Suicide**. Assuming that the mind-altering drug was taken voluntarily, the victim assumes the risk of the adverse effects of the drugs on behavior. A pathologist can rarely, if ever, determine that a suicidal act would not have occurred if a given drug were not in the victim's "system," or that an intoxication caused an "accident" rather than suicide.

Sudden Infant Death Syndrome and related infant deaths

Infant deaths pose special problems when classifying manner of death and stating the cause of death. Changing trends in causes of infant mortality, increased recognition of fatal infant and child abuse, and changing concepts about pathogenesis and injury mechanisms all have served to complicate the certification of infant deaths. For these reasons, they are discussed as a group below.

Deaths presenting as possible Sudden Infant Death Syndrome, after thorough autopsy and investigation, tend to fall into one of the following Groups:

Group 1. A specific disease, injury, or other condition is identified as the cause of death

Group 2. The case meets the criteria for the diagnosis of sudden infant death syndrome (no cause of death identified after complete autopsy, including toxicology and other lab

tests, scene investigation, and review of the medical/clinical history) and there is no information which brings the SIDS diagnosis into question (toxicology tests are negative, histology is negative, and there are no unusual scene findings or sleeping conditions—in essence, a "classic" and uncomplicated SIDS case)

Group 3. The case substantially meets the criteria for sudden infant death syndrome but evidence of a disease condition (such as focal bronchiolitis) is found but the role of the condition in causing or contributing to death is not truly known or is difficult to rule in or out as a causative or contributory finding

Group 4. The case substantially meets the criteria for sudden infant death syndrome but evidence of an external condition or risk factor exists (such as bedsharing with adults, sleeping face down on a soft pillow or adult mattress, etc) but the role of the external condition or risk factor in causing or contributing to death is not truly known or is difficult to evaluate, prove, or disprove.

Group 5. Something in the investigation precludes a diagnosis of SIDS, but the cause and manner of death have not been determined.

To complicate matters, within the recently (2001) published Position Statement by The American Academy of Pediatrics (AAP) on infant death investigation there is a list of findings which, if found at autopsy, should preclude a diagnosis of SIDS according to the AAP. This list includes factors like drugs (even medications) and old skeletal trauma (such as an isolated healing rib fracture). If the diagnosis of SIDS is to be avoided in such cases, the question of true cause of death arises which, in turn, raises the question of manner-of-death classification. Based on these considerations, the following guidelines are offered based on the five Groups as described above:

- Group 1. These are cases in which a specific cause of death is apparent (such as pneumonia, meningitis, congenital heart defect, overlaying, asphyxia from plastic bag, head trauma, etc). The cause of death should be reported and the manner of death classified as indicated based on the circumstances.
- Group 2. These "classic" SIDS cases may be certified as "Sudden Infant Death Syndrome" or "Consistent with Sudden Infant Death Syndrome," or "Consistent with the Definition of Sudden Infant Death Syndrome." The manner of death may be classified as either natural or undetermined, depending on the certifier's philosophy and approach. "Undetermined" is probably the most objective approach since the cause is, by definition, undetermined. From the statistical coding standpoint, either option would be ICD-coded to R95—Sudden Infant Death Syndrome. Whichever method is used, consistency within a given death investigation jurisdiction is recommended. Based on currently available information and concerns about infant deaths, however, "undetermined" manner is the recommendation of this Guide. If the manner is certified as undetermined in such cases, the injury information may be listed as unknown or not applicable if the local registrar requires those death certificate items to be completed. Also, if the "undetermined" option is used for this Group of cases, the medical examiner may explain to the parents (and others, as

needed) that the death may have been due to natural causes but our ability to know for sure is limited.

- Group 3. The cause of death in this Group may be stated as "Consistent with Sudden Infant Death Syndrome" or similar terminology. The condition(s) causing interpretive difficulties may be listed in Part II as an "other significant condition" (such as "focal bronchiolitis"). The manner may be classified as natural or undetermined using the same logic as described for Group 2 cases, with "undetermined" being the recommended option.

- Group 4. The cause of death in this Group may be stated as "Consistent with Sudden Infant Death Syndrome" or similar terminology. The condition(s) causing interpretive difficulties may be listed in Part II as an "other significant condition" (such as "face down on soft pillow"). The manner may be classified as undetermined because the external factor poses the distinct possibility of a non-natural death. In essence, these would be cases in which all findings point to SIDS except that there is one or more factors (bed sharing, face down on soft bedding, etc) that significantly heighten the possibility of an external cause being involved. If the case involves a decision whether to certify the cause of death as SIDS or back off from SIDS because of the presence of a possibly significant external factor, it is recommended that the cause of death be listed as "Consistent with Sudden Infant Death Syndrome," the external risk factors be listed in Part II as other significant conditions, and the manner of death be classified as undetermined. This approach allows for an objective report of the findings.

