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STATE OF MICHIGAN
IN THE SUPREME COURT

PEOPLE OF THE STATE OF MICHIGAN,
Plaintiff-Appellee,

v **No. 163939**

MILTON LEE LEMONS,
Defendant-Appellant.

Court of Appeals	**No. 348277**
Third Circuit Court	**No. 06-004818**

PLAINTIFF-APPELLEE'S SUPPLEMENTAL BRIEF
ORAL ARGUMENT REQUESTED

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SUMMARY OF ARGUMENT

This case revolves around two contrasting factors: a defendant's admission to committing a homicide that is perfectly consistent with the victim's autopsy and a post-conviction challenge to the science of shaken baby syndrome.

As will be discussed below, this is a rare case. Usually, shaken baby syndrome and abusive head trauma cases revolve exclusively around the question of what happened during a period of time where a defendant was alone with a very young victim and claims to have had no traumatic contact with that child, yet that victim still suffers from abrupt intense traumatic intracranial injuries. Those cases usually end up in battles between experts either during trial or after trial, as both sides attempt to use science to prove what happened during the time when the defendant was alone with the victim.

This case, however, is very different. The People provided the factfinder with overwhelming evidence of defendant's guilt. That is: defendant admitted to violently shaking the victim; shaking is consistent with the victim's cause of death; and there no reasonable cause to doubt defendant's admission. Furthermore, defendant showed consciousness of guilt by refusing to call the authorities, despite being repeatedly told to by a neighbor. Finally, defendant personally expressed fear on three separate occasions that the act of shaking might have caused the injuries to the victim, before making the full admission to the police. Those facts make this case a poor vehicle to challenge the science of shaken baby syndrome and abusive head trauma: we know that that was how Nikita Lemons died.

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Nevertheless, if this Court wants to weigh in on the merits of the underlying science, the People must still prevail. There is good reason to credit the overwhelming weight of the medical community, which holds that shaken baby syndrome and abusive head trauma are forensically solid diagnoses. Of course it is true that there can never be (and never should be) controlled studies in which infants are violently shaken. But that does not mean that no expert could ever give an opinion that violent shaking caused an infant's death. There are plenty of well-accepted scientific theories that cannot be directly tested or observed.

SBS—shaken baby syndrome—is the diagnosis of a pure shaking form of abusive head trauma (AHT). The diagnoses of both AHT and SBS are well recognized by the relevant scientific community. The facts established at the hearing show that regardless of the label they are given, experts that disagree with shaking as a cause for the constellation of injuries in AHT/SBS cases are an extremely small, fringe minority. Dr. Sandeep Narang et al conducted a study of relevant physicians that deal with child abuse at the ten leading children's hospitals titled *Acceptance of Shaken Baby Syndrome and Abusive Head Trauma as Medical Diagnoses (Acceptance of SBS Study)*.[1] This study analyzed the professional opinions of these physicians to see where there was general agreement, where there was conflict in opinions, and where there were outlying "fringe" opinions. "Fringe" opinions were those opinions that were shared by less than five percent of responding physicians.

[1] 903-08b.

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The *Acceptance of SBS Study* found that 96.7 percent of respondents agreed that SBS and/or AHT were valid diagnoses.[2] Of that group that agreed with SBS or AHT, 89.7 percent of those reported that their opinion was informed by both their own clinical experience and the scholarly literature.[3] Of the just six respondents who disagreed with the diagnosis of AHT, five of them agreed that shaking with or without impact was likely to cause subdural hemorrhage and retinal hemorrhage, making their disagreement appear to be semantic only.[4] Meanwhile, the belief that SBS was invalid and the belief that AHT was invalid were reported as fringe opinions with less than five percent of respondents supporting each of those statements.[5]

SBS and AHT are widely accepted and have consistently been upheld in scientific studies. Any "junk science" in this case falls under the category of the opposition to SBS/AHT offered by the defense experts. As in the trial court below, the People acknowledged that some of the studies and papers relied on by those defense experts were reliable. But those supportive materials were also beside the point when related to SBS/AHT. Other studies attempted to make vast leaps of logic by comparing dissimilar types of injuries. That is, the defense tried to compare Nikita's injuries to what takes place in a car crash, or when adult primates are shaken, or when models of infants are shaken, to show that the forces and results measured in the controlled settings do not account for the injuries observed in allegedly shaken babies. But a

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[2] 905b.
[3] 905b.
[4] 905b.
[5] 905b.

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car crash is a single shake, a baby's neck and brain are nothing like an adult primate's, and the baby models that researchers experimented on were shown to have little resemblance to an actual human in the areas that counted most, again the neck and head. In other words, the defense experts compared apples to oranges and unsurprisingly concluded that they could not be the same.

The other avenue of attack taken by the defense—mathematical computations of the forces generated by shaking on an infant—used made-up numbers in their computations or recognized that their calculations did not take into account all necessary variables. Obviously, those estimates could not be shown to have any firm basis in reality, and thus could not support the conclusions drawn by the writers.

Judge Kenny rightly discounted both types unscientific opinions. The Court of Appeals provided an opinion that ultimately reached the correct result. Accordingly, the People ask that this Court deny defendant's application for leave to appeal or affirm defendant's conviction.

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COUNTERSTATEMENT OF QUESTIONS PRESENTED

I

A defendant is only entitled to a new trial if new evidence makes a different result probable on retrial. Here, any retrial would still feature defendant's admission to shaking the baby until she stopped breathing and the autopsy report indicating that the victim's cause of death is consistent with shaking. Is defendant entitled to a new trial, even though the new evidence would not make a different result probable at retrial?

The trial court answered, "No."
The Court of Appeals answered, "No."
The People answer, "No."
Defendant answers, "Yes."

II

A proponent of scientific evidence must show both that the scientific principle is reliable and its application to the case is sound. Here, defendant presented various biomechanical principles that could not be reliably applied to the instant case. Did the trial court err by excluding biomechanical evidence that was not reliably applied to this case?

The trial court answered, "No."
The Court of Appeals answered, "No."
The People answer, "No."
Defendant answers, "Yes."

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III

Scientific evidence that is based in mere opinion or that is misinterpreted or wrongly applied to the facts of a case must be excluded. Here, the trial court excluded testimony on the alleged "triad" that was improperly applied to this case and an alternate theory regarding HIE that was based on nothing more than opinion. Is defendant entitled to a new trial based on evidence that was rightly excluded?

The trial court answered, "No."
The Court of Appeals partially answered, "No."
The People answer, "No."
Defendant answers, "Yes."

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COUNTERSTATEMENT OF FACTS

The Facts of the Case

Although this case is tragic and horrific, the facts of what happened are relatively simple. On October 10, 2005, the victim, Nikita Lemons, was about two and a half months old. Her mother, Lori Lemons, went to work at 2:30 p.m. and left the baby with the father, defendant.[6] Both Lemons and defendant were nursing assistants.[7] Lemons's mother, Pamela VanMeter, lived across the street.

During the evening, defendant went next door to the home of Renee Zdyb and asked for help because baby Nakita was not breathing.[8] Zdyb told defendant to call 911.[9] Instead, defendant called Lori Lemons.[10] It was around 7:00 p.m. when defendant called Lemons and said that the victim was no longer breathing.[11] Zdyb told defendant again to call 911, so defendant took the phone and called VanMeter for assistance.[12] Zdyb again told defendant to call 911, because she did not know CPR.[13] Defendant claimed to know CPR and took the baby. Zdyb seized the opportunity, picked up the phone, and called 911.[14] VanMeter attempted a gentle infant CPR, but had no success.[15] When Lemons got to the scene, she saw her daughter unresponsive on the floor as she was

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[6] 13b.
[7] 7-8b.
[8] 95b.
[9] 95b.
[10] 96-97b.
[11] 96b.
[12] 97b.
[13] 97b.
[14] 97b.
[15] 48-50b.

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being worked on by the paramedics.[16] Similarly to VanMeter, the EMS team used gentle infant compressions for CPR.[17]

The victim was brought to Annapolis Hospital and, from there, was air-lifted to University of Michigan Children's Hospital in Ann Arbor.[18] The victim never again regained consciousness. She was pronounced dead at 6:28 a.m. on October 11, 2005.[19] While at each hospital defendant expressed fear that an act of shaking the victim had caused the victim's injuries.[20]

Defendant initially told the OIC, the now-Chief, John Williams, that the victim went to bed fine. Defendant claimed to awake to banging. Defendant's son was banging on the wall because the victim had stopped breathing.[21] Defendant claimed to have shaken the victim to wake her up.[22] Defendant was afraid that the shaking had been too hard.

After the officer informed defendant that the victim died due to shaking, defendant changed the story.[23] Defendant said:

> At about 6:20, my son started fussing and then she started crying also. I went into the room to get him out, but picked her up instead. She wouldn't stop crying and he was still crying too. So I shook her three or four times to get her

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[16] 15-16b.
[17] 77b.
[18] 17b.
[19] 18b.
[20] 37-38b.
[21] 169-70b.
[22] 169-71b.
[23] 170-71b.

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to be quiet. She stopped crying and started spitting up formula, but was unresponsive.[24]

Williams continued to ask defendant questions, including:

[Williams] [O]n a scale of one to ten, ten being shaking her very hard, how hard did you shake Nikita?
[Defendant] [S]even.
[Williams] [W]hat was Nikita's head doing as you shook her.
[Defendant] [B]ack and forth. I went blank. I just wanted her to stop crying.

***

[Williams] [H]ow did you feel when you were shaking her?
[Defendant] [V]ery angry, depressed. It was a combination of things.

***

[Williams] [W]hat did you intend to do when you shook her?
[Defendant] [T]o quiet her up.

