

Litigating Postconviction Challenges to Shaken Baby Syndrome Convictions

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Difficult Cases

- A baby has died or suffered injury; someone must be held responsible
- Unlike other claims of innocence, there may be no one else to blame—there may have been no crime at all
- Conclusive resolution may not be possible in many cases—no “DNA” to prove innocence conclusively

The Arson Analogy

- Conviction based largely on “science”
- The science has changed, undermining the basis for the conviction
- But absolute proof of innocence may be difficult or impossible

The Stories of Innocence

- The child was not abused—can be used where there is affirmative evidence of some other cause of death or injury (natural or accidental)
- The child was abused, but not by my client
- My client hurt the child, but not intentionally or recklessly; it was an accident
- The jury was misled by invalid or debatable science
 - Despite what the experts said at trial, there might not have been a crime at all
 - Despite the outdated science presented at trial, the science does not point to my client
 - Despite the baseless assertions of the experts at trial, even if my client did something, it was not intentional or reckless, but accidental

This is NOT to deny or excuse child abuse

- What we're talking about: Cases based upon a theory that the child's injuries or death was caused by shaking or shaking with impact, where there is no reliable direct evidence of guilt beyond the opinions of medical experts.
- "In its classic formulation, SBS comes as close as one could imagine to a medical diagnosis of murder: prosecutors use it to prove the mechanism of death, the intent to harm, and the identity of the killer."
 - Deborah Tuerkheimer, *The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts*, 87 WASH. U.L.R. 1, 5 (2009).

The Changing Science

- The Evidence Based Medicine Critique
 - M. Donohoe, *Evidence-Based Medicine and Shaken Baby Syndrome Part I: Literature Review, 1996-1998*, 24 AM J. FORENSIC MED. PATHOL. 239 (2003)
- The need for a full “differential diagnosis”

The Changing Science: Debunking the Myth of Pathognomonny

- Research has shown that the classic triad at the foundation of SBS theory—cerebral edema, subdural hematomas, and retinal hemorrhages—can all be caused by forces other than shaking
- Most doctors now recognize that the classic “triad” is NOT exclusively diagnostic of SBS, and that no one of the signs or symptoms is pathognomonic.

Q: Is there any finding, two, or even three findings that would cause you or, in your opinion, any responsible physician to diagnose shaken impact syndrome? Any one, two or three findings?

A : Not exclusively, no.

...

A: That’s well recognized, the concept that no single finding is in and of itself pathognomonic, and it’s unclear to me why the defense would spend so much time elaborating on that point when I consider it to be a given. No responsible, knowledgeable physician would arrive at that diagnosis on the basis of a single or two findings, but rather the collection of those.”

-- Testimony of Dr. William Perloff, State’s pediatric expert, *State of Wisconsin v. Audrey Edmunds*, Dane County, WI, Case No. 1996CF555, at 32

Debunking the Myth of Pathognomony

- Retinal hemorrhages, perimacular retinal folds, and retinoschisis are universally no longer deemed pathognomonic of SBS
- *E.g.*, P.E. Lantz, *Perimacular Retinal Folds from Childhood Head Trauma*, 328 *Brit. Med. J.* 754 (2004); Gregg T. Leuder et al., *Perimacular Retinal Folds Simulating Nonaccidental Injury in an Infant*, 124 *Archives Ophthalmology* 1782 (2006).
- State's ophthalmologist Dr. Levin in *State v. Edmunds* acknowledged that new research has shown that “there may be no pathognomonic eye signs in Shaken Baby Syndrome.”

Debunking the Myth of Pathognomony

Q: And you understand that in this case Dr. Mills testified ... that that kind of eye injury is not known to occur in infants except in shaking type injury?

A: I do understand that, yes.

Q: And that's no longer true?

A: Well, it's correct, it's no longer true.

Dr. William Perloff, State's expert in State v. Audrey Edmunds

The Changing Science: Mimics of Child SBS/Abusive Head Trauma

- Accidental trauma (e.g., short falls), congenital malformations, metabolic disorders, hematological diseases, infectious diseases, autoimmune conditions, birth effects, rebleeds, hypoxia, childhood stroke, genetic conditions, etc. Patrick D. Barnes & Michael Krasnokutsky, *Imagin of the Central Nervous System in Suspected or Alleged Nonaccidental Injury, Including the Mimics*, 18 TOP. MAGN. RESON. IMAGING 53, 65-70 (2007); John Plunkett, *Fatal Pediatric Head Injuries Caused by Short-Distance Falls*, 22 AM. J. FORENSIC MED. & PATHOLOGY 1 (2001); Andrew P. Sirotnak, *Medical Disorders that Mimic Abusive Head Trauma*, IN ABUSIVE HEAD TRAUMA IN INFANTS AND CHILDREN: A MEDICAL, LEGAL, AND FORENSIC REFERENCE 191 (Lori Frasier et al., eds. 2006); K. Hymel et al., *Intracranial Hemorrhage and Rebleeding in Suspected Victims of Abusive Head Trauma: Addressing the Forensic Controversies*, 7 CHILD MALTREATMENT 329 (2002).