- Group 5. The cause of death may be simply stated as "Unexpected and Undetermined Cause" or similar wording. Terms such as "sudden unexplained infant death" should be avoided because the wording may cause confusion with sudden infant death syndrome and result in inappropriate ICD coding. Complicating factors such as bed sharing may be reported in Part II, as needed. The manner of death may be classified as undetermined. The injury items may be listed as unknown if the local registrar requires completion of the injury items in such cases.

In addition, there are several other scenarios related to infant deaths. Recommendations for these follow:

S1. Simultaneous, apparent SIDS deaths may be classified as **Undetermined**. The odds of simultaneous deaths due to natural causes is extremely low, making non-natural causes (accidental or homicidal) likely enough to use the undetermined classification. The cause of death may also be listed as undetermined or employ wording other than sudden infant death syndrome.

S2. Second and subsequent apparent SIDS deaths among siblings or common caregiver(s) may be classified as **Undetermined** (assuming there is insufficient information to classify them otherwise). The odds of a second SIDS is low, justifying

the undetermined classification. The cause of death may also be listed as undetermined or employ wording other than sudden infant death syndrome.

S3. Illegal termination of pregnancy may be classified as homicide if live birth occurred or as feticide if stillborn, regardless of length of gestation, and assuming that fetal demise was caused by the attempt to terminate pregnancy. . The criminal justice system can make decisions about which cases meet the criteria for prosecution.

S4. Death of fetuses and infants possibly due to maternal drug intoxication may be certified as accident unless there is a preponderance of investigative information indicating that the mother intended to terminate the pregnancy or life. In essence, the same manner would apply to the fetus/infant as if the mother died under the same circumstances.

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Appendix: The Review and Comment Process

After the draft of this Guide was completed in late September 2001, it was posted on the NAME web site for a 6-week period of review and comment by the NAME membership. The membership was notified of the review and comment process via NAME-L, NAME NEWS, and at the annual meeting in Richmond. All comments that were received have been reviewed and considered. Most feedback was positive, supportive of the concepts expressed, and without significant suggestions for modification of the guide. A few comments from other reviewers did raise important or controversial issues. This Appendix reports those comments and describes how the comments and issues were addressed. Editorial responses to the comments are [bracketed].

The authors wish to thank all of the individuals who took the time to provide comments about this Guide.

Scenario 9 (Ricochet). One reviewer felt that some deaths involving ricochet might better be classified as homicide, as might occur when a prison guard fires a warning shot that goes awry, then ricochets and kills an inmate. [Cases such as this require judgment and room is allowed for judgment. The scenario and suggestion offered in this Guide was directed more at an instance in which there are no law enforcement issues involved, as might occur at a firing range, while hunting, or around the home or on personal property. Further, some ricochets may actually occur when a person is aiming at and intending to strike a victim. In such cases, classifying the manner of death as homicide may be appropriate. Judgment is needed in each case because subtle differences in circumstances may have major impact on case interpretation, decision making, and classification].

Scenario 14 (anaphylaxis). Two reviewers felt that anaphylaxis, when there is no "mistake" made in exposing the decedent to the allergen—and if the exposure does not involve a trauma and toxin such as a bee sting and venom, should be classified as natural. [An example might be a reaction from eating shellfish or other food, and the argument for natural manner in such cases is compelling. However, deaths from anaphylaxis are rare, and they are usually unexpected, unanticipated, and involve some exogenous exposure (including substances in food) that causes death. For these reasons, this Guide recommends that the manner be classified as accident as a matter of routine so the subtle differences in allergens and exposure routes need not be weighed. Of course, another manner of death might be applicable in some cases, such as homicide if it were known that a person intentionally exposed another individual to the causative antigen with intent to do harm].

SIDS cases. One reviewer felt that a specific recommendation for manner of death in classic SIDS cases should be made rather than stating that either natural or undetermined is acceptable. [This section has been altered to recommend that the manner in classic SIDS cases be classified as undetermined since, by definition, the cause of death in SIDS cases is unknown and could involve external and non-natural factors. It is acknowledged that considerable evidence points to natural causes in such cases, but because the classification of manner of death does not impact coding in cases certified as SIDS, the

undetermined classification seems to be the most objective—at least on the basis of currently available information. One reviewer indicated agreement, in principle, with an undetermined manner in SIDS cases, but in practice, classifies the manner as natural because of the traditional view that a natural manner is less likely to adversely impact upon the parents/family.]