***

[Williams] [D]o you know shaking an infant can be fatal.
[Defendant] Yes. I've seen it on TV and heard about it. [sic]
[Williams] [A]nd you're statement you said after you shook her, she was unresponsive. What did you mean[?] [sic]
[Defendant] [S]he was not saying anything with her head to the side and milk was coming out of her mouth.
[Williams] [W]hy didn't you tell anyone what happened?
[Defendant] I didn't want anyone to be disappointed in me.[25]

[24] 170-71b.
[25] 173-74b.

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The autopsy was handled by the Washtenaw County Medical Examiner's office. The medical examiner who conducted the autopsy, Dr. Bader Cassin, discovered that the victim suffered from bilateral retinal hemorrhages, optic nerve sheath hemorrhages, subdural hemorrhaging (intracranial bleeding), brain swelling, and had a fractured shoulder.[26] After reviewing the victim's medical history, including an prior incident where the baby was gasping that resulted from an allergy to milk,[27] Cassin diagnosed that the victim died from shaken baby syndrome (SBS) and described the basics of the diagnosis to the Court.[28]

The trial court, the Honorable Timothy M. Kenny, found that defendant acted in anger and violently shook the victim, resulting in her death. On August 11, 2005, defendant was convicted of first-degree felony murder[29] and first-degree child abuse.[30]

Defendant's successive motion for relief from judgment and the* Daubert *hearing.

Defendant filed a successive motion for relief from judgment. The trial court found that most of defendant's claims were barred by MCR 6.502. The trial court held that defendant had met the requirements for one claim under MCR 6.502(G)(2); a claim of newly discovered evidence. Defendant's claim of newly discovered evidence asserted that there had been a "sea change" in how the scientific community now viewed the

[26] 122-30b.
[27] 122-30b.
[28] 120-30b.
[29] MCL 750.316(1)(b).
[30] MCL 750.136b(2).

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diagnosis of SBS, that SBS was no longer good science, that the victim's death could not have resulted from SBS, and that there were alternate explanations for the death of the victim. The People moved to exclude defendant's so-called scientific evidence because it failed to meet the standards provided by MRE 702, *Daubert v Merrell Dow Pharmaceuticals, Inc.*,[31] and its progeny. The same trial judge who had heard the initial case, Judge Kenny, held an extensive evidentiary and *Daubert* hearing throughout 2017.

Ten expert witnesses testified during this hearing. The experience, credentials, and specialties of the experts called varied a great deal. The first defense expert was Dr. John Galaznik. Galaznik received his full board certification in pediatrics in 1979. He practiced general pediatrics until 1980 and then went to work at the University of Alabama, where he continued to work "provid[ing] care to active, vigorous college students." As of the hearing, he was retired and only worked at the University clinic part time.[32] Galaznik did not establish any clinical experience in the realm of child abuse. The second defense expert was Dr. George Nichols. Nichols practiced in forensic pathology for approximately 20 years.[33] He retired from his position as a medical examiner approximately 19 years ago.[34] Since then he has worked as a consultant, primarily for criminal defendants.[35] The third defense expert was Dr. Patrick Barnes. Barnes was a neuroradiologist, who also

[31] *Daubert v Merrell Dow Pharm., Inc*, 509 US 579 (1993).
[32] 192-93b
[33] 300-01b.
[34] 326b.
[35] 301b.

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claimed specialty as a pediatric radiologist, but lacked the corresponding certificate.[36] Barnes did not produce the official skeletal survey readings, which are conducted by pediatric radiologists.[37] He reviews the official surveys as part of the local child abuse team and provides his additional readings at the team meetings.[38] He is a member of the Society for Pediatric Radiology. The fourth defense expert was Dr. Bader Cassin, the forensic pathologist who performed the autopsy on the victim, Nikita Lemons, when he worked for the Washtenaw County Medical Examiner's Office. The fifth defense expert was Chris Van Ee, a biomechanical engineer at a local design firm, who specializes in impact and orthopedic biomechanics.[39] Van Ee was called in rebuttal and did not know the specifics of the instant case, but simply was called to point out the utility of biomechanical engineering. The sixth and final defense expert was Dr. Roland Auer. Auer was a neuropathologist and was called in rebuttal. As of the time of the hearing, Auer had no clinical or research experience with shaken baby syndrome or abusive head trauma cases, aside from providing his opinion in court cases.[40]

The People's first expert was Dr. Jeffrey Jentzen. Jentzen was a forensic pathologist. He was the Washtenaw County Medical Examiner, the Director of Forensic and Autopsy Services at the University of Michigan, and the former president of the National Association of Medical Examiners. The People's second expert was Dr. Peter Strouse.

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[36] 433-34b.
[37] 433-34b.
[38] 433-34b.
[39] 791b.
[40] 866b.

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Strouse is a certified pediatric radiologist. Strouse was the Director of Pediatric Radiology at C.S. Mott Children's Hospital, the president of the Society for Pediatric Radiology, the Editor of the scientific journal *Pediatric Radiology,* and the original radiologist in this case.[41] The People's third expert was Dr. Dan Davis. Davis was a forensic pathologist who clinically dealt with numerous child abuse cases and conducted an experiment to show approximate rotational movement of an infant brain within its skull when shaken.[42] The People's fourth and final expert was Dr. Cindy Christian. Christian is a certified child abuse pediatrician and was a child abuse pediatrician before board certification existed in that discipline. Christian was the immediate past chair of the American Academy of Pediatrics (AAP) Child Abuse and Neglect Committee, a member of numerous child abuse teams and medical oversight boards, and was the author of the seminal position papers by the AAP defining abusive head trauma and discussing shaken baby syndrome.[43]

Although their credentials varied, all the expert testimony was largely confined to two topics: (1) the validity of both shaken baby syndrome (SBS) and abusive head trauma (AHT) and (2) whether an alternate cause explained the victim's injuries.

The validity of SBS and AHT were questioned by some of the defense witnesses. The defense experts asserted two types of anti-SBS claims. The first type of anti-SBS claims were based on select scientific

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[41] 496-99b.
[42] 585-86b.
[43] 658-64b.

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literature that they claimed undermined SBS. The second type of anti-SBS claims were based on select biomechanical papers. The defense experts asserted three biomechanics-based claims: some biomechanical models indicate that shaking alone does not generate enough force to match scaled head-injury criteria from simulated front-end car accidents; some experiments indicate that before shaking could cause brain injury, according to the car-accident injury criteria, catastrophic neck damage would occur; and some animal studies do not exhibit the same injuries present in human SBS cases.

The second assertion levied by the defense experts was the claim that an alternative cause would better fit the victim's injuries at the time of death. Here, the defense experts made numerous assertions or suggestions, in which not all of their experts joined: (A) there was not enough blood in the victim's head cavity for SBS to have happened, (B) there might not be a fracture in the victim's shoulder, (C) the victim's shoulder may have fractured during autopsy, (D) the victim may have died from non-traumatic hypoxia (choking) and then the resuscitative efforts caused the victim's traumatic injuries, and (E) the victim had rickets, which caused the shoulder fracture and the associated extreme lack of calcium caused choking.

The People's experts responded to the defense experts' attacks on the validity of SBS and AHT through affirming scientific studies, their own extensive experience, and a thorough discussion of the rather impressive faults of anti-SBS studies relied upon by the defense. The People's experts also refuted the claims regarding the instant case's diagnosis of SBS and the varied suggestions of alternate causes.

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Numerous scientific articles were also provided to the trial court in support of the People's experts' opinions.

In an extensive written opinion, the Hon. Judge Kenny denied relief, holding that the defense theories failed to meet the requirements of *Daubert* and *Joiner*. Therefore, the claims that made the foundation of defendant's newly discovered evidence failed and the motion for relief from judgment was denied.

The Court of Appeals affirmed the trial court's denial of the motion for relief from judgment. Nevertheless, it held that the trial court abused its discretion in failing to admit certain evidence including: Cassin's testimony, the defense "triad" theory, and the defense alternate injury theory centering on hypoxia. Despite this holding, the Court of Appeals also found that the wrongfully excluded evidence would not have made a different result probable on retrial, due to the extremely damaging fact that defendant's admission was consistent with the victim's cause of death.

This Court has ordered arguments upon defendant's application for leave to appeal. This Court's questions will be discussed below.

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ARGUMENT

I.

A defendant is only entitled to a new trial if new evidence makes a different result probable on retrial. Here, any retrial would still feature defendant's admission to shaking the baby until she stopped breathing and the autopsy report indicating that the victim's cause of death is consistent with shaking. Defendant is not entitled to a new trial, because the new evidence would not make a different result probable at retrial.

Standard of Review

A trial court's decision on a motion for relief from judgment is reviewed for an abuse of discretion and the trial court's findings of fact are reviewed for clear error.[44] An abuse of discretion occurs when the trial court makes a decision outside of the range of principled outcomes.[45]

Any admissible newly discovered evidence is evaluated under the test established in *People v Cress*:

> For a new trial to be granted on the basis of newly discovered evidence, a defendant must show that: (1) the evidence itself, not merely its materiality, was newly discovered; (2) the newly discovered evidence was not cumulative; (3) the party could not, using reasonable diligence, have discovered and produced the evidence at trial; and (4) the new evidence makes a different result probable on retrial.[46]

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[44] *People v McSwain*, 259 Mich App 654, 681 (2003).
[45] *People v Babcock*, 469 Mich 247, 269 (2003).
[46] *People v Cress*, 468 Mich 678, 692 (2003) (citations and quotation marks omitted).

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A defendant bears the burden of establishing each of the four parts of the *Cress* test.[47]

Discussion

Defendant is not entitled to relief or a grant of this application, because the evidence provided at the evidentiary hearing does not make a different result probable on retrial. This section will answer the third question posed by this Court in its order of September 30, 2022, which is the most important question posed by this Court.