The Changing Science: The Biomechanics of Shaking

- “[S]evere head injuries commonly diagnosed as shaking injuries require impact to occur and ... shaking alone in an otherwise normal baby is unlikely to cause the shaken baby syndrome.” Forces from shaking fall well below established injury thresholds and are 1/50th the force of impact, including impact on soft surfaces. A. C. Duhaime et al., *The Shaken Baby Syndrome: A Clinical, Pathological and Biomechanical Study*, 66 J. NEUROSURG. 409 (1987)
- The peak rotational accelerations for a shake are less than those in a 1 foot fall onto carpet. Prange et al., *Anthropomorphic Simulations of Falls, Shakes, and Inflicted Impacts in Infants*, 99 J. NEUROSURG. 143 (2003)
- A.K. Ommaya, W. Goldsmith, & L.E. Thibault, *Biomechanics and Neuropathology of Adult and Paediatric Head Injury*, 16 BR. J. NEUROSURG. 220 (2002); Chancey, *Improved estimation of human neck tensile tolerance: Reducing the range of reported tolerance using anthropometrically correct muscles and optimized physiologic initial conditions* (2003); Van Ee, *Tensile Properties of the Human Muscular and Ligamentous Cervical Spine* (2000); Uscinski, *Shaken Baby Syndrome: An Odyssey* (2006); Uscinski, *Shaken Baby Syndrome: Fundamental Questions* (2002); Prange, *Mechanical Properties and Anthropometry of the Human Infant Head* (2004)

Biomechanical Models

Cross –examination of Dr. William Perloff, State’s pediatric expert in State v. Audrey Edmunds:

Q: I think I heard you say that if the model doesn’t comport with reality, then there's something wrong with the model. Is that fair?

A: Yes.

Q: Isn't it also possible that what that shows is that there's something wrong with what we have perceived to be reality? There's something wrong with our perception of reality. Isn't that also possible?

A: Yes, I think it is possible.

The Changing Science: Degree of Force

Debunking “short falls can’t kill”

- John Plunkett, *Fatal Pediatric Head Injuries Caused by Short Distance Falls*, 22 AM. J. FORENS. MED. PATHOL. 1 (2001)
 - 18 documented cases of child deaths from short falls, most presenting subdural hematoma, edema, and retinal hemorrhage (4 of 6 whose eyes were examined)
 - Case study #5: 23 month old child from small plastic play structure and hit head on carpeted floor. The fall was captured on videotape. Child suffered subdural hematoma with midline shift and bilateral retinal hemorrhage.



Debunking “short falls can’t kill”

- Dr. Alex Levin, State’s ophthalmologist in *State v. Edmunds*: The Plunkett article is a “very interesting paper and a valuable addition to the literature in which 18 deaths from, quote/unquote, short falls ... were described, of which six had eye examinations, of which four had hemorrhages.”
- J.R. Hall et al., *The Mortality of Childhood Falls*, 29 J. TRAUMA 1273 (1989)
 - Describes 18 children who died from falls of 3 feet or less (2 in medical facilities)
- See also N. Aoki & H. Masuzawa, *Infantile Acute Subdural Hematoma: Clinical Analysis of 26 Cases*, 61 J. NEUROSURG. 273 (1984).

Short Falls Can Kill

Cross-Examination of Dr. William Perloff, State's pediatrician in *State v. Edmunds*:

Q: Okay. Have you ever testified that short distance falls do not cause the constellation of injuries that you see in a case like this?

A : Probably.

Q: And that would have been your belief in 1996?

A: Yes.

Q: Would that be your belief today?

A : I would refine that belief I think. I think I would want to qualify that statement today.

Q: Based on research that's emerged in the last 10 years ... and [c]ase reports showing that indeed short distance falls can cause these kinds of injuries, correct?

A: Under specific circumstances, yes.

Short Falls Can Kill

Cross-Examination of Dr. Jeffrey Jentzen, State's Pathologist in State v. Edmunds:

Q: Now, there is really no scientific basis, however, for saying that [falling from a third or fourth story building or being hit by a car at 20-30 mph is] the amount of force it takes, is there?

A: No. Other than the fact we see that type of injury and those kind of injuries.

Q: So sort of anecdotal, observational, cumulative kind of experience kind of thing?

A: Yes.