Concept of "Unclassified" Manner of Death. One reviewer pointed out that having the option of "unclassified" as a manner of death might be useful, for example, in some cases involving complications of therapy or for certain types of drug deaths and other scenarios. For example, the reviewer argued that chronic substance abuse involves intentional self-destructive behavior and has suicidal elements in addition to what might be argued as unintentional or accidental components (or even homicidal components if the drug were injected by someone else), and that the best option for manner of death would be "unclassified." The reviewer pointed out that "unclassified" differs from "undetermined" which actually means "could not be determined." [Although the federal standard death certificate (upon which the state death certificates are modeled) does not include an option for "unclassified," there may be one or more states in which such an option does exist. As a practical matter, however, it is recommended that "undetermined" and "unclassified" be used synonymously until such time that additional standard options are provided for manner-of-death classification. It is felt that in most instances, a given death can be reasonably placed into one of the existing categories (natural, homicide, suicide, accident, or undetermined) using the principles in this Guide. The "unclassified" option would not add much value to the classification system, although admittedly, it might make some deaths easier to "classify" by not having to make a decision].

A second reviewer also brought up the concept of "unclassified," and reported to use it as the manner of death in some cases in which none of the other categories seem appropriate-- for example-- a mental patient who thinks he can fly and jumps off a building. Or, as another example, the death of an infant from immaturity who was born alive after a legal attempt at abortion—in which arguments could be made for accident, homicide, or natural. [This seemingly rare sequence does make a good point, but again, the other available options for manner of death could be used in such cases].

Drunk driving. One reviewer pointed out that the death of a drunk driver in some respects fulfills the criteria for suicide (i.e., self destructive behavior), although such deaths are classified as accidents as a matter of convention. The same reviewer, however, reported the practice of classifying the manner of death as homicide when a person is killed by a drunk driver. [The recommendation in this Guide for such cases has been discussed elsewhere, and for the reasons stated (which include issues of intent and the law), that such deaths are more appropriately classified as accidents because doing so does not bar or obstruct applicable vehicular homicide laws or prosecution, if appropriate].

Volitional versus intentional. One reviewer requested clarification of these terms in reference to Section J on Page 7. [Webster's New World Dictionary defines "volition" as "using the will," deciding what to do," or "a conscious or deliberate decision or choice."

In contrast, one definition of "intent," and probably the best for the purposes of this Guide, is "the purpose at the time of doing an act." In the case of a straightforward suicidal gunshot wound of the head, the volitional acts include deciding to load a gun, putting it to the head, and pulling the trigger. The "intent" or purpose of the volitional act is to end one's life. In some cases, the intent to end one's life is less clear, although the volitional element of the act (such as placing a loaded gun to the head and pulling the trigger in Russian Roulette) is quite clear. The issue, then, is whether "intent" to die (the purpose of the volitional act) is inclusive of employing a recognized, potentially lethal weapon and accepting a definite and known risk of death during the action under consideration. Acceptance of this premise seems reasonable for one simple reason: why else would the victim have committed the act in the first place? It is accepting or even desiring the risk that serves as the purpose of the volitional act. One might state it as "but for the volitional act—the will, decision, and deliberate choice and the clear and present danger and risk of death brought about by the volitional act—a fatal outcome would not have been expected." It could be argued that other "sport" such a parachuting or rock-face climbing might fulfill the same criteria. However, the practical difference is that the "weapon" in these latter cases is not something normally regarded and widely recognized as a lethal weapon. The same "but for" statement can be applied in the context of volition when supporting the classification of a hunting "accident" as a homicide. "But for the volitional act of aiming the gun and pulling the trigger, the death would not have occurred." A major and unavoidable consideration is the type of weapon or agent involved and the likelihood of its use being lethal when employed toward a human being].

Scared to death. One reviewer was concerned that a death during an exclusively verbal argument (such as acute cardiac death) might be classified as homicide based on the principles in this Guide. [That was not the intent of the principles. Solely verbal arguments tend to escalate because of mutual participation of the parties. That situation differs from one in which one party commits a volitional act (such as yelling "boo" at a frail elderly person) with the apparent intent to scare or become alarmed—which constitutes assault. In this latter type of case, classification as homicide may be appropriate. Acute cardiac death precipitated by the stress of "normal" activities and events of daily life, such as vigorous verbal argument, is regarded as **Natural,** akin mechanistically to sudden death after consensual conventional sexual activity.]