This case is unlike the vast majority of abusive head trauma and shaken baby cases that are brought to trial. In most cases, the scientific findings are the primary evidence used to solve a mystery. These cases occur when a baby suffers a particular type of severe intercranial injury causing death or serious injury and there is no viable explanation. Without clear evidence to explain the mystery of the baby's death, a duel of experts is often used to aid the jury's determination of whether a defendant abusively shook the child, resulting in the child's death. In such a case, the People's experts will attempt to show that the defendant shook the child by explaining that—in the absence of any other massively traumatic event, such as a car accident or crushing damage—abusive shaking is the only way to achieve those injuries. Then, the defense will typically call experts in the attempt to question the medical examiner's diagnosis and present alternative hypotheses to explain how those injuries occurred. The jury is then tasked with considering the testimony of the experts and the circumstances and determining

[47] *People v Rao*, 491 Mich 271, 274 (2012).

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whether the People have established beyond a reasonable doubt that the defendant in question abusively shook the victim and caused the injury.

This case is not like the mystery-style cases described above. In a case where the science is the only proof of the actus reus, depriving the jury of half the information could potentially cause prejudice to the defendant. But when, as here, there is no mystery and what happened is clearly established without resorting to a joust between experts, the case changes radically. Pretending that this case is no different from those mystery-style cases would be a shocking injustice to Nakita Lemons. Two-month-old Nakita Lemons was shaken to death. That fact was never a mystery. It was clearly established well before trial. Nothing presented at the postconviction hearing changed that fact. The facts about what happened to Nakita are as follows:

- Defendant vigorously shook the victim, Nakita Lemons.
- Immediately after the shaking, Nakita's head rolled to the side, she vomited, and then stopped responding.
- Defendant declined to call emergency services for Nakita.
- Nakita never recovered and died in the hospital.
- The medical examiner's findings were consistent with shaken baby syndrome and abusive head trauma.

The reason why we know precisely what led to the victim's death is that defendant told the police exactly what happened. The autopsy report established that the symptoms and cause of death were consistent with the act of shaking that defendant said preceded the victim's death. Further, defendant's fear of contacting emergency services to help baby Nakita shows consciousness of guilt. Thus, far

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from being a "close" or "controversial" case, the verdict was clear. Defendant was guilty, exactly according to the admission.

Accordingly, this case is not susceptible to the typical "duel of experts" challenge during a motion for relief from judgment. The standard for whether newly discovered evidence warrants a new trial is whether that evidence makes "a different result probable on retrial."[48] Here, that could not be accomplished merely by presenting an alternative theory or casting doubt over whether certain injuries always stem from abuse. A non-homicide alternative theory is simply immaterial when the forensic facts and the defendant's own admission directly indicate that the homicide theory is accurate. If the defendant admitted to doing exactly what the autopsy report said caused the death and showed consciousness of guilt afterwards, then the case is closed no matter what alternative theory is presented. The equation for any factfinder—whether a judge or a jury—boils down to a simple equation: when fact A (a victim's death was consistent with a particular form of homicide), is added with fact B (the defendant admitted to performing that act of homicide), and added with fact C (the defendant showed consciousness of guilt after the act), then the conclusion is that the victim was murdered by defendant.

In any case, the People have no duty to disprove a defense alternate theory.[49] This principle is particularly poignant in this case, where the People's theory was established through an exact nexus between defendant's admission and the autopsy report. The simplest

[48] *Cress*, 468 Mich at 692.
[49] *People v Fetterley*, 229 Mich App 511, 517 (1998).

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outside illustration would be a homicide where the autopsy report lists multiple gunshot wounds as the cause of death, the defendant admits to shooting the victim, and she then acts guiltily after performing the shooting. That defendant would be unable to receive a new trial based on the theory that someone else stabbed the victim to death, even if she found an expert to suggest that the wounds could have been caused by stabbing rather than shooting. The defendant's admission, when combined with the autopsy report and her consciousness of guilt, would create an overwhelming evidentiary conclusion that would not be negated merely by offering other alternative theories.

Accordingly, to meet its burden of showing that a different result would be probable on retrial, the defense needed to undo one of the two iron-clad pillars of the People's case that resulted in the conviction. To receive a new trial based on newly discovered evidence, the defense needed to show either that: (1) defendant's admission was false or coerced or (2) that the victim could not have been died in the manner described in the autopsy.

This was a steep burden for the defense experts to carry. It was also the proper burden when a defendant is attempting to use a collateral attack to overturn a conviction at trial that was based upon an admission or a confession by that same defendant. If the defense cannot show that the admission was improper and it, likewise, cannot show that the method of death was impossible, then it simply does not matter what new evidence is added to the trial because defendant's guilt is already established.

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Although the defense provided interesting information through the course of the extended evidentiary hearing—with varying degrees of admissibility under *Daubert*—it was not able to undercut the conclusion on which the conviction rests. Accordingly, defendant cannot show a different result would be probable on retrial.

This issue heading concentrates on the third question posed by this Court. The three subsections of this issue heading will discuss both the trial and the evidentiary hearing as it relates to (A) defendant's admission to shaking the victim, (B) the autopsy's finding that shaking was the cause of the victim's death, and (C) defendant's consciousness of guilt after shaking the victim. Based on defendant's failure to overcome those three facts which conclusively establish guilt, defendant cannot show a different result would be probable on retrial.

A. Defendant admitted to shaking the victim and that the harm and eventual death directly followed the shaking.

Defendant admitted to violently shaking the victim and that the result was immediate vomiting and loss of consciousness. Nothing about the hearing or any later pleadings can change the fact that the defendant admitted to performing an act that causes the exact symptoms and cause of death that the victim suffered.

The defense attempts to minimize the importance of the admission by arguing it was only mentioned by the trial court briefly during its opinion on the motion for relief from judgment. The reason for this is obvious: the year-long, ten-expert evidentiary hearing was solely focused on the science of shaken baby syndrome and abusive head

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trauma. The defense did not provide a single expert regarding confessions and, accordingly, the opinion of the trial court focused on the evidentiary hearing, rather than the facts previously discussed at trial. Nevertheless, both the same trial court during its holding after the waiver trial, and the Court of Appeals in its opinion affirming the trial court, indicated that defendant's admission was extremely important.

Defendant also attempts to invoke the dissimilar federal case of *Aleman v Vill of Hanover Park*.[50] In *Aleman*, the police violated *Miranda*, lied to the defendant about the medical report, and then tricked the defendant by twisting his statement based on false information.[51] Furthermore, the *Aleman* defendant always asserted that he had only gently shaken the child after the child had stopped responding as part of the resuscitative efforts.[52] The Seventh Circuit held that such interrogation by trickery was coercive.

Although both cases involve interrogations and an infant death, this case has no other similarities to *Aleman*. Here, defendant twice theorized—once at each hospital that treated Nakita—that shaking caused the injuries to the victim. These statements were made *before* defendant was interviewed by the police. Defendant's wife, Lori Ann Lemons, testified:

> Q. Do you remember [defendant][53] ever telling anybody that he had shaken his daughter?

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[50] *Aleman v Vill of Hanover Park*, 662 F3d 897, 906 (CA 7, 2011).
[51] *Id.*
[52] *Id* at 901, 906.
[53] The trial transcript refers to defendant as Mr. Lemons and uses the pronouns "he," "him," and "his." Defendant no longer identifies as male. Nevertheless,

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A. Yes, when we were sitting in the lobby of the UofM Hospital, he stated that I hope it's not because I shook her to wake her up.
Q. When he said that, had you ever heard him say that before[54] that moment?
A. Yes, at Annapolis Hospital. I did hear some [sic] saying that, you know, he shook her awake because she wasn't responding. I hope it's not because I shook her.[55]

After the arrest, Detective John Williams interviewed defendant. Before Williams provided any information regarding the victim's cause of death, defendant gave an account of what happened. Williams specifically testified that defendant claimed to have found the victim "having trouble breathing."[56] Defendant started CPR.[57] "At this point, [defendant] told me he didn't know if he shook her to [sic] hard when he was trying to wake her up."[58]

After defendant brought up shaking the victim, Williams explained the contents of the autopsy and that the victim died from being shaken.[59] Then, rather than reiterate the story about shaking the victim after she was unresponsive, defendant provided a completely different and much more detailed explanation.

On October 10th, 2005, my wife left for work at 2:30 p.m., which I dreaded because I didn't like to be left alone

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for the sake of clarity, when referencing direct quotations from the transcript, this brief will not alter the pronouns used in the original.
[54] The transcript repeats "that before."
[55] 38-39b.
[56] 169b
[57] 169-70b.
[58] 170b.
[59] 170-71b.

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> with her. At four p.m., I fed my son and laid him down for a nap. About 4:40 p.m., Nikita was in her swing fussing at this time. About 5:34 p.m., I fed her a bottle and laid her down. At about 6:20, my son started fussing and then she started crying also. I went into the room to get him out, but picked her up instead. She wouldn't stop crying and he was still crying too. So I shook her three or four times to get her to be quiet. She stopped crying and started spitting up formula, but was unresponsive.[60]

The record is clear. Defendant's admission was not merely the result of a psychological trick played by Williams, the way the defendant in *Aleman* was deceived. Here, defendant was the one who brought up shaking. Defendant indicated a fear that shaking had cause the injuries to Nakita, twice at the hospitals before the police were even involved. After the arrest, defendant brought up shaking as a potential cause for the victim's injuries to Williams. Finally, when the autopsy findings were revealed, defendant explained that the shaking took place *before* the victim went unresponsive and that she went unresponsive immediately after she was shaken.

Williams also explained that he asked other questions and the answers explained how hard the victim was shaken and defendant's mental state at the time.