The Changing Science: Lucid Intervals

- Lucid Intervals are real; cannot time these brain injuries. Lucid Intervals documented of several hours to 72 hours or more; child may have flu-like symptoms in meantime. M.G.F. Gilliland, *Interval Duration Between Injury and Severe Symptoms in Nonaccidental Head Trauma in Infants and Young Children*, 43 J. FORENSIC SCI. 723 (1998).
- “The lucid interval is a distinct discomfoting but real possibility.” *Dr. Robert Huntington, State’s pathologist testifying that research caused him to change his understanding in this way, in State v. Audrey Edmunds.*
- “[T]his case more and more convinces me that us pathologists can know what. When gives us problems. Who we almost never can say.” *Id.*
- *See also* Kristy B. Arbogast et al., *In Reply to Letter to Editor, Initial Neurologic Presentation in Young Children Sustaining Inflicted and Unintentional Fatal Head Injuries*, 116 PEDIATRICS 1608 (2005); Robert Huntington, *Letter, Symptoms Following Head Injury*, 23 AM. J. FORENSIC MED. & PATHOLOGY 105 (2002).

The Changing Science: The Bottom Line

- Scientific advances have undermined the theory that nothing can cause the triad except shaking (mechanism of death)
- Scientific advances have undermined the theory that shaking alone can cause serious brain injury and death (mechanism and cause of death)
- Scientific advances have undermined the theory the last person with the child must have been the abuser—the injuries cannot be timed (identity)
- Scientific advances have undermined the folklore that the injuries had to have been caused by force equal to a multi-story fall or car crash; can be caused accidentally by short falls (state of mind)
- Scientific advances have established many natural causes for medical findings previously attributed to shaking or abuse

Signs of Change

- Changing Terminology: The Committee on Child Abuse and Neglect of the American Academy of Pediatrics recently recommended that “[p]ediatricians should use the term ‘abusive head’ trauma rather than a term that implies a single injury mechanism, such as shaken baby syndrome.” Cindy Christian et al., *Abusive Head Trauma in Infants and Children*, 123 PEDIATRICS 1409, 1411 (2009).
- Numerous different terms are now used: shaken impact syndrome (SIS); inflicted childhood neurotrauma; abusive head trauma (AHT); inflicted traumatic brain injury (inflicted TBI); and non-accidental head injury (NAHI). Robert Reece, *What Are We Trying to Measure: The Problems of Case Ascertainment*, 34 AM. J. PREVENTATIVE MED. S116 (2008).

Signs of Change

- In 2006, the National Association of Medical Examiners (NAME) withdrew its position paper on shaking
- The NAME annual conference in 2006 included presentations with titles such as, “‘Where’s the Shaking’?: Dragons, Elves, the Shaking Baby Syndrome, and Other Mythical Entities,” and “Use of the Triad of Scant Subdural Hemorrhage, Brain Swelling, and Retinal Hemorrhages to Diagnose Non-Accidental Injury is Not Scientifically Valid.”

Signs of Change

- Acquittals on the rise
 - E.g., *State v. Thomas Paul Lunardi, Jr.*, Iowa District Court for Scott County, Case No. FECR 219890, Opinion and Verdict (April 4, 2000) (bench trial), in which court concluded that conflicting opinions of experts left the court “not firmly convinced that any act of the Defendant resulted in injury to [the child]. It is equally likely that her condition was caused by a vitamin k deficiency disease process.”
 - E.g., *People v. Constance Rieken*, Iroquois County, Illinois, Case No. 05-CF-75, acquitted after trial (March 2009). See <http://www.wgfaradio.com/2009/03/03/regional-news/wgfa-news-march-3-2009/>.

Signs of Change

- The Legal and Popular Literature
 - Deborah Tuerkheimer, *The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts*, 87 WASH. U.L.R. 1 (2009)
 - Molly Gena, *Shaken Baby Syndrome: Medical Uncertainty Casts Doubt on Convictions*, 2007 WIS. L. REV. 701
 - Roger H. Kelly and Zachary M. Bravos, *A Critical Look at the Shaken Baby Syndrome*, 97 ILL. BAR J. 200 (April 2009)
 - Neal Friedman, *Shaken Baby Syndrome: Medical research provides new tools for the defense in “shaken baby syndrome” cases*, DEFENSE 15 (Washington, Nov. 2009)
 - Mark Anderson, *Does Shaken Baby Syndrome Really Exist?*, DISCOVER (December 2008), <http://discovermagazine.com/2008/dec/02-does-shaken-baby-syndrome-really-exist>
 - Radley Balko, *A Shake to the System: New research into “shaken baby syndrome” could put hundreds of convictions in peril*, REASONONLINE, <http://reason.com/news/printer/136176.html>

Judicial Recognition of the Changing Science

- *State v. Edmunds*, 746 N.W.2d 590, para. 15 (Wis. App. 2008).
“Edmunds presented evidence that was not discovered until after her conviction, in the form of expert medical testimony, that a significant and legitimate debate in the medical community has developed in the past ten years over whether infants can be fatally injured through shaking alone, whether an infant may suffer head trauma and yet experience a significant lucid interval prior to death, and whether other causes may mimic the symptoms traditionally viewed as indicating shaken baby or shaken impact syndrome.”
- *Id.* para. 23. “[T]here has been a shift in mainstream medical opinion since the time of Edmunds’s trial as to the cause of the types of injuries Natalie suffered.... However, it is the emergency of a legitimate and significant dispute within the medical community as to the cause of those injuries that constitutes newly discovered evidence.”