Death during a struggle. One reviewer thought that death during a struggle with another person should be ruled homicide if there was physical contact. [In some cases, this is certainly appropriate—especially if the struggle was precipitated by a physical assault or battery initiated by the other person. There are, however, cases in which cardiac deaths occur from exertion that is job related (such as running after a suspected bank robber, or putting out a fire) in which a natural manner of death is appropriate. If such a death occurs during a felony committed by the second party (not the deceased), that death may be regarded as a homicide or felony murder by law enforcement authorities and the courts, but the medical classification of manner need not be based on an interpretation of such laws].

Car chases. One reviewer broached the subject of "innocent bystanders" killed during car chases, such as pedestrian struck and killed while the police are chasing a fleeing felon. Some regard the manner as homicide in such cases. [This situation is analogous to many others in that definition of the crime (such as felony murder) and legal responsibility for such deaths are defined in law. From the medical certification standpoint, unless there was convincing evidence that there was intent to kill the victim, the principles in this Guide would result in such deaths being classified as accidents. The manner would be the same regardless of whether the innocent bystander were struck and killed by the fleeing felon or by the police who were in pursuit of the felon].

Hostile environment. Regarding Scenario #38, two reviewers raised concern that some such deaths (e.g., infant inadvertently left in a hot car and dying of hyperthermia, or in a bathtub and dying of drowning) might be classified as homicide to differentiate such cases from those of lesser degrees of negligence. [This certainly is an option, but the principles in this Guide suggest that such cases be classified as accident unless there is clear evidence of intent to harm the child. In essence, ignorance or an untoward oversight would not, in and of themselves, result in classification as homicide. Classification of such deaths as accident would not preclude legal proceedings and criminal charges if the case met legal criteria of criminal neglect, abandonment, or some other crime. These deaths can be very circumstance dependent, and the degree of "neglect" does need to be considered. For example, the manner of death may be different in a case in which an infant was left in a hot car for 8 hours while the mother played slot machines compared with a case in which and infant was left for 30 minutes while the mother went shopping for baby food. A major problem occurs in interpreting the degree of neglect and just how much and what type of neglect are needed to classify the death as a homicide. This is why the more generic approach of "accident" is recommended for most cases. See also Principle #2, page 8].

Degrees of certainty. Three reviewers had concerns about the various degrees of certainty as discussed on Page 4. [Each suggested that the "beyond a reasonable doubt" (the wording used in the original draft) be changed to "beyond any reasonable doubt," and that change was made].

Regarding the certainty of the cause of death (compared with manner of death), a classification system was offered by one reviewer and drawn from Charles Hirsch's "A Cause of Death versus The Cause of Death:"

Class I. Absolute certainty, because pathological findings are inconsistent with continued life and the mechanism is obvious (such as rupture of the heart or bilateral massive pulmonary embolism);

Class II. Pathologic findings competent to explain death but without the development of complications that would promote them to Class I. The degree of certainty is determined by history and circumstances.

Class III. Marginal pathologic findings, compelling history, and exclusion of other causes.

Class IV. Pathologically negative but a positive history and exclusion of other causes (epilepsy would be an example of a natural condition in this Class, and electrocution without cutaneous burns is an example of a non-natural death in this Class).

Class V. Cause of death undetermined.

A second reviewer had additional comments about degree of certainty and offered the following scheme:

<50% may be viewed as "possible"
>50% may be viewed as "probable"

"Preponderance of evidence" is equivalent to "more likely than not" or "probable (>50%)," permits reasonable doubts, and is the degree of certainty used when making a determination of cause of death in natural deaths.[This point is well-taken in that arriving at a conclusion or establishing facts by a "preponderance of evidence" in civil actions, for example, means that something is more likely so than not so.]

"Certainty beyond a reasonable doubt" equates to "reasonable degree of medical certainty"-- this far exceeds 50%-- and is the degree of certainty required when considering homicide versus other, or accident versus suicide. It is the degree of certainty when there is no good reason to believe otherwise, or, that you would require to make the most important decisions in your life, or, the degree of assurance that a reasonable person relies upon in his/her most important business.

"Certainty beyond a possible doubt" is 100% or absolute certainty and is a degree if certainty that we cannot achieve because it means that there are no other possibilities.

A third reviewer offered the following definitions and concepts:

Speculation: the hypothetical is possible only in the sense that the scenario does not violate the laws of physics, but cannot be taken seriously by a reasonable person. Not admissible in civil or criminal court.