> Question, on a scale of one to ten, ten being shaking her very hard, how hard did you shake Nikita? Answer, seven. Question, what was Nikita's head doing as you shook her. Answer, back and forth. I went blank. I just wanted her to stop crying.
>
> ***

[60] 171b.

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> Question, how did you feel when you were shaking her? Answer, very angry, depressed.

The transcript is clear that nothing about this admission was coerced through psychological games or trickery. *Aleman* is irrelevant. From the beginning, defendant exhibited constant fear that the act of shaking is what caused Nakita's death. That admission, when combined with the facts that shaking was consistent with the victim's injuries and defendant showed consciousness of guilt, prevents the defense from attaining a new trial based on the creation of new alternate theories.

B. The victim's death was consistent with shaking as the mechanism of injury.

To have any shot of reaching the level of showing a different result probable on retrial, the defense had to undermine the accuracy of defendant's own admission. Accordingly, the defense attempted to disprove the admission, not by eliciting confusion or conflicting opinions, but by completely invalidating the diagnosis of shaken baby syndrome. The defense experts attempted to prove their assertion that "[t]here is now no credible evidence that shaking caused Nakita Lemons's death."[61] This attempt faces an extremely high bar of proof. Invalidation of an established scientific principle does not require a mere reasonable difference of opinion or alternate explanations. None of these would make the confession invalid. Rather, it requires proof that something previously established *did not occur*. Defendant failed to make this showing.

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[61] 901b.

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The defense relies extensively on the hearing testimony of Dr. Bader Cassin, the medical examiner who performed the original autopsy and testified for the defense. The emphasis for the defense is, of course, on the fact that Cassin would now testify that the manner of death was "indeterminate," because he could not tell from the injuries alone whether it was a homicide.

The rest of Cassin's testimony destroyed defendant's case. Rather than retract his findings, Cassin affirmed everything. He affirmed all his autopsy findings. He affirmed all the injuries, with the possible exception of a fracture that was verified through radiology before the autopsy. He rejected other defense experts' suggestions that his findings were inaccurate. Most importantly, Cassin even agreed that the cause of death was consistent with homicide and the new term used for this type of homicide would be abusive head trauma.[62] Furthermore, neither the autopsy nor the manner of death would actually change on retrial. Cassin lacks the authority to "recant" the contents of the autopsy report. Recant means "[t]o withdraw or renounce (prior statements or testimony) formally or publicly."[63] Cassin cannot formally withdraw or change the autopsy report. That authority is relegated to the Washtenaw County Medical Examiner, Dr. Jeffrey Jentzen, who stands by the autopsy report and its diagnosed manner of death.[64]

At a potential retrial, the equation presented to the factfinder would remain identical. The defendant's admission is consistent with

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[62] 463-64b.
[63] Black's Law Dictionary, "recant" (10th Ed. 2014).
[64] 484-85b.

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the injuries suffered by the victim and defendant displayed consciousness of guilt. The findings of the medical examiner's office would not change. Cassin's findings of injury and consistency with the admission would not change. The only change at retrial would be that Cassin, testifying on behalf of the defense, would simply assert that although the manner of death could still be homicide—in accordance with his report and the medical examiner's office—he now believes that the findings would be better classified as indeterminate. Even if his statement were outright authoritative, that equivocation does not alter the consistency between the autopsy report and defendant's admission. Cassin's testimony that the admission and the victim's autopsy are consistent remains unchanged. Accordingly, defendant is not entitled to a new trial. Defendant failed to show that the symptoms causing the victim's death were inconsistent with defendant's admission.

C. Defendant's consciousness of guilt strengthens and accentuates the link between the admission and the autopsy report.

As the Court of Appeals correctly observed, defendant declined to call emergency services when the victim stopped breathing and responding. This fear of the authorities shows consciousness of guilt. If a child stops breathing, anyone's first reaction is to call 911 for the aid of emergency services. But defendant never called 911 to help Nakita.

Consciousness of guilt is, on its own, a secondary consideration. Nevertheless, it greatly reinforces the connection between defendant's admission and the autopsy. When the autopsy findings are exactly consistent with a defendant's admitted conduct, that creates a strong

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reason for a factfinder to find a defendant guilty beyond a reasonable doubt. When the defendant acts with a guilty conscience reflecting the factfinder's own conclusions, that reason grows far stronger.

Here, any factfinder would conclude that defendant intentionally acted with a guilty conscience by repeatedly declining to call 911. In fact, defendant decided not to call 911 on four separate occasions, despite the urging of his neighbor.

First, defendant decided not to call 911 when the victim first stopped breathing. Sometime after the victim stopped breathing, defendant went to the home of next-door neighbor, Renee Zdyb, told her the victim was not breathing, and asked for help.

Second, when Zdyb discovered what was happening, Zdyb told defendant to call 911. Defendant agreed and took the phone stating the intent to call 911. Instead, defendant called Lori Lemons. Lemons received the call around 7:00 p.m.[65]

Third, when the victim did not start to breathe, Zdyb again told defendant to call 911. Instead, defendant called Lemons's mother, Pamela VanMeter, who lived across the street, for assistance.[66]

Fourth, Zdyb asked a third time for defendant to call 911 because she did not know CPR. Defendant did not call emergency services. Instead, defendant took the baby to perform CPR. Zdyb, however, took the phone while defendant was busy and called 911 herself.[67]

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[65] 14-15b; 96-97b
[66] 96-97b.
[67] 96-97b.

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The obvious reason that it took so long for emergency services to be contacted was that defendant was afraid to call 911. This is a clear showing of consciousness of guilt. Similarly, defendant's comments about "hoping" the injuries were not due to shaking—which were made to Lemons at both Annapolis Hospital and at UofM Children's Hospital—show a consciousness of guilt. If defendant did not feel guilty about shaking the victim, 911 would have been the first call. Likewise, if defendant did not feel guilty about shaking the victim, then there would have been no spontaneous admissions about shaking the victim at both hospitals.

Conclusion

This Court should deny defendant's application for leave to appeal. The third question this Court asked is the controlling question in this case. Even if the evidence introduced by the defense was admissible, it is not enough to make a different result probable on retrial and defendant is not entitled to a new trial. Although the People differ in several respects from the opinion of the Court of Appeals, the court was absolutely correct in this regard. After all the fifteen-dollar words, prominent scientific controversies, and terms of medical jargon are considered and tallied the following facts remain: defendant admitted to vigorously shaking the victim until she died and the findings at the autopsy are consistent with shaking as the cause of death. Defendant's consciousness of guilt strengthens that connection.

As discussed above, defendant's admission would be available at any other trial, as would the autopsy and the testimony that it was still

consistent with defendant's admission of guilt. At this stage, alternative theories change nothing, whether or not they are admissible. Defendant failed to establish entitlement to relief.

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II.

A proponent of scientific evidence must show both that the scientific principle is reliable and its application to the case is sound. Here, defendant presented various biomechanical principles that could not be reliably applied to the instant case. The trial court did not err by excluding biomechanical evidence that was not reliably applied to this case.

Standard of Review

The standard of review for the admission or exclusion of evidence is limited to whether the decision was an abuse of discretion.[68] "[T]he trial court's decision on a close evidentiary question… ordinarily cannot be an abuse of discretion."[69] A trial court's findings of fact are reviewed for clear error.[70]

Discussion

The Court of Appeals did not err when it affirmed the trial court's decision to exclude the unreliable biomechanical testimony and a fistful of undeveloped theories presented by the defense. This issue section answers this Court's first question.

According to this Court, under *Daubert* the trial court has the "fundamental duty of ensuring that *all* expert opinion testimony—regardless of whether the testimony is based on 'novel' science—is reliable."[71] Stated conversely, if the evidence is unreliable, the trial court has the responsibility to keep it away from a jury. Courts may not,

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[68] *People v Bahoda*, 448 Mich 261, 289 (1995).
[69] *People v Sabin*, 463 Mich 43, 67 (2000).
[70] *People v Buie*, 491 Mich 294, 304 (2012).
[71] *Gilbert v DaimlerChrysler Corp*, 470 Mich 749, 781 (2004).

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as defendant requested of the trial court, abdicate this duty by shuffling the question of scientific reliability off to a new jury. Rather, before a jury, including a hypothetical retrial-jury, can receive "scientific" evidence, the trial courts must determine that the science proffered is sound and reliable.[72] In *Gilbert v DaimlerChrysler Corp.*,[73] this Court expressly adopted the *Daubert* analysis to govern scientific questions coming through MRE 702.

The *Daubert* Court provided a framework of four "key question[s]" that trial courts should use to determine the appropriateness of proffered testimony on scientific principles.

1. Can the proposed scientific evidence be "tested" "to see if [it] can be falsified?"
2. "Whether the theory or technique has been subjected to peer review and publication" to detect any "substantive flaws in methodology."
3. Does the proposed scientific evidence have a "known or potential rate of error?"
4. Is there general acceptance of this proposition within the relevant scientific community?[74]

Two subsequent interpretive cases in the United States Supreme Court each added a bar against certain impermissible types of testimony.[75] In *General Electric v Joiner,* the Court noted that it was well within the lower court's right to exclude expert opinion testimony when there was "too great an analytical gap between the data and the

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[72] *Daubert v Merrell Dow Pharm., Inc*, 509 US 579 (1993).
[73] *Gilbert*, 470 Mich at 782.
[74] *Daubert,* 509 US at 593 (1993).
[75] *Gen Elec Co v Joiner*, 522 US 136, 146 (1997) and *Kumho Tire Co, Ltd v Carmichael*, 526 US 137, 152 (1999).