Judicial Recognition of the Changing Science

- *State v. Kathy Hyatt*, Circuit Court of Shelby County, MO, Case No. 06M7-CR00016-02 (Order dated Nov. 2007). “There is substantial, persistent and continuing criticism of this [SBS] diagnosis among many in the medical and scientific research communities. The critics contend that subdural hematoma and retinal bleeding can have many other causes and that the diagnosis of shaken baby syndrome is merely a ‘default’ diagnosis, one which pediatricians use when they have no other explanation for the cause of the child’s injuries.” Accordingly, SBS theory based solely on SDH, retinal bleeding, and absence of cranial trauma is not “generally accepted” and is inadmissible.
- *State v. Schoonmaker*, 176 P.3d 1105 (N.M. 2008) “[D]isagreement exists in the medical community as to the amount of time between when injuries occur and when the child becomes symptomatic, and whether injuries like Child’s can be caused by short-distance falls.” Court granted new trial because of trial court’s refusal to provide funding for experts to address these issues.

Judicial Recognition of the Changing Science

- *Ex parte Cathy Lynn Henderson*, 246 S.W.3d 690 (Tex. Ct. Crim. App. 2007)
 - Court granted stay of execution and remanded habeas petition for further proceedings because of changes in the medical science. State’s medical examiner at trial testified this was SBS. After trial, however, he submitted affidavit swearing that, because of changes in the research, he could no longer say “whether [the child’s] injuries resulted from an intentional act or an accidental fall.”

International Recognition of the Changing Science

- Great Britain: In *R. v. Harris*, [2005] EWCA Crim. 1980 (Eng.)
 - Four consolidated cases; court held that, given the changing science, the convictions based solely on medical evidence were unsafe, but those with other evidence of abuse were affirmed.
- Great Britain: Attorney General pledged to undertake systematic review of infant death cases. February 2006 found that, of 88 cases reviewed, 3 warranted revisiting (added to 9 that had previously had been identified)

International Recognition of the Changing Science

- Australia: In 2001, the supreme court of the Australian Capital Territory (trial level court) reviewed the science and concluded: “The evidence revealed a paucity of empirical research on potentially critical issues.” Evidence of SBS theory excluded because “such opinions would not be based wholly or even substantially on the expert’s specialized body of knowledge as a pediatrician but [] on a combination of speculation, inference, and a process of reasoning beyond the relevant field of expertise.” *The Queen v. Stewart Lee*, SCC 69 of 2000 (Sup. Ct. Australian Capital Territory, Canberra), 2002 WL 14350, para. 52.
- Canada: Goudge Inquiry. Ontario Attorney General Chris Bentley said in the fall of 2008 that the Province of Ontario would examine 220 old baby deaths to determine if any resulted in miscarriages of justice. “We want to make sure that nobody was convicted or nobody was subject to other legal proceedings ... based on science that would no longer be acceptable today because of the evolution of that science.” Theresa Boyle, *Baby death review ‘daunting.’* Parentcentral.ca, available at www.parentcentral.ca/parent/articlePrint/512962.

Building your Postconviction Case

- Evaluate the record—transcripts, medical reports, police reports, appellate opinions
 - Assess whether the case was built largely on medical opinion
 - Need medical records—can try to get them from defense counsel or the medical examiner’s office; often requires a release or court order
 - Talk to witnesses

Building your Postconviction Case

- Consult the relevant experts
 - Pathologists
 - Radiologists
 - Biomechanical Engineers
 - Ophthalmologists
 - Pediatricians
 - Merely consulting one kind of medical expert may not be enough. *E.g., People v. Julie Christine Lael Baumer*, Macomb Co., Mich. Cir. Court Case No. 2004-2096-FH, Opinion & Order dated Nov. 20, 2009 (trial counsel ineffective for consulting only a pathologist, when consult with radiologist was necessary to develop evidence of innocence)
- Know the legal and medical literature
- Know the facts, witnesses, & record

Legal Theories/Procedural Hooks

- Newly Discovered Evidence
 - Typically for trials before 1998-2000, but possibly thereafter
- Ineffective Assistance of Counsel
 - Especially for trials post 1998-2000
- *Giglio* (or *Brady*) violations
 - Especially for trials post 1998-2000
- Interests of Justice
- *Ake v. Oklahoma* claims—failure to fund experts
- Insufficient Evidence