Reasonable possibility. A possible scenario that is admissible in court. It may be correct, but in the expert's mind, does not rise to the level of "more likely than not."

Opinion to a reasonable degree of medical certainty (or probability). In civil court, this means that the scenario is more likely than not, and essentially is synonymous with "preponderance of evidence." In criminal court, this means two things: The scenario is more likely than not, and there are no other reasonable possibilities (another reasonable possibility translating in the jury room to reasonable doubt). The former may be regarded as the "civil standard" for and the latter as the "criminal standard." The reviewer prefers to meet the "criminal standard" in order to classify a death as homicide, and if only the "civil standard" is met, will classify the manner as undetermined or, on rare occasion, classify the manner as homicide but comment that the classification meets only the "civil standard." To classify a death as suicide, the reviewer feels that only the civil standard need be met, but as a practical matter to avoid family complaints, a desirable level of certainty for classification as suicide is "way more likely than not."

The same reviewer points our that "clear and convincing evidence" is not easily defined, and to some, equates with "reasonable degree of certainty."

[The concepts presented by the three reviewers above seem workable and fall within those presented in this Guide on Page 4. However, the categories on Page 4 seem to provide a clearer conceptual progression of "degrees of certainty." The major point is that the degree of certainty needs to be higher when classifying a death as homicide or suicide than it might need to be in determining a natural cause of death].

Degree of certainty and suicide (Principle #1, Page 8.) One reviewer thought the recommendations for degree of certainty were confusing in the context of suicide classification, and emphasized that the burden of proof should be beyond a reasonable doubt but need not be beyond a possible doubt (or beyond any reasonable doubt). [These distinctions are subtle but important, and the principle is consistent with those in this Guide. The point is that absolute certainty is not needed to classify a death a suicide, but that the degree of certainty should exceed "more likely than not." In the context of this Guide, the burden of proof would be a preponderance of evidence, clear and convincing evidence, or beyond any reasonable doubt.]

Death in a hostile environment (Principle #2, Page 8). One reviewer suggested that classification of manner of death which occurs in a hostile environment depends on whether the disease itself is life threatening. Thus, because most seizure disorders are not life threatening, a fatality from seizure in water would be classified as accident (assuming there was immersion and/or drowning), while someone with severe cardiac rhythm disturbances who collapses in water might be better classified as natural. A second reviewer agreed and also stated the he does not regard a bathtub as a hostile environment for an adult—not like a swimming pool in some circumstances. The second reviewer also feels that most cardiac deaths in water do not significantly involve increased risk of death (because the mechanism is most likely irreversible V-fib as opposed to cardiac syncope or some other reversible mechanism) and would have been as likely to be fatal out of water. [There is obviously a difference in opinion among medical examiners on this point, and selection of manner as accident or natural in such cases does not reflect competence. The principles and recommendations in this Guide indicate that preference should be given to the non-natural manner of death if the hostile environment is thought to have accelerated death or significantly decreased the chances of survival. Thus, the severity and pathophysiology of underlying disease do play a role in decision making, but if the hostile environment played a role, preference is given to the non-natural manner of death. Certainly, there are instances in which role of the hostile environment is non-contributory, and a natural manner of death in such cases is appropriate].

Job-related cardiovascular death (Scenario #18). One reviewer suggested that the fatal heart attack of a firefighter putting out a fire at the scene of an arson should be classified as a homicide. [The principles and recommendations in this Guide indicate that natural death (if no smoke inhalation was involved) is the preferred option. Certain types of jobs are responsive in nature and potentially stressful from the physiologic exertion standpoint, ands certain risks are accepted. If the fire were accidental in origin, the death would probably not be classified as an accident (again, assuming that death was due solely to exertion and ASCVD, not smoke inhalation), so why classify the death as homicide if the fire were the result of arson? By extrapolation, one could then argue that

the death of any law enforcement officer from ASCVD while chasing an alleged criminal or suspect could be classified as a homicide, which does not seem appropriate and opens up cans of worms regarding job-related and other types of death.]

Therapeutic complications (Scenario #23). One reviewer pointed out that at least one jurisdiction has the option of listing the manner of death as "therapeutic complication" and the "but for" question is used in decision making. "But for the treatment, would the patient likely died at his time?" For example, a person who dies on the operating table during surgery for a ruptured abdominal aneurysm would be regarded as natural in manner. A person who dies of postoperative pneumonia following an elective cholecystectomy would be classified as a therapeutic complication. [The principles in this Guide would result in both deaths being classified as natural. The option of therapeutic complication is not available in most states. The important point is that the cause-of-death statement reflect the complication of treatment and the underlying disease or condition being treated. Therapy-related deaths and their classification of manner as accident, natural, or undetermined are covered elsewhere in this Guide and other publications].