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opinion proffered."[76] In *Kumho Tire Co v Carmichael*, the Court found that evidence would be inadmissible if "the methodology employed by the expert in analyzing the data" was "unreliable" or if an expert fails to employ "in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field."[77]

A. The analysis of scientific evidence is a two-part consideration which considers both the reliability of the underlying scientific principle and the deductive application of that principle to the case.

The defense focuses narrowly on the underlying scientific principles it wanted to admit. But the base-level study was rarely the issue preventing the admission of the defense scientific theories. Instead, the excluded evidence was largely inadmissible because the defense experts failed to reliably apply dissimilar and tangential principles to the facts of this case.

All scientific evidence achieves relevance through the concept of logical deductive syllogism. The major premise is the established scientific principle. The minor premise is the disputed factor in the case that has a nexus with the scientific principle. The deductive conclusion is the application of the principle to the case. The syllogism is necessary because it is impossible to conduct prospective scientific studies on criminal cases while they are occurring.[78] Thus, no expert-presented scientific data will ever be intrinsically relevant to a case. Rather, the

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[76] *Joiner*, 522 US at 146.
[77] *Kumho Tire Co*, 526 US at 152-53.
[78] There is no way to conduct scientific experiments directly through the crime that is being committed or charged. Therefore, all scientific principles can only gain relevance by similarity and deductive reasoning.

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data in question is gleaned elsewhere and then applied to the case through logical deduction.

This leaves three areas where an expert provides testimony that must withstand the gatekeeping scrutiny of the court: (1) the scientific reliability of the underlying scientific principle, (2) the similarity and nexus that allows the application of the principle to a contested factor of the case, and (3) the reasonability of the resulting deduction drawn from that application. Notably, none of these three concerns encompass the acceptance of the final conclusion espoused by the expert. Rather, the above factors are the principles and methodology used to ground and support the conclusion, not the nature of the conclusion itself. When a reasonable deduction is made based on the proper application of a reliable scientific principle, the resulting conclusion is not a matter for the court's gatekeeping function.[79] The courts need not be concerned with whether the expert's answer is "yea or nay," but whether a well-reasoned deduction drawn from a reliable principle supports that yea or nay.

The syllogism concept is widely understood but is seldom considered wholistically. Rather, courts tend to focus on whatever particular segment of the case wherein lay the concern. Typically, the second and third parts of the syllogism (nexus and deduction) are analyzed together. This is because they are, for all practical purposes, interconnected. When a scientific principle has a close nexus to the facts of the case and the application of that principle is reliably applied to

[79] See e.g. *Daubert*, 509 US at 595. ("The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.")

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those facts, the resulting deduction is necessarily sound. If, however, the case lacks a close nexus to the scientific principle, or a principle is not reliably applied to the facts, the deduction will not be sound. Conversely, if a deduction is found to be unsound because it "spans too great an analytical gap," it is because either the scientific principle lacks a close nexus to the facts or the principle was not reliably applied to the facts.[80]

In *Daubert*, the Court concentrated on the admissibility of an underlying scientific principle, which was not generally accepted under the previous *Frye* standard. Nevertheless, the Court did acknowledge that merely establishing the admissibility of the principle was only part of the equation. In addition, the Court noted that it was important to discern whether the reasoning or methodology could be properly applied to the facts at issue.[81]

In *Joiner*, the reliability of the underlying scientific principle was not at issue. The plaintiff/respondent presented evidence of "animal studies" that he asserted supported his claim.[82] These studies showed that when concentrated polychlorinated biphenyls (PCBs) were directly injected into infant mice, those mice developed cancer.[83] Nobody ever

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[80] This connection is, of course, subject to the constraints against absurdity. If a proponent seeks to admit an absurd deduction from an otherwise tight nexus and reliable application of a sound scientific principle, the end result is still exclusion. Fortunately, excluding such absurdities is well within the *Joiner* moratorium against adopting deductions that span "too great an analytical gap." A deduction unjustified by any reasonable analytics at all creates an unfathomable gap. Absent variables, one plus one cannot rationally equal five.
[81] *Daubert,* 509 US at 593.
[82] *Joiner*, 522 US at 144.
[83] *Id.*

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questioned the veracity of those studies. Nevertheless, the scientific evidence was excluded because it was "so dissimilar to the facts presented in this litigation."[84] This was an error in applying the scientific principle to the case and creating an unreasonable deduction based on dissimilar scientific evidence.

In this Court's case of *Gilbert*, the Court was tasked primarily with determining the admissibility of evidence based on an unqualified expert.[85] In doing so, this Court adopted the *Daubert* standard for Michigan and emphasized it is insufficient merely to show an opinion "rests on data viewed as legitimate" but it is also required to show "that any opinion based on those data expresses conclusions reached through reliable principles and methodology."[86] Furthermore, this Court was exceedingly clear as to the scope of the inquiry required. "MRE 702 mandates a searching inquiry, not just of the data underlying expert testimony, but also of the manner in which the expert interprets and extrapolates from those data."[87]

B. The biomechanical evidence proffered by the defense was unreliable and inadmissible as applied to the facts of this case.

The Court of Appeals did not err when it upheld the trial court's exclusion of the biomechanical evidence offered by the defense. The defense provided a faulty deduction or application in its attempt to prove points that the underlying studies could not reasonably make.

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[84] *Id.*
[85] *Gilbert*, 470 Mich at 782.
[86] *Id.*
[87] *Id.*

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To support its claim, the defense argues against a caricature of the Court of Appeals opinion. Specifically, defendant's supplemental brief claims that the court "concluded that the field of biomechanics is unreliable because biomechanical engineers use dummies and animals, instead of living human babies, to simulate the forces shaking would inflict upon an infant."[88] Defendant goes on to bemoan the potential categorical exclusion of all biomechanical evidence at hands of the reasoning used by the lower courts. This argument is basically identical to the errant argument made by the plaintiff/respondent in *Joiner*.

In *Joiner*, just like in the instant case, the question was not whether animal studies were appropriate science, but instead whether they could be properly used to form a deduction about a widely dissimilar factual situation. The deductive syllogism proposed by the party offering the animal study evidence in *Joiner* would have been something like:

Principle:	Animal studies show that infant rats injected with concentrated PCBs develop cancer.
Nexus:	The plaintiff adult human was exposed to some amounts of PCBs and developed cancer.
Deduction:	The PCBs caused the plaintiff's cancer.

The party favoring exclusion argued that the above application was flawed because there was an insufficient nexus between the scientific studies and the deduction was not merited due to the dissimilarities between the case facts and the study.

[88] Defendant's Supplemental Brief on Appeal, 14.

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In *Joiner*, as here, the proponent of the evidence could not defend the nexus and the leap of logic required to make such a broad deduction from the distant scientific principle. Instead, the *Joiner* plaintiff "chose to proceed as if the only issue was whether animal studies can ever be a proper foundation for an expert's opinion."[89] Here, defendant makes the same mistake, assuming that the trial court and Court of Appeals belittle all biomechanical evidence. That is, of course, not the case. The Court of Appeals clearly stated that "The defense did not establish that principles derived from this research can be reliably applied to alleged SBS cases."[90]

There were distinct flaws in the different biomechanical evidence presented by the defense. Some of these flaws related to the particular scientific principles asserted. Other times, the flaws were not in the studies proffered but rather in the application or deductions presented by the experts that were not justified by the underlying studies.

1. The car-accident injury models used for the biomechanical studies quoted by the defense are inapplicable to this case.

According to the trial verdict, the victim in this case was violently shaken. For an apples-to-apples comparison to be made in the biomechanical field would require scientists to analyze the effect of cyclic shaking on the intracranial biology of an infant. As has been repeatedly noted, such a study on a living infant would be morally and ethically impossible. But that impossibility does not suddenly make

[89] *Joiner*, 522 US at 144 (cleaned up).
[90] 134a-135a.

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every dissimilar study relevant to cases of infant shaking. *Joiner* does not cease to apply whenever a preferred type of study is absent.

The defense sought to reference—but not introduce into evidence—some studies that crafted rudimentary[91] models to be shaken. The linear acceleration of those shakes was then applied to a widely dissimilar injury model in the attempt to prove that shaking an infant like the victim would not cause injury.[92] As the defense expert candidly admitted, the injury models discussed came from animal testing designed to analyze the probability of injury occurring in front-end car accidents, not shaken baby cases. Van Ee described this model on direct examination. "[T]hey took primates or monkeys, had them in a seat and accelerated the seat up to … 30 miles per hour [which was then immediately stopped]."[93] Defendant's experts used these studies in the attempt to draw a deduction that would preclude the victim from having had her injuries caused by shaking.

Obviously, the single directional force on a shaken model infant will usually be far less than that of an adult primate in a simulated car crash. But the angular force, rotational force, the weak neck muscles of the infant, and the repetitive nature of the cyclic shaking motion are all absent from this injury model.[94] Using the crash simulation criteria to determine the probability of injury from shaking adds little information

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[91] Some of these models had cotton stuffed heads and necks that consisted of metal hinges or rubber bands. They were not biofidelic in the least.
[92] This applies to both the computational papers and the model studies presented by the defense. See 840-43b.
[93] 809b.
[94] See 923b.

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about the likelihood of shaking causing injury, considering that the mechanisms of injury are completely dissimilar.[95]

Accordingly, neither the People nor the lower courts had a scientific issue with the underlying study that says adult primates experience injuries at certain speeds in the context of a simulated car crash.[96] Likewise, neither the lower courts nor the People take issue with a claim that on some mathematical and simulated models a shake does not create the same single-directional force that is experienced by a primate in a simulated car crash.

