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## UN-CONVICTING THE INNOCENT: THE CASE FOR SHAKEN BABY SYNDROME REVIEW PANELS

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### INTRODUCTION

On October 15, 2010, Julie Baumer was finally able to breathe as a free woman.<sup>1</sup> Seven years earlier, on October 3, 2003, her nephew, Philipp Baumer, was admitted to Children's Hospital in Detroit where a CT scan showed subdural bleeding and a brain that had been deprived of oxygen, and an ophthalmologist detected retinal bleeding.<sup>2</sup> The hospital immediately suspected child abuse and consulted several social workers in the following days.<sup>3</sup> Doctor's notes on the subsequent tests documenting Philipp's brain and eye injuries often attributed these injuries to Shaken Baby Syndrome (SBS).<sup>4</sup> As Philipp's primary caretaker, Julie was the suspected abuser. On December 17, 2003, Dr. Cristie Becker wrote to Detective John Rollo of the Macomb County Sheriff's Department, diagnosing Philipp with "non-accidental trauma involving a shaking episode as well as a striking of the head against a solid, flat surface."<sup>5</sup>

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1. Jameson Cook, *Aunt Found Not Guilty of First Degree Child Abuse After Spending Four Years in Prison*, MACOMB DAILY, Oct. 15, 2010, <http://www.macombdaily.com/articles/2010/10/15/news/doc4cb86fc515b49365300899.txt>.

2. Emily Bazelon, *Shaken*, N.Y. TIMES MAG., Feb. 6, 2011, at 30, 44.

3. Social Work Consultation Forms for Philipp Baumer, Children's Hospital of Michigan (Oct. 5–10, 2003) (on file with author).

4. Neonatology Progress Notes by Dr. Yvette Johnson, Attending Physician, Detroit Medical Center, for Philipp Baumer (Oct. 4, 2003) ("Likely 'shaken baby syndrome.'") (on file with author); Results of CT Scan for Philipp Baumer, dictated by Dr. Wilbur L. Smith, Children's Hospital of Michigan (Oct. 12, 2003) ("These findings are consistent with the patients [sic] history of shaken baby syndrome.") (on file with author); EEG Report for Philip Baumer, interpreted by Dr. Aimee Luat and Dr. Harry Chugani, Children's Hospital of Michigan, Department of Electroneurodiagnostics (Oct. 17, 2003) ("This is a 2-month-old boy who was diagnosed to have Shaken Baby syndrome.") (on file with author).

5. Letter from Cristie J. Becker, M.D., Children's Hospital of Mich., to John Rollo, Detective Sgt., Macomb County Sheriff's Dep't (Dec. 17, 2003) ("This is a particularly devastating injury to a baby because the large and relatively heavy head is so poorly supported by the weak neck muscles such that the to-and-fro shaking injury is compounded by a rotational force generated intracranially . . .") (on file with author).

In February of 2004, Julie was charged with first-degree child abuse. In September of 2005, at the first of her two trials, a treating neurosurgeon at Children's Hospital<sup>6</sup> and a pediatric radiologist testified for the prosecution as expert witnesses.<sup>7</sup> In what he described as "not a difficult case,"<sup>8</sup> the treating neurosurgeon testified that the "massive brain injury" was not consistent with an accidental injury, but rather resulted from "a much greater force being imparted upon the child."<sup>9</sup> The pediatric radiologist described the brain injury as "best explained as the result of a shaking."<sup>10</sup> Both doctors testified that based on his injuries, Philipp suffered from "non-accidental trauma"<sup>11</sup> which most likely occurred within twenty-four hours of the CT and MRI scans.<sup>12</sup> This timeline would have put Philipp in the care of the hospitals—not Julie—when he was injured. The defense attorney, however, failed to note this discrepancy.

The defense's sole medical expert was found not qualified to read the CT scans, rendering her unable to directly contradict the prosecution's medical experts.<sup>13</sup> While the expert, a forensic pathologist,<sup>14</sup> pointed out some of Philipp's other medical conditions and argued that the child had been sick for a long time,<sup>15</sup> the defense did not present any medical experts testifying to a specific alternative theory of causation for the injuries.<sup>16</sup> The jury was left with two medical experts suggesting child abuse, and no alternative theory from the defense. Julie was convicted of first-degree child abuse on September 29, 2005.<sup>17</sup> In sentencing Julie, due to what he perceived as the "high level of brutality" of the crime, the judge

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6. Transcript of Record, Volume 2 at 18, 25, 26, *People v. Baumer*, No. 2004-002096-FH (Macomb Cir. Ct., Sept. 23, 2005).

7. Transcript of Record, Volume 5 at 58, *People v. Baumer*, No. 2004-002096-FH (Macomb Cir. Ct., Sept. 23, 2005).

8. Transcript of Record, Volume 2, *supra* note 6, at 54.

9. *Id.* at 47.

10. Transcript of Record, Volume 5, *supra* note 7, at 81.

11. Transcript of Record, Volume 2, *supra* note 6, at 32, 33; *see also id.* at 59 (clarifying the departure from the term "shaken baby" through Dr. Ham's testimony that "Well, actually, we tried to get away from that term. Again, from just what I've discussed we don't really know how the baby's injured. We don't know if it's really shaken, so that's why we're using the term 'nonaccidental trauma[.]' Because we're not quite sure how it happened.").

12. *See id.* at 45; Transcript of Record, Volume 5, *supra* note 7, at 93.