Newly Discovered Evidence

Usually requires showing some variation of:

1. Evidence discovered after trial
2. Could not have been discovered earlier through exercise of diligence—defense was not negligent
3. The evidence is material
4. The evidence is not cumulative
5. The evidence would make it probable that the outcome would be different

Newly Discovered Evidence

State v. Edmunds, 746 N.W.2d 590 (Wis. App. 2008)

- Edmunds met the first factors—the evidence was new and could not have been discovered before trial: “Edmunds presented evidence that was not discovered until after her conviction, in the form of expert medical testimony, that a significant and legitimate debate in the medical community has developed in the past ten years over whether infants can be fatally injured through shaking alone, whether an infant may suffer head trauma and yet experience a significant lucid interval prior to death, and whether other causes may mimic the symptoms traditionally viewed as indicating shaken baby or shaken impact syndrome.” *Edmunds at para. 15*. “[T]here has been a shift in mainstream medical opinion since the time of Edmunds’s trial as to the cause of the types of injuries Natalie suffered.... However, it is the emergency of a legitimate and significant dispute within the medical community as to the cause of those injuries that constitutes newly discovered evidence.” *Id.* at para. 23.

Newly Discovered Evidence

State v. Edmunds, continued...

- After determining that both the state's and the defense experts were credible, "it was not the court's role to weigh the evidence. Instead, once the circuit court found that Edmunds's newly discovered medical evidence was credible, it was required to determine whether there was a reasonable probability that a jury, hearing all the medical evidence, would have a reasonable doubt as to Edmunds's guilt. This is not answered by a determination that the State's evidence was stronger. As explained [in prior case law], a jury could have a reasonable doubt as to a defendant's guilt even if the State's evidence is stronger." *Id.* at para. 18.

Ineffective Assistance of Counsel

- *People v. Julie Christine Lael Baumer, Macomb Co., MI, Circuit Court Case No. 2004-2096-FH (Decision dated Nov. 20, 2009)*
 - Court found IAC due to deficient investigation and mischaracterization of the medical evidence (failure to produce evidence that child actually suffered from venous sinus thrombosis, i.e., “infant stroke”).
 - And appellate counsel was ineffective for not raising this claim on direct appeal via *Ginther* hearing.
- *State v. Ware*, Superior Court of DeKalb County, GA, order granting new trial based on ineffective assistance of counsel, Dec. 6, 2006, *aff'd*, 653 S.E.2d 21 (Ga. 2007)
- *Ex Parte Briggs*, 187 S.W.3d 458, 467 (Tex. App. 2005) (defense counsel’s decision in child abuse case not to consult with or call an expert because of lack of funds “was not a ‘strategic’ decision, it was an economic one.”)
- *State v. Schoonmaker*, 176 P.3d 1105 (N.M. 2008) (same)
- *State v. Hales*, 152 P.3d 321 (Utah 2007) (counsel was ineffective for relying on a forensic pathologist in case based largely on CT scans since reasonable attorney would also have consulted a qualified radiologist)
- BUT SEE *State v. Quentin J. Louis*, Marathon Co., Wis., Circuit Court Case No 05-CF-193 (Decision dated Aug. 12, 2009)—defendant did not produce evidence showing that a reasonably prudent lawyer would have consulted more than one expert. Not IAC if counsel consulted relevant experts and concluded their testimony not helpful, at least if that conclusion was *reasonable*.

Material Misrepresentation

- *Giglio*, 405 US 150 (1972)
 - Material misrepresentation by witness
 - Prosecutor unaware
 - Impeaches credibility of evidence (applies to evidence where weight was exaggerated)

Interests of Justice

- Even if the evidence isn't newly discovered, and counsel wasn't ineffective, the interests of justice might still require a new trial, given that failure to present the evidence about the medical debate means the real controversy was not fully tried.
 - e.g., Wis. Stat. § 805.15(1), *State v. Quentin J. Louis*, Marathon Co., Wis., Circuit Court Case No 05-CF-193 (Decision dated Aug. 12, 2009) (“To uphold the integrity of our system of justice, a jury should be afforded the opportunity to hear and evaluate this other evidence.”)