Rather, it is the faulty application and deduction that the People and the lower courts take issue with. Infant shaking is not the assertion of a single rapid deceleration present in a car accident. It is a cyclic motion with rampant rotational and angular forces exerted on an undeveloped human brain.[97] A monkey-in-a-car-accident injury model is far too attenuated from the type of injury experience in a shaking case

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[95] Notably, even with only the monkey-in-an-accident injury criteria, the biomechanical papers are split on the necessary force. More biofidelic models were produced and, when used in experiments were found to produce linear accelerations in excess of the threshold provided by the accident-based injury criteria.

Nevertheless, these articles that would support the prosecutor's theory would be no more admissible at trial then their defense counterparts. An infant that is violently shaken is not an adult monkey in a frontend collision. The two types of injuries are incomparable. The conclusion, for or against shaken baby syndrome, is immaterial. It is the leap of deductive reasoning that is inappropriate, not the end opinion derived from that impermissible leap.

[96] The information derived from those studies is essential towards understanding the forces involved in exactly what those studies measure: car crashes.

[97] 679b, 841-43b, 923b.

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to be a reliable guide for a jury.[98] Both the application and the deduction the defense experts proposed were faulty.

2. *The pure biomechanical computational papers do not meet the requirements of* Daubert.

Although Van Ee was opaque, Nichols was transparent in citing a paper by Dr. Faris Bandak and another article by Drs. Ommaya, Goldsmith, and Thibault to support his conclusion that a neck injury would be necessary before shaking could harm a child.[99] Both of these are pure computational papers that hypothesize about the effect of certain variables. There are two different reasons that the defense testimony about these articles was excluded.

The Bandak paper was excluded because the scientific principle it purported to create was falsified on peer review. Bandak's paper, which was an exclusively computational paper, was completely discredited and refuted. The actual forces on the infant's neck were ten times lower than the figures he used, making it far less likely that an infant shaken to death would suffer a broken neck.[100] There is no proper way for a defendant to use calculations that were proven false to uphold a point that is no longer valid. The whole purpose of *Daubert's* peer review requirement is to determine whether the theory is flawed or has been falsified so that the jury is not presented with junk science. The Bandak paper has been proven to be junk science and is, therefore, inadmissible.

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[98] 673-74b, 752-53b; 923b.
[99] 331-34b. Neither paper was introduced into evidence.
[100] 674-76b, 926-27b.

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The Ommaya et al paper cited by Nichols is, like the Bandak paper, a computational paper, comparing human specifications to animal injury criteria without any physical models. Accordingly, this paper lacks any modeling simulation to replicate the motion of the human body and instead relies purely on mathematical calculations and an assumption of similarity. The Ommaya, et al paper is not, at its heart, a criticism of shaken baby syndrome. Rather, it is a call to doctors for further biomechanical analysis of both adult and child traumatic brain injury. The paper contains several interesting discussions, including a discussion of what can only be described as shaken adult syndrome. The article describes how an adult captive was shaken, without impact, by his captors resulting in death from the very same symptoms that are consistently seen in shaken baby syndrome cases: brain damage, with autopsy findings of subdural hematoma and retinal hemorrhaging. When discussing infant traumatic brain injuries, however, the article uses admittedly theoretical mass-scaling injury criteria. These criteria suggest that it would take four times greater force to be applied to an infant's head to cause the same traumatic brain injury as would occur in an adult's head. Thus, the paper postulates that catastrophic neck injury would be required in order for an infant to suffer injuries like subdural hemorrhage and retinal hemorrhage.

There are numerous flaws with pretending that the Ommaya et al article is a followable scientific principle, rather than the way it was characterized by its authors as a call for more research. One obvious area is that the injury criteria did not account for any of the significant differences between an infant brain and an adult brain, outside of mass,

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rendering the paper's discussion of necessary neck injury meaningless. It is common sense that it does not require four times the force to damage an infant's unformed brain than it does to damage an adult's completely formed brain. The authors were also honest enough to put an entire paragraph at the end of their paper which explained many of the variables that would need to be resolved before biomechanics could provide meaningful conclusions about traumatic brain injury occurring from shaking.

The Ommaya et al article is an excellent example of evidence inadmissible under *Joiner*.[101] Defendant's desired conclusion is so far removed from the underlying data that it creates a bizarre, unpassable analytical gap. Basically, the defense wants the courts to conclude that because it has been proven that someone *can* shake an adult to death by causing subdural hemorrhage, retinal hemorrhage, and brain damage, without catastrophic neck injury; the same *cannot* be said of an infant. The defense wants this conclusion, despite the fact that the very authors of the article indicated that the then-existing injury criteria were insufficient for measuring trauma. The trial court declined to take such an aberrant and counter-logical leap over a vast analytical gap.

Even if it were admissible, the Ommaya et al paper would not have made a difference on retrial. Recent breakthroughs in medical knowledge about abusive head trauma show that the soft tissue, ligaments, and nerves in the neck are often damaged during the process of abusive shaking.[102] These injuries can be found using the advanced

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[101] *Joiner*, 522 US at 146.
[102] 692-93b.

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imaging equipment available today. But these injuries were not checked for at the time the victim was killed more than a decade ago. Most of the various neck injuries that the victim could have sustained during shaking would not have shown up on the imaging that was conducted at the time.[103] There was no examination done of the victim's neck via dissection or MRI. Accordingly, it is unknown whether the victim suffered some form of neck injury less than a broken neck. Even if the Ommaya et al paper was allowed to be misused as a scientific principle rather than a request for further study, it would not help the defense abrogate the importance of defendant's admission. The result of the trial, explained in Issue I, would remain unchanged.

3. Dissimilar animal studies do not meet the threshold for admissibility.

Defendant suggested that two animal studies proved that shaking could not cause the injuries the victim suffered. Again, the People do not take issue with the raw data contained in those studies. A single shake to a piglet usually does not produce retinal hemorrhages. The People see no reason to contest that finding. It is unsurprising due to the colossal biological dissimilarity between human infants and piglets.

But defendant's deduction twisted the study into a commentary on something unrelated. The defense experts spawned a syllogism as follows:

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[103] 787b.

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Principle:	Piglets shaken one time do not usually exhibit resulting retinal hemorrhages.
Nexus:	The defendant admitted to violently shaking the victim, a human infant, 3-4 times and the victim suffered from bilateral retinal hemorrhages and other injuries.
Deduction:	The victim's injuries were not caused by repeated violent shaking.

The defense deduction is a radical leap of logic, unjustified by the underlying scientific principle. Defendant has shown no reason that a human infant's biology when shaken multiple times would replicate that of piglets shaken a single time. The trial court did not abuse its discretion when it declined to allow that type of improper leap of logic.

Notably, other animal studies—such as The Ovine Study by Dr. Anderson et al. out of Australia—have results that are consistent with the observed clinical presentation of shaken baby syndrome observed in human infants. Anderson's study chose to use lambs so that they could more closely replicate human infants.[104] Lambs are a better model than most other animals due their large head-to-body ratio, a partially unsolidified brain, and weak neck muscles.[105] The study found that the lambs suffered mild subdural hemorrhage, retinal injury, widespread brain injury, and, in some cases, death.[106]

C. People v Ackley *is irrelevant to this case.*

The defense misuses the case of *People v Ackley*—along with an article coauthored by defense counsel—to urge this Court to throw

[104] 909-15b
[105] 911-15b.
[106] 910b.

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Daubert, Joiner, and *Gilbert* aside and adopt a conclusion-based policy on the admission of evidence.[107] Defendant inferentially argues that a proponent of scientific evidence may present either false scientific principles or illogical deductions from sound principles, as long as the expert's conclusion serves to attack shaken baby syndrome. Bizarrely, defendant usually implies the principle using the opposite language, by suggesting that this Court has made a blanket finding for all shaken baby cases that all detracting scientific principles are true and all negative deductions from any study are logical. Thus, defendant takes umbrage that the trial court sought to fulfill its gatekeeping role at all. As noted by the Court of Appeals, this position is indefensible.

Pan-admissibility of any defense expert conclusions, regardless of scientific veracity, was not contained in the holding of *Ackley*. In fact, the *Ackley* opinion has nothing to do with evidentiary admissibility at all. Rather, it holds that a defense attorney will likely be found ineffective if he chooses to argue a scientific defense without consulting an expert that he was told would provide admissible testimony to support that very defense.[108]

This Court has never made a factual decision regarding the admissibility of the scientific evidence presented in this case. That is not this Court's job. That is the circuit court's job. This Court is tasked with making sure that the law regarding the admissibility of scientific evidence were followed correctly. In a case regarding the admissibility of scientific evidence, the cases in question are *Daubert, Joiner,* and

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[107] *People v Ackley*, 497 Mich 381, 397 (2015).
[108] *Id* at 395–98.

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Gilbert. The trial court did not abuse its discretion when excluding defendant's biomechanical evidence, due to the wide analytical gap between the underlying principles and their applications to the instant case. Accordingly, the Court of Appeals did not err when it upheld the trial court's decision.

D. The host of other defense theories that were neither supported in the trial court nor defended in the defense supplemental brief were rightly excluded.

As the Court of Appeals opined, the defense made several other assertions about other potential causes that were supported by little more than the *ipse dixit* of the expert. These included the suggestions that perhaps the victim had rickets,[109] that vaccines could have caused the traumatic intracranial injuries,[110] the acromion fracture was caused during autopsy,[111] and the fracture could have been caused by CPR.[112] At the evidentiary hearing, the defense offered little or no support for any of the above theories. Similarly, the defendant has not defended the admissibility of these theories in its Supplemental Brief to this Court. Accordingly, the People will also decline to address these issues, outside of agreeing with the Court of Appeals that they were rightfully excluded by the trial court.

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[109] Although the defense never bothered to support this claim, it is worth noting that the victim did not have rickets. 709-10b

[110] The defense did not provide any support for this theory.

[111] The acromion fracture was observable in the pre-autopsy imaging.