Forcing the police to shoot to commit suicide (Scenario #24). One reviewer pointed out that these deaths can be very circumstance-dependent and some are suicides. [The principles in this guide provide room for judgment, although, in general, the recommendation is to certify such deaths as homicide—for the reasons stated in Scenario #24].

Disease and intoxication/injury (Scenario #41). One reviewer emphasizes that if an injury or intoxication plays a role in causing death, whether cited in Part I or Part II of the cause-of-death statement, death cannot be certified as natural, and that the natural classification is reserved for deaths that are exclusively (100% natural). [In general, these advisories are true. Generally, anytime an injury or poisoning is mentioned in Part I or Part II of the cause-of-death section of the death certificate, the injury or poisoning should be regarded as having contributed to death, and the manner of death should be classified as other than natural. There are rare instances, however, in which a very minor accidental trauma may exacerbate a very significant disease, as described in Scenario #41, or as might occur in a hemophiliac who is having an episode of serious bleeding that is exacerbated by what would be otherwise considered as trivial trauma. This discussion pertains to accidental trauma only. To be sure, if an accidental injury is cited in Part I or Part II, the date, time, place, and how injury occurred items must be completed. There is some debate, however, even among registrars and nosologists, whether completion of these items always requires a manner of death other than natural, especially if the injury is cited in Part II. The discussion in Scenario #41 simply suggests that this option is available on the very rare instance in which it may be needed].

Other Comments. Various other comments were offered, and they are listed here, along with editorial comments in response [bracketed]:

- Two manners of death should not be listed in a given case. For example, if an elderly person has heart disease that is exacerbated by a fall with hip fracture, one should

avoiding citing the manner as natural and accident. [One should be selected based on principles in this Guide and elsewhere (see suggested reading)].

- Using the "unclassified" option should be avoided. It is typically used as an easy way out when wanting to avoid a controversial decision. [This has been discussed above].
- Refusal to be treated or having one's treatment withdrawn is not suicide, but rather, allowing the disease to take its natural course [Agreed].
- Death due to "natural disease" is not always synonymous with natural manner of death, as may be the case in child medical neglect [Agreed].
- Susceptibility or vulnerability of the victim does not absolve the assailant of criminal responsibility, and one takes the victim as he/she finds him. [Agreed. This is the argument for classifying "scared to death" cases as homicide, among other examples].
- People who die of complications of therapy for treatment of "homicidal" injuries can be managed using a general rule: if the injury is life threatening, then the manner is homicide—if the original injury is not life threatening, then the therapeutic complication should dominate. [This brings up the concept of a supervening cause, which is a legal term. In such cases, whether an inflicted injury is life threatening will be a topic of debate, as will the relative severity of the initial injury and the complication of therapy. Most cases can probably be managed using the "but-for" principle—"but for the inflicted ("homicidal") injury, the therapeutic complication and death would not have occurred." There are cases, however, in which the injury is so trivial that classification as homicide would not be appropriate, and there are cases in which a clearly distinct, supervening cause may come into ply. An inflicted bite wound would not normally be construed as life threatening, but if death occurs from infection of the bite wound, the death may be appropriately classified as homicide, as it might be if antibiotics used to treat the infection caused fatal anaphylaxis. "But for the bite wound, death would not have occurred." Prudent medical judgment is needed in such cases. Strict dogma cannot be uniformly applied. The major points are that one needs to be able to explain his/her reasons for the classification, and in classifying the death, one should not give too much emphasis to legal definitions and interpretations.]
- One does not need to demonstrate intent to certify a death as a homicide. Intent distinguishes murder from various degrees of manslaughter and are legal distinctions that medical examiners do not make. [Agreed, and this has been addressed elsewhere in this Guide.]
- Manner of death should be classified as natural in pathologic hip fractures from osteoporosis, metastases and the like. [Agreed, and discussed elsewhere in this Guide].
- In deaths resulting from medical treatment complications, the underlying disease or injury for which treatment was given should be included in the cause-of-death statement—for example—"anaphylaxis due to penicillin treatment for gunshot wound of abdomen." [Agreed, and addressed in other publications regarding cause-of-death statements—see suggested reading.]
- By convention, we certify chronic alcoholic deaths as natural even if the person as acutely intoxicated by ethanol (only). [This is probably a common approach and appropriate in most cases because alcohol concentrations in chronic alcoholics are

difficult to interpret as to their significance. The toxicologic findings must be viewed in the context of other case information and circumstances. See Scenario #3.]