Insufficiency of the Evidence or Against the Weight of the Evidence

- Because jurors are not equipped to evaluate science, they tend to rely not so much on the validity of the science as on the credentials, reputation, demeanor, and communication skills of the expert instead.
 - Learned Hand, *Historical and Practical Considerations Regarding Expert Testimony*, 15 Harv. L. Rev. 40, 55 (1901): “[W]hen any conflict between really contradictory propositions arises, or any reconciliation between seemingly contradictory propositions is necessary, the jury is not a competent tribunal.”
 - Samuel R. Gross, *Expert Evidence*, 1991 Wis. L. Rev. 1113, 1185 (“Resolving differences between experts is notoriously difficult even for other experts; to expect lay people to do it is unrealistic under the best of circumstances, not to mention in court.”)
- So, arguably, a case built on nothing more than conflicting medical opinions should never be sufficient to eliminate all reasonable doubts

The Claims: Insufficiency of the Evidence

- *Smith v. Mitchell*, 437 F.3d 884 (9th Cir. 2006), *vacated sub nom. Patrick v. Smith*, 127 S.Ct. 649 (2007), *reinstated sub nom. Smith v. Patrick*, 508 F.3d 1256 (2007), *vacated and remanded for further consideration in light of McDaniel v. Brown*, 558 U.S. ---- (2010), 2010 WL 154859 (Jan. 19, 2010)
 - Grant of federal habeas because evidence insufficient where the physical evidence was not typical of that usually associated with SBS—found small, non-fatal subdural bleeding, but no brain swelling and no retinal hemorrhages. State’s expert’s theory of undetectable brain stem shearing had no support in the research literature.
- *People v. Servin*, 2009 WL 2036727 (Cal. App. 2 Dist. July 15, 2009) (unpublished). The fact that experts were split on whether the injuries could have been inflicted up to 25 hours before the CT scan, which would include time in which the defendant’s niece was present with the baby, did not render the evidence insufficient to convict the defendant. Because there was some medical opinion to the effect that the injuries had to have been inflicted while child was in exclusive control of defendant, that was sufficient to sustain the verdict. Resolving that split among experts was for the jury.
- *Thomas v. State*, 2009 WL 1364348 (Tex. App.-Austin, May 14, 2009). Evidence sufficient even though medical testimony in sharp conflict about the cause of death—shaking versus choking on formula and vomit. “Once admitted, this conflicting evidence presents an issue for the jury to resolve.”

Responding to the Prosecution's Arguments

- *Defendant would have it that any time there is disagreement among scientists there is newly discovered evidence.*
 - This is the problem of the interface of science and the law—scientific knowledge undergoes a process of unrelenting revision.
- Response: Not just any disagreement will do—only disagreement about important issues in cases that depend upon the science

Responding to the Prosecution's Arguments

- *The defense argues inconsistent theories—can't offer a definitive theory of what caused the injury/death.*
 - In *Edmunds*, the prosecutor argued: “the primary flaw [in the defendant's theory] is the fact—and it's not an opinion; it is a fact—that no one on this defense team could agree on the cause of death in this case.”
- Response: Often the point is often that science cannot conclusively establish cause and manner of death
 - Defense has no burden to prove how child died
 - It is enough to show that the State cannot prove that the defendant shook or otherwise abused the child