[112] The defense did not provide any support for this theory.

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Conclusion

The biomechanical evidence offered by defendant consisted of numerous studies, none of which could be properly applied to form the deduction that defendant wanted. The defense wanted, and needed, a conclusion that shaking 2-month-old infant Nakita Lemons did not cause the intercranial injuries she suffered. But the evidence available did not support that deduction. The proffered biomechanical evidence would have supported deductions such as shaking a child does not create similar linear forces to car accidents, that infants could not readily survive little-league contact football, or that certain small-headed animals suffer less intercranial damage than humans when shaken a single time. But none of those legitimate conclusions would have helped defendant secure a new trial. The defense tried for the broad analytical leap that dissimilar studies meant that this victim could not have been shaken to death. That leap was not warranted by the studies because they were "so dissimilar to the facts presented in this litigation."[113]

[113] *Joiner*, 522 US at 144.

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III.

Scientific evidence that is based in mere opinion or that is misinterpreted or wrongly applied to the facts of a case must be excluded. Here, the trial court excluded testimony on the alleged "triad" that was improperly applied to this case and an alternate theory regarding HIE that was based on nothing more than opinion. Defendant is not entitled to a new trial based on evidence that was rightly excluded.

Standard of Review

The standard of review for the admission or exclusion of evidence is limited to whether the decision was an abuse of discretion.[114] "[T]he trial court's decision on a close evidentiary question… ordinarily cannot be an abuse of discretion."[115] A trial court's findings of fact are reviewed for clear error.[116]

Discussion

The Court of Appeals took issue with the trial court's decision to exclude Cassin's testimony regarding shaken baby syndrome, the defense's attack on the so-called triad of symptoms, and the theory that hypoxic-ischemic encephalopathy (HIE) was the root cause of the victim's intracranial injuries. This Court's second question to the litigants was whether the exclusion of these issues constituted harmless error. Largely, that question is answered by the Issue I, which is the People's response to this Court's third question. Dr. Cassin's testimony

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[114] *Bahoda*, 448 Mich at 289.
[115] *Sabin*, 463 Mich at 67.
[116] *Buie*, 491 Mich at 304.

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is discussed under the first issue heading. Likewise, the People explained how the evidence introduced would not make a different result probable at retrial. Accordingly, whether that evidence was wrongfully excluded would not make a difference in the end result of the hearing.

This question does, however, provide the People with a chance to explain that the Court of Appeals erred when finding error with the trial court's exclusion of the testimony on the "triad" and the HIE theories. Furthermore, even if that exclusion was improper, neither topic would have made a difference at the hearing or on retrial.

A. The trial court properly excluded testimony on the "triad," not merely because the principle was fringe, but because the principle was not reliably applied to the instant case.

The conversation about the so-called "triad" is, at its heart, nothing more than an accusation that some physician disregarded the proper differential diagnostic procedure and rendered a decision without engaging in deduction. That did not happen in this case, which is why the whole conversation about the "triad" was inappropriate, misleading, and inadmissible. To completely understand the allegation behind the jargon, it is important to understand the proper method for forming medical diagnoses.

The differential diagnosis process is the deductive process used by almost all modern medicine in basically every area of the industry that treats or examines patients. By common experience, nearly all citizens of the United States are familiar with the process, if not the name. When one receives a checkup at their primary care physician, the

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doctor applies the differential diagnosis. When the Centers for Disease Control and Prevention are presented with a rare outbreak, the doctors use the differential diagnosis to determine the cause. When a patient is brought by ambulance straight to the emergency room, the E.R. physicians apply the differential diagnosis to determine the proper treatment. Finally, when a medical examiner is presented with a cadaver, the differential diagnosis is how the decision of cause and manner of death are formed.

Every medical conclusion formed through the differential diagnostic process is a deduction informed by (1) observing the symptoms that a subject exhibits, (2) noting the symptoms the subject does not exhibit, and (3) considering the history and circumstances of the subject prior to the medical review.[117]

The defense allegation is that some doctors were trained that a magical "triad" of symptoms exist—the parts of this alleged triad are retinal hemorrhage, subdural hemorrhage, and brain swelling—and that when all three parts of the triad are present in a patient, the deductive differential diagnosis is ignored and shaken baby syndrome is automatically chosen as the cause of injuries. This allegation is significant, because it shows a lack of consideration for other causes for a victim's traumatic brain injury.

[117] Depending on the patient and the issue, testing may also add information for diagnostic review. In example, when a patient's differential diagnosis may indicate cancer, a blood test could be helpful. But if that same patient came in with a suspected fractured femur, a blood test would not be helpful.

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Conversations about this so-called "triad" are a staple of child abuse denialist literature and other conspiracy-oriented writings. The response from the established medical community has consistently been that the "triad" is a strawman argument and is not and was never taught to be a magical set of conditions that supersede the differential diagnostic process. This was established exhaustively at the evidentiary hearing.[118] The so-call triad is a fringe theory designed for litigation rather than medicine.

Nevertheless, the mere fact that the triad is a fringe theory may not necessarily create a blanket exclusion of the principle from consideration here, the way it would be excluded in a *Frye*[119] jurisdiction.[120] In such a case where a medical professional does disregard the differential diagnostic process and renders a decision

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[118] 516-17b, 689-93b, 732-35b.

[119] *Frye v United States*, 293 F 1013 (DC Cir, 1923)

[120] Although *Daubert* does not provide the same instant exclusion of all fringe scientific theories in the same manner as *Frye*, that does not mean that the triad theory would always be admissible in a *Daubert* jurisdiction. In *Daubert* jurisdictions, such as Michigan, the general acceptance question is still a significant part of the test for all underlying scientific principles. Since the triad theory lacks general acceptance and fails to meet the other *Daubert* criteria, it should likely be excluded in most cases. According to this Court, *Daubert* simply expands the available tools for the courts to determine what is junk science.

> [P]roperly understood, the court's gatekeeper role is the same under *Davis–Frye* and *Daubert*. Regardless of which test the court applies, the court may admit evidence only once it ensures, pursuant to MRE 702, that expert testimony meets that rule's standard of reliability. In other words, both tests require courts to exclude junk science; *Daubert* simply allows courts to consider more than just "general acceptance" in determining whether expert testimony must be excluded.

Gilbert v DaimlerChrysler Corp, 470 Mich 749, 782 (2004).

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based on nothing more than three symptoms, that might pose a serious problem.

Here, however, the discussion of the triad was properly excluded by the trial court. The Court of Appeals analysis mistakenly focused its analysis on the *Daubert* questions regarding the underlying scientific principle, which was why it disagreed with the trial court. But the primary reason the triad was inadmissible here was a *Joiner* issue, the application of the scientific principle to this case.

The triad lacked a proper nexus to be relevant to this case. Cassin's discussion of his diagnosis conforms to the proper diagnosis of shaken baby syndrome, rather than the defense's concept of exclusive calculation. Cassin mentioned his diagnostic process by describing the victim's injuries and then stating that he "recognized this as an organization of findings *in the absence of any other thing or phenomena* called the shaken baby syndrome."[121] Since a proper shaken baby syndrome diagnosis is the result a deductive process, such as described by Cassin, there was no magical application of the triad or failure to use the differential diagnosis. Indeed, the autopsy report provided a diagnosis describing and considering far more symptoms and conditions than just the three parts of the triad.

Accordingly, the introduction of the defense triad theory was improper in this case. It was not simply improper because the

[121] 442b.

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underlying scientific principle was fringe,[122] but because the described error simply did not happen here. Without the nexus between the scientific principle and this case, there is too great an analytical leap to claim that this case resembles one where a faulty diagnostic process was used. The trial court did not err when it excluded the defense evidence on the triad, because that diagnostic process, whether an accurate description of some situations or not, did not occur in this case. The Court of Appeals erred when it held otherwise.

Even if the full discussion of the triad were deemed admissible, it would not have changed the result a any potential retrial. As discussed extensively in Issue I, the defendant's admission to shaking the victim, when combined with the fact that the autopsy findings are consistent with shaking as the cause of death, means it would not be probable that the outcome would change at retrial. Furthermore, defendant's refusal to call emergency services for the victim shows consciousness of guilt, making the connection between the autopsy findings and the admission stronger. The discussion of the triad's alleged impact on some cases would not impact the outcome of this case.

[122] The People will leave for another day the question as to whether a theory that has remained fringe for years and has garnered nearly no support in the relevant scientific community fails *Daubert*. The *Daubert* Court expressly held that general acceptance in the relevant scientific field was one factor that courts must consider when reviewing evidence. If a significant finding on that factor cannot serve to justify, in full or in part, a trial court's decision to reject scientific evidence, that would render that factor completely nugatory.

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B. Defendant's theory that the victim's injuries were caused by HIE was appropriately excluded as an unreliable scientific principle under Daubert.

Throughout most of this case, the problems with the defense scientific claims have been with unreasonable application or unreasonable deductions when applied to this case, *Joiner* issues. But the problem with defendant's alternate cause of death theory based around hypoxic-ischemic encephalopathy (HIE) is that the underlying scientific principle is fraudulent and fails the *Daubert* test.

It is important to know the full nature of the defense HIE-based-injury theory. Essentially, the defense experts crafted a multi-part theory to justify the outcome of a victim receiving severe traumatic injuries without any physical, trauma-inducing event. The defense theory starts with the victim choking on formula absent any shaking. From there they theorize that the victim suffered hypoxic-ischemic encephalopathy (HIE),[123] or a loss of blood flow to the brain. Finally, they hypothesize that the return of blood to the victim's head during the resuscitative efforts caused blood to "leak" into the subdural space creating a subdural hemorrhage and the increased pressure would cause retinal hemorrhages.