- Russian Roulette deaths need to be examined on a cases by case basis because some may be accidents due to testosterone and/or alcohol or drug intoxication. [Each case does need to be examined on its own merit. However, the interpretation of the significance of hormones and intoxicants and their effects on judgment and behavior are subjective and prone to error. For this reason, classification as suicide is the general recommendation of this Guide. See Scenario #10.]
- If a pedestrian is truck by a fleeing felon, the death of the pedestrian should be certified as homicide. [This is discussed elsewhere in this guide, and because the felony may not be established at the time of certification, among other reasons, the general recommendation in this Guide is to certify such deaths as accidents. See Scenarios #11 and #27.]
- Due to the illegal act of administering an illegal substance to another, we certify such deaths (see Scenario #15) as homicide because intent is not needed to classify a death as homicide. [The recommendations in this Guide differ, based partially on the assumption of consent of the victim and other factors. See Scenario #15.]
- The fetal death certificate may not have a place to indicate manner of death. [Agreed. But the issue may need to be addressed elsewhere, such as an investigative or autopsy report.]
- Birth related infant deaths (dystocia, nuchal cord, etc) are natural. [Agreed, as are deaths from birth-related anoxia (such as cerebral palsy) if wholly related to the birthing process and no external causes were involved.]
- One reviewer pointed out that the manner of death as recommended in Scenarios 12,13, and 14 are consistent with an epidemiological concept articulated by Haddan—that acute, solitary environmental insults tend to be regarded as accidental, while chronic repetitive insults tend to be viewed as natural. [Good (and convenient) historical point].
- One reviewer, in regard to Scenario #15, reserves the use of "overdose" for incidents in which the dose is known and excessive, and does not use the term in regard to street drugs and illicit drug use. [This is a reasonable approach and a good point. The word "overdose," which appeared in the original version of this guide, has been replaced with "toxicity/poisoning"].

Suggested Reading

Note: Upon reading the referenced articles, you will discover that opinions and approaches vary regarding the practice of manner-of-death classification—and may vary from the recommendations in this Guide. The references are provided as background information and as resources, when needed.

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Massello W. The Proof of law in suicide. J Forensic Sci 1986;31:1000-08.

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Petty CS. Multiple causes of death: the viewpoint of a forensic pathologist. J Forensic Sci 1965;10:167.

Most standard forensic pathology texts have some discussion of cause and manner of death (Spitz and Fisher's Medicolegal Investigation of Death has always contained a good discussion of the issues). There have also been more than 250 postings on NAME-L regarding manner of death issues and commentary. These can be viewed by NAME-L members by searching the NAME-L archives at www.listserv.emory.edu

ATTACHMENT H
Letter Opposing Manner of Death Use

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JOURNAL OF FORENSIC SCIENCES AAFS

LETTER TO THE EDITOR

Commentary on: Dror IE, Melinek J, Arden JL, Kukucka J, Hawkins S, Carter J, et al. Cognitive bias in forensic pathology decisions. J Forensic Sci. https://doi.org/10.1111/1556-4029.14697. Epub 2021 Feb 20.

See Original Dror et al Article *here*
See JFS Editor-in-Chief Preface *here*
See Authors' Response to Peterson et al Commentary on *here*
See Peterson et al Response to Authors' Response *here*
See Authors' Response to Peterson et al Response *here*

Editor,

It was with great concern that we read the article "Cognitive bias in forensic pathology decisions" by Dror et al [1]. This is a fatally flawed article and should be retracted. There are numerous errors in the paper. Only the most egregious will be discussed in our response.

The first, and perhaps the worst error made by the authors, is the statement, unattributed and untrue, that caretaker relationships are "medically irrelevant." In the first scenario presented, the caretaker was a biologically unrelated male. In the second scenario, it was a grandmother.