Responding to the Prosecution's Arguments

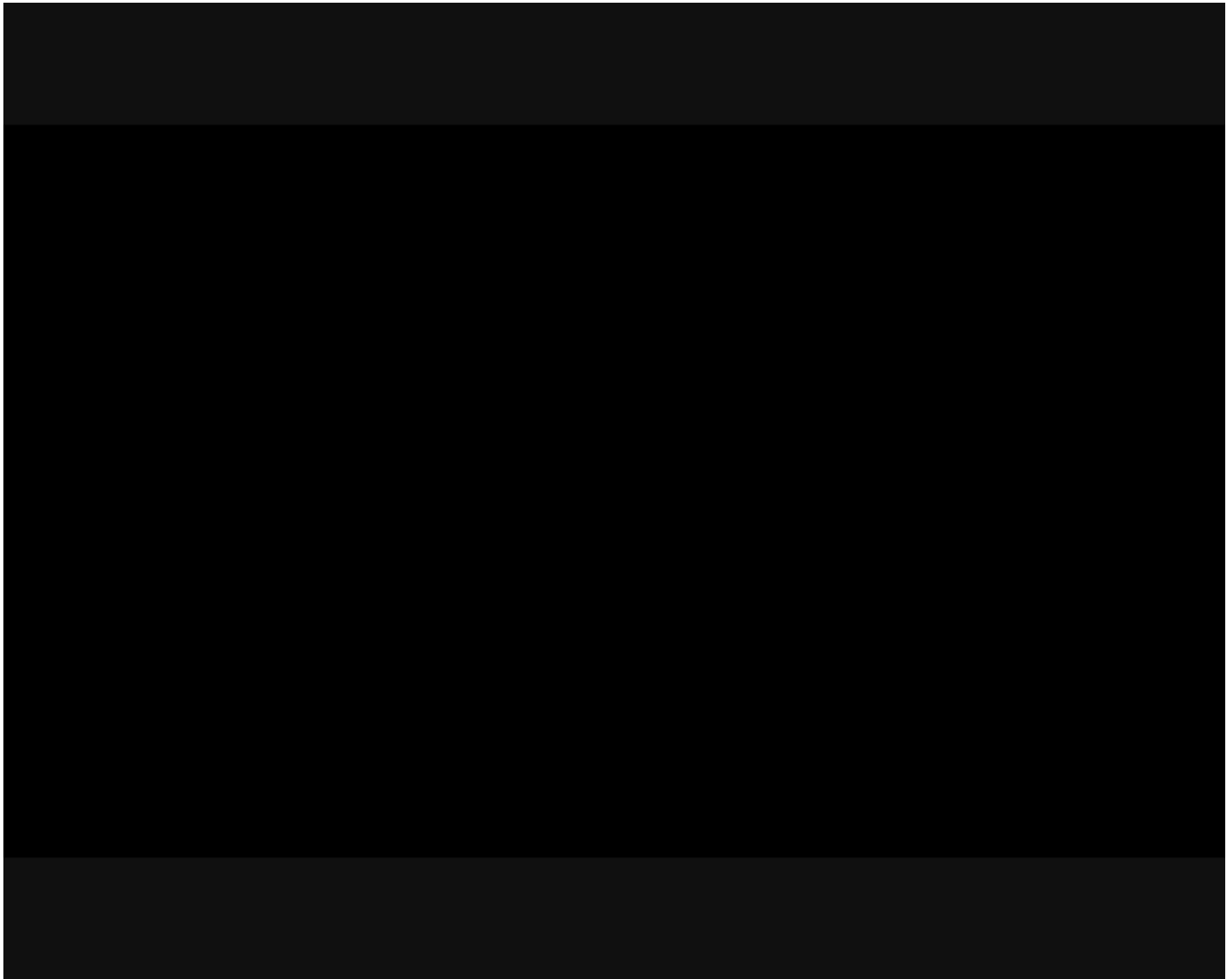
- *Confession evidence proves SBS*
 - Dr. Perloff: “Without any doubt, the best evidence [of SBS] we have is people who did it saying what they did.” Pp. 28-29
- Response: Confessions are not science
 - Retrospective review of 171 pediatric cases of inflicted traumatic brain injury—90 involved no admission, and 81 admitted inflicting the injury. Suzanne P. Starling, et al., *Analysis of Perpetrator Admissions to Inflicted Traumatic Brain Injury in children*, 158 ARCH. PEDIATR. ADOLESC. MED. 454 (2004)
 - Among the confessors, a little over half described no impact; a little less than half described impact. *Id.*
 - Subject to false confessions—know the literature. E.g., Saul M. Kassin, et. al., *Police-Induced Confessions: Risk Factors and Recommendations*, 34 LAW HUM. BEHAV. 3 (2010).