[123] Hypoxic-ischemic encephalopathy is nearly always seen in abusive shaking cases, as a result of the brain damage suffered by the victimized infant. The distinguishing factor of the intradural leakage theory is that the defense suggests some non-traumatic reason for the HIE and then blames the traumatic injuries, such as subdural hemorrhaging, on the HIE. It is not in question that HIE can be caused by many ailments. The unproven, unscientific portion of this theory is the claim that the HIE, itself, mimics traumatic injury.

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The most obvious criticism of this theory is that it is not a medical theory at all; it is a legal theory, completely concocted for litigation. HIE is not some rare, bizarre condition that lacks proper studies that would show it, combined with resuscitation, mimics traumatic intracranial injuries. HIE is the ultimate cause of death for every drowning, asphyxiation, choking, asthmatic, cardiac arrest, and SIDS fatality. If there were any validity to the claim that HIE and attempted resuscitation caused both subdural hemorrhage and retinal hemorrhages of the type seen in abusive head trauma cases, then the evidence would be abundant. More importantly, these injuries would manifest in cases that did not exhibit a high probability of being abuse.

Although a theory may sound—and may actually be—outlandish, does not automatically mean that the theory instantly fails *Daubert*, if the theory is supported by relevant and reliable scientific principles. Accordingly, it is important to see if defendant successfully provided reliable scientific principles on the scientific principles asserted and whether the defense experts reliably applied those principles to this case. To support the theory, the defense needed one of the following scientific principles to meet the requirements of *Daubert*:

1) HIE can mimic traumatic intracranial brain injury in 2-month-old infants and directly cause the injuries experienced by the victim,
   or
2) Resuscitative efforts after HIE can cause subdural leakage which in turn caused the injuries experienced by the victim.

Unfortunately for the defense, neither HIE theory was supported by relevant and reliable scientific principles.

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The first source for defendant's claim that HIE could cause subdural hemorrhage was dissimilar enough to have no bearing on the instant case. Specifically, the defense cited three articles by Cohen and Scheimberg, which failed to differentiate between the few reviewed subjects of the age of the victim, and the numerous neonatal subjects who would often be expected to have some sort of subdural-hemorrhage due to birth. One of the articles reviewed nothing but neonates and fetuses. The trial court rightly held that these articles did not stand for a scientific principle that this 2-month-old victim could have suffered from aliments when the demographic of the study did not consider a cohort relevant to the instant victim. Specifically, there were the following *Daubert* problems: a methodological defect in the defense theory (these articles did not feature any particularized findings relevant to a subject of the victim's age), the articles lacked error rates, and there was no showing of general acceptance in the medical community for their proposed principle.

Nichols discussed the HIE theory and referenced the "*Dysphagic Choking*" article by Galaznik, Barnes, and two other authors.[124] Clearly quoting other experts in the same hearing raises red flags. But beyond that, the article itself has significant problems as discussed on cross-examination. Although the article omits names, it is a description of a court case in which all four coauthors testified as witnesses for the defendant. Their theory that choking and the aftermath caused all the victim's injuries was rejected by all the treating doctors and eventually by the jury as well. Further, the authors of the *Dysphagic Choking*

[124] 338b.

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article failed to disclose the other injuries suffered by the victim that did not fit into their theory. Ultimately, the *Dysphagic Choking* article failed all of the *Daubert* factors:

- It was tested and proven false at the very trial regarding the victim in question.
- The flaws in their methodology and the deceitfulness of their tactics are well established.
- Their principle has a 100% error rate, with the only case reviewed decided against their theory.
- There is widespread rejection for this scientific principle in the relevant scientific community.

In attempt to legitimize the leakage theory, the defense experts cited articles by Jennian Geddes and an article by Squires and Mack. Although these articles purport to provide a foundation for the intradural leakage theory (blood leaking from the dura and forming a subdural hemorrhage) they do not provide anything more than an opinion. The Squire and Mack article was not a study at all. Rather, it was simply and openly an opinion paper suggesting that the authors believe in the intradural leakage theory and that they believe that resuscitation could cause it. Similarly, Geddes suggested her support for the intradural leakage theory, even though it was never manifest during any of her tests. Data, not guesswork or supposition, is the hallmark of science. The leakage theory lacks supporting data. Therefore, it also lacks any scientific backing. Citing an unsupported opinion to justify an opinion does not satisfy *Daubert*. "Nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to

admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert."[125]

Herein lay the problem with the Court of Appeals opinion. The Court of Appeals rightly opined that it was not up to the trial court to determine which conclusion is right when experts disagree on the scientific conclusions. But the Court of Appeals failed to recognize is that the trial court is called to act as the gatekeeper to prevent the introduction of so-called scientific principles that are not science at all, but instead are based in opinion or advocacy. An opinion article advocating for particular position without supplying relevant data to justify that opinion does not satisfy *Daubert* to become the basis of a reliable scientific principle, no matter where it is published or what view of a topic it takes. An article studying a particular demographic at high risk for a particular aliment cannot be used as a scientific principle to "prove" a different demographic would exhibit that ailment. Finally, an article written for advocacy against an accepted diagnosis cannot be considered proof of a new diagnosis when everyone involved except for the authors agreed that the paper was errant and designed expressly for litigation.

It is not up to the trial court to make a final determination as to whether HIE or suffocation and resuscitation can cause subdural hemorrhage. But it is up to the trial court to hold the proponent of that theory to their legal requirement to back up their opinion with underlying scientific principles that are reliable. Here, the defense

[125] *Joiner*, 522 US at 137.

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failed to provide reliable science to uphold its HIE theory. It does not matter whether the HIE theory is right, wrong, or inconceivable. It was unsupported by legitimate scientific studies and, accordingly, was rightly excluded by the trial court.

Nevertheless, as explained in Issue I, even if the trial court's decision to exclude the HIE evidence was erroneous, it was harmless. The HIE testimony would not make a difference at retrial. The admission, which was consistent with the victim's symptoms at death, firmly establish defendant's guilt.

C. Cassin's retraction was scientifically invalid conjecture unsupported by any underlying scientific principle.

The trial court did not err when it excluded Cassin's reasoning for changing his opinion on the manner of death from homicide to accidental. Generally, this is not an issue that the People need to argue strenuously, considering that the bulk of Cassin's testimony was very favorable to the People.

Cassin's testimony included all of the following points that were helpful to the People's case:

- He affirmed all the physical findings at autopsy,[126]
- He rejected the defense contention that there were no retinal hemorrhages because they were not found in a brief eye examination,[127]
- He explicitly said that the cause of death was the same as he reported in the autopsy,[128]

[126] 454b.
[127] 454b.
[128] 454b.

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- He agreed that the manner of death could still be a homicide by shaking and that it would now be called abusive head trauma.[129]

Nevertheless, it is important to point out that Cassin's testimony did not meet the requirements of MRE 702 and 703 and *Daubert*. For a scientific opinion to be valid, it must be based on "sufficient facts or data" and in order for that opinion to be considered valid, the underlying facts or data must be admitted into evidence.[130] But Cassin was unable to cite *any* facts or data to support his allegedly scientific change of opinion. He claimed that his change of opinion was based on a number of scholarly articles or publications, but he was unable to even cite a single source to provide backing to his claim. This is the very definition of the "*ipse dixit* of the expert."[131] Cassin also said that he believed that the majority of forensic pathologists agreed that non-traumatic events can cause subdural hemorrhage and retinal hemorrhage.[132] That statement was found to be errant due to the *Acceptance of SBS* study that directly measured that question.[133]

Conclusion

The Court of Appeals was incorrect when it ruled that the trial court erred by excluding testimony regarding the defense triad and HIE theories.

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[129] 463-64b
[130] MRE 702 & 703.
[131] *Joiner*, 522 US at 137.
[132] 461b.
[133] 903-08b.

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The triad theory was inadmissible because it had nothing to do with this case. The victim's diagnosis went through the typical differential diagnostic process that found both injuries supporting a diagnosis of shaken baby syndrome and an absence of other symptoms or circumstances that would lead to a different diagnosis. Accordingly, the defense discussion of the triad is immaterial pertaining to this case.

The HIE theory was inadmissible because it is not based on science, but rather advocacy. None of the defense sources provided any scientific reasoning that a 2-month-old infant would suffer subdural hemorrhage, retinal hemorrhage, nerve sheathe hemorrhage, or a fractured acromion based on a non-traumatic choking event or resuscitation. Rather, the defense provided the studies about fetus and neonates or the simple *ipse dixit* of defendant's own experts or like-minded experts.

Finally, Cassin's testimony was more helpful to the People than the defense, but it was inadmissible under MRE 702 and 703, because he could not site any underlying scientific principle, article, or data at all to justify his newly changed opinions.

Even if the Court of Appeals was correct and the triad theory, the HIE theory, and Cassin's testimony were admissible, they would not change this case. As explained in issue I, the evidence against defendant is too overwhelming for a procedural disagreement, an alternative theory, or a minor equivocation to overcome.

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CONCLUSION

As the People have shown, the instant conviction does not rest on a scientific theory, but on defendant's guilty admissions and conduct. As such, there is no reason to grant leave to appeal in order to debate the merits of SBS/AHT. But if the Court does want to consider the scientific aspect of these types of cases, then it should grant leave and hold not only that the diagnosis offered in evidence here and elsewhere is properly grounded, but that the defense theories in opposition do not meet the threshold of MRE 702 as articulated in *Daubert* and *Gilbert*. As the trial court found after an extensive hearing, what the defense offered here is, at best, unfounded speculation. This Court should preclude trial courts from admitting that type of speculation going forward.

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RELIEF

THEREFORE, the People request that this Honorable Court deny defendant's application for leave to appeal or, if it grants leave, affirm the findings of the trial court in all regards.

Respectfully submitted,

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