There is extensive literature on the medical relevance of this distinction [2–13]. For instance, Daley and Wilson found that preschoolers living with one natural and one stepparent were 40 times more likely to be abused [2]. A larger study published in 2019 found that the odds ratio of abuse in the case of a boyfriend caretaker was 169.2, while in the case of a grandmother, it was 0.34 [13]. Thus, the odds ratio for the boyfriend is 497 times that of the grandmother in that study. The authors of that study conclude "*In clinical practice, questions regarding caretaker features may improve recognition of the abused child.*" They state in their discussion "*Our findings highlight the importance of asking about the caregiver present at the time of injury as part of a medical history as certain caregivers portend a greater likelihood of abuse and injury severity, and the child's safety may be at risk if sent home to an unsafe environment.*" We concur with our pediatric colleagues that this information is not only "medically relevant," but, unlike the authors of this paper, understand that it is important in manner determination, just as it is important in evaluation of injury in the living victim. Not only is the caretaker relationship a predictor of abuse, but it is also correlated with the type of abuse. For instance, Weekes-Shackelford and Shackelford found that biologically unrelated male caretakers are more likely to kill the children in their care by means of blunt trauma, while genetically related fathers were more likely to shoot or asphyxiate their victims [6]. To claim that the combination of biologically unrelated male caregiver and blunt trauma death is "medically irrelevant" flies in the face of the medical literature and established clinical practice.

The authors of this paper include senior forensic pathologists. It is unlikely that they are ignorant of the important literature cited here. The authors may believe that these studies are flawed, or the results are inaccurate. If so, they should make the case for their conclusions. They do not do so—no relevant literature is cited in their work. The fact that they merely claim that this information is "medically irrelevant" without recognizing that it is considered "medically relevant" to most of the medical community is as inexplicable as it is incorrect.

Second, the focus on race in this article moves the construction of the study from inexplicable to absurd. This is a study primarily of whether or not forensic pathologists recognize the medical literature on caretaker relationship. To introduce race in an obscure fashion (race of the decedent vs. race of the caretaker) appears as an effort to label the survey responders, and their colleagues by proxy, as racists. Had this survey been done with the races reversed, the result would have been that White cases were more likely to be called homicide and Black cases more likely to be called accident. That result, however, would not have been as easily picked up by the Washington Post and touted in the political and policy arenas.

There may be unconscious race bias in the field of forensic pathology, but the conflation of race with caretaker relationship in this article does not provide evidence of it. These authors essentially conflated caretaker relationship and race to provide themselves with an opportunity of making accusations of race bias—a perfect example of injection of structural bias into a conclusion. It is certainly not evidence that their proposals would remove it.

Third, the authors promote misunderstanding of the methods and purpose of manner determination. Manner determination is not a "scientific" determination. It is a cultural determination that places

a death in a social context for the purpose of public health statistics [14,15]. Manner determination is by no means uniform in practice—for example, at least one large office deems death by drug overdose as "undetermined" with respect to manner, while many others by convention deem such cases "accidental." The criteria are guided by policy promulgated by the National Association of Medical Examiners (NAME) and the Centers for Disease Control and Prevention (CDC). This is why the NAME guidelines explicitly acknowledge that there is no "right" answer in many manner determinations, and that the goal is consistency rather than some nonexistent criteria for correctness [16]. Manner determination is designed to assist public health agencies and the CDC, and it is they who determine what should and should not be considered relevant. The fact that this tool for aggregate statistics often does not fit well in court is not a criticism of manner determination by forensic pathologists. It is instead a criticism of misuse of manner determination by the courts. The idea that a social determination that integrates medical findings with cultural and social context should not use cultural and social competencies is incorrect.

Fourth, there was no guard against the bias of the small population used in the survey. The National Association of Medical Examiners has in place a procedure for providing information for surveys such as this in order to make sure that the sampling is complete and unbiased. Rather than go through this simple procedure, the authors bypassed it in order to contact a selected subset of NAME membership. There was no indication of how the bias of this population was tested. Factors such as practice location, experience, and even office policy influence manner determination; none of these factors were delineated in this paper. In a paper purporting to describe the behavior of forensic pathologists, the authors do not know how many respondents were actually board-certified forensic pathologists. They did not ask.

The authors promote the use of linear sequential unmasking to hide information from the forensic pathologist through a theoretically unbiased system of outside experts. However, the fact that the authors promote this structurally biased and agenda-driven study as an example of unbiased science is itself an argument against the establishment of such gatekeepers. Such an unwarranted intrusion into what is essentially a doctor-patient relationship would replace physician judgment with the agenda and biases of those with no case "ownership" who in any case would not be asked to defend their judgments under oath in court.

This study represents an abject failure of the peer review process at the Journal of Forensic Sciences. Certainly, an argument can be made that race issues are a worthwhile discussion to have in forensic pathology; however, promulgation of structurally biased, agenda-driven studies such as this under the pretense of "unbiased" science is not the way to do it. This paper should be retracted by the editorial board of this journal. If it is not, the *Journal of Forensic Sciences* and the American Academy of Forensic Sciences risks ceding its reputation from advancing objectivity and rigorous scientific method in forensic science to promoting agenda-driven editorial content disguised as medical literature.

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