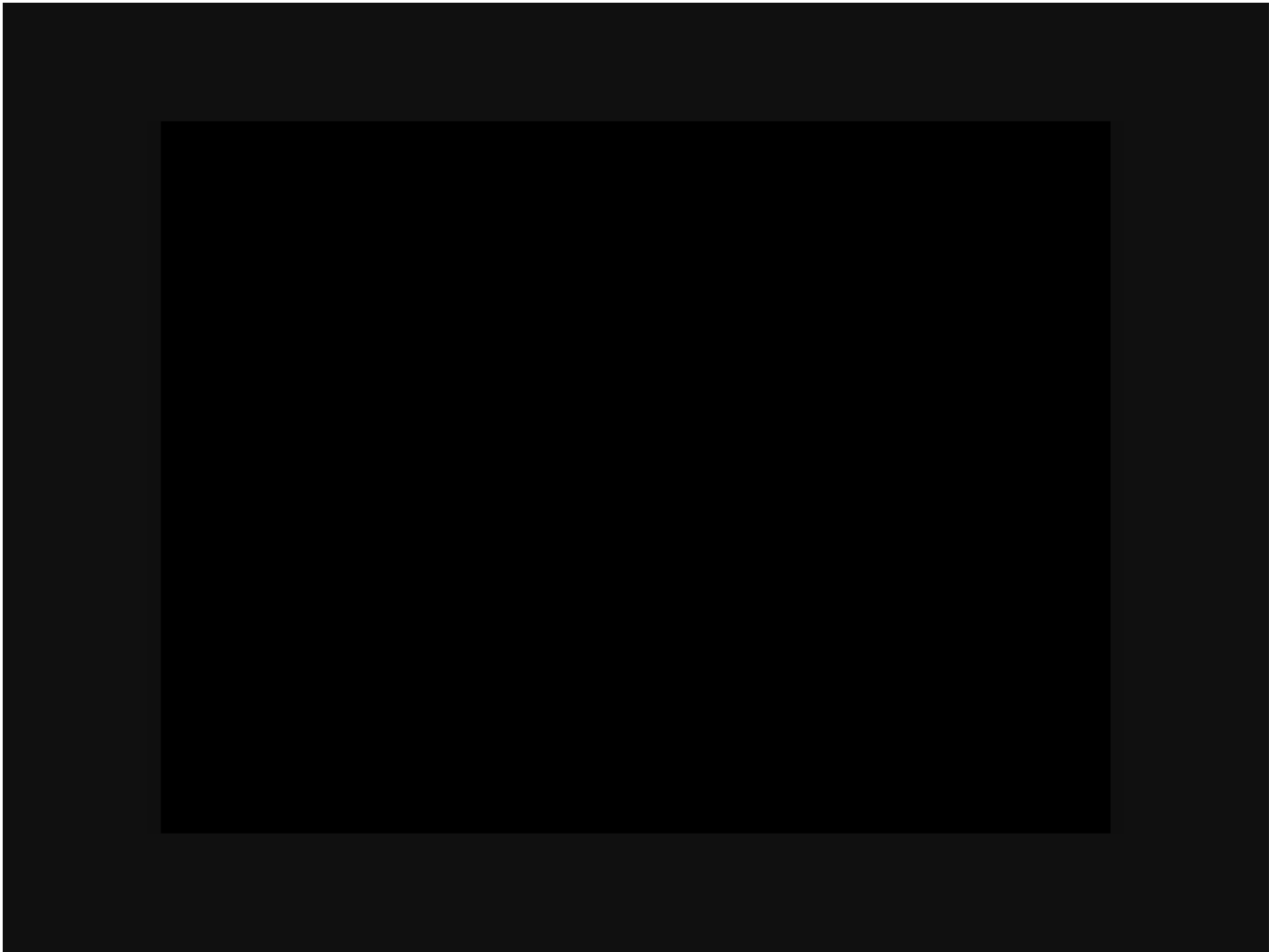
False Confessions

- Know the false confessions literature. Why SBS suspects might confess falsely:
 - Suspects succumb to police pressures
 - Suspects motivated by feelings of guilt
 - Shaking is a normal response to an unresponsive child
 - Guilt minimization— confession to shaking masks more egregious behavior
 - In retrospective review of 81 purported shaking confession cases, 12% of cases showed skull or scalp injury from impact. Suzanne P. Starling, et al., *Analysis of Perpetrator Admissions to Inflicted Traumatic Brain Injury in children*, 158 ARCH. PEDIATR. ADOLESC. MED. 454 (2004)

The Absence of Objective Corroborating Evidence

- No death or serious injury by shaking has ever been captured on video, despite ubiquity of “nanny cams”
- The only shaking caught on camera has produced no injury
- But short falls causing death have been captured on video. *See J. Plunkett, Fatal Pediatric Head Injuries Caused by Short-Distance Falls, 22 J. FORENSIC MED. PATHOL. 1 (2001)*





Responding to the Prosecution's Arguments

- *Defense experts don't have experience actually caring for children*
 - Dr. Perloff: “all of those [defense] experts lacked the experience and knowledge of actually caring for children in this state, sort of state, that provide tremendous insights. We in medicine, clinical experience has a lot to teach us, and that was lacking in their various postulations.”
- Response: That “experience” is not science—it perpetuates the circular reasoning underlying SBS theory

Responding to the Prosecution's Arguments

- *Biomechanical study now suggests shaking can cause this—C.Z. Cory & M.D. Jones, Can Shaking Alone Cause Fatal Brain Injury? 43 MED. SCI. LAW 317 (2003). And one of the defense studies used flawed math.*
- Response: There are many studies establishing that shaking cannot cause such injuries without serious neck or spine injury
- The lone study cited by prosecutors (Cory 2003) is meaningless
 - Used dummies that were not biofidelic
 - Used an exaggerated shaking motion
 - Sufficient force was created only when dummy's head hit chest and back—a form of impact—which would produce injuries to jaw, occiput, chest, and back

Responding to the Prosecution's Arguments

- *The science is not “new”—the same debate has been ongoing for years.*
- Response: “The problem with the State’s argument is that the evidence offered in Edmunds's current postconviction motion is entirely different in character from the evidence offered in her 1997 postconviction motion. ... Although the basic arguments are parallel, the form and nature of the evidence supporting the arguments are dramatically different.” *Edmunds*, 746 N.W.2d 590 at para. 11.
- “[T]he defense experts who testified for the 2006 postconviction motion explained that in the past ten years, a shift has occurred in the medical community around shaken baby syndrome, so that now the fringe views posited in 1997 are recognized as legitimate and part of a significant debate. They explained that there has been significant development in research and literature that challenges the medical opinions presented at Edmunds's trial. *Id.* at para. 12
- “Edmunds could not have been negligent in seeking this evidence, as the record demonstrates that the bulk of the medical research and literature supporting the defense position, and the emergence of the defense theory as a legitimate position in the medical community, only emerged in the ten years following her trial.” *Id.* at para. 15.