13. Transcript of Record, Volume 6 at 18, 22, *People v. Baumer*, No. 2004-002096-FH (Macomb Cir. Ct. Sept. 23, 2005).

14. *Id.* at 11.

15. *Id.* at 98.

16. Bazelon, *supra* note 2.

17. Transcript of Record, Volume 8 at 9, *People v. Baumer*, No. 2004-002096-FH (Macomb Cir. Ct. Sept. 23, 2005).

exceeded the sentencing guidelines and sentenced her to 10–15 years in prison.<sup>18</sup>

In 2007, after receiving a letter from a nun who had visited Julie in prison, the case came to the attention of a professor at Ave Maria Law School, who enlisted the help of a private defense attorney.<sup>19</sup> The lawyers sent Philipp's scans to several doctors, a neuroradiologist, a pediatric neuroradiologist, and a forensic pathologist. All of them diagnosed Philipp with venous sinus thrombosis (VST), a form of childhood stroke that is often associated with seizure-like activity, illness and dehydration.<sup>20</sup> Citing this evidence, the defense team filed a motion for post-conviction relief based on ineffective assistance of counsel and actual innocence. At the August 2009 evidentiary hearing, the defense presented testimony from these doctors, expressing their opinions that Philipp had suffered from VST and not child abuse or Shaken Baby Syndrome.<sup>21</sup> VST, the doctors testified, was consistent with the dehydration and sepsis diagnosed at the E.R. in Mount Clemens, as well as his history of sickliness since birth.<sup>22</sup> The judge granted the motion. Julie and her defense team, joined by the University of Michigan Innocence Clinic, began to prepare for a new trial.

At the second trial in September and October of 2010, the two doctors from the first trial testified again for the prosecution, reiterating their arguments that Philipp's injuries were caused by non-accidental trauma. However, they shifted their timelines for his injury, to a time when he was likely in Julie's care.<sup>23</sup> This time, however, the defense had an alternate explanation for Phillip's medical findings, which was presented through the testimony of the three original doctors, as well as a pediatric child neurologist, a

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18. *Id.* at 28.

19. Bazelon, *supra* note 2.

20. Affidavit of James A.J. (Rex) Ferris, M.D. at ¶ 9, *People v. Baumer*, No. 2004-002096-FH (Macomb Cir. Ct. Sept. 8, 2008); Affidavit of Michael Krasnokutsky at ¶ 6, *People v. Baumer*, No. 2004-002096-FH (Macomb Cir. Ct. Sept. 8, 2008); Declaration of Dr. Patrick Barnes at ¶ 5, *People v. Baumer*, No. 2004-002096-FH (Macomb Cir. Ct. Sept. 1, 2009). According to Dr. Barnes, VST "is commonly associated with infection and/or dehydration but may in some cases be of undetermined causation." *Id.*; see also Karen S. Carvalho et al., *Cerebral Venous Thrombosis in Children*, 16 J. CHILD NEUROLOGY 574 (2001).

21. Evidentiary Hearing, Volume 2 at 14–15, 72–73, *People v. Baumer*, No. 2004-002096-FH (Macomb Cir. Ct. Sept. 3, 2009); Declaration of Dr. Patrick Barnes, *supra* note 20, at ¶¶ 5–6.

22. Evidentiary Hearing, Volume 2, *supra* note 21, at 36, 74.

23. The author was present in court during Julie Baumer's second trial, and had the opportunity to observe the prosecution's timeline shift first-hand. As the author's personal observations serve as the foundation for several points in the sections to follow, these observations will be referred to in footnotes as "Author's Trial Observations."

clinical and forensic pathologist, and a neurosurgeon.<sup>24</sup> After a short deliberation, the jury found Julie not guilty of child abuse.

Unfortunately, Julie is not alone in her experience. The truly heartbreaking stories, however, are those that are not told—the innocent people currently in prison, convicted of seriously injuring a child that they loved, based on a medical diagnosis that has become scientifically questionable. Like Julie Baumer, many defendants enter court unprepared to counter the legion of medical experts that they will face, and most are not as lucky as Julie was to find an Innocence Clinic to take on their causes. This Note examines the interaction between a Shaken Baby Syndrome (SBS) diagnosis and our criminal justice system, and calls for a review process to be put in place. An SBS Review Panel would give those convicted of SBS-related crimes the opportunity to have competent experts review the medical records, and the chance for a fair trial.

When someone is accused of an SBS-related crime, the prosecution typically presents a triad of medical findings—retinal hemorrhages, subdural/subarachnoid hematomas, and cerebral edema—to “prove” that the injury to the baby could only have resulted from shaking. However, medical research is casting doubt on the significance of this triad, and there is currently disagreement within the medical community on what scientific evidence is necessary to establish that SBS caused a particular death or injury, and even whether SBS is a classifiable syndrome at all. This lack of scientific agreement on SBS has led to haphazard and divergent results throughout the country, even in cases with very similar facts. As the medical community continues to shift toward a uniform skepticism of SBS, our legal system will eventually follow suit, leading to more consistent results across courts. However, until that time comes, individuals continue to be convicted of SBS-related crimes<sup>25</sup> on the basis of evidence that is scientifically questionable and likely unsound.

This Note proposes that states should develop error-correction bodies to identify past errors that have resulted in wrongful convictions of people accused of shaking a child. These institutions, which I call SBS Review Panels, would be similar to the error-correction bodies and commissions that have recently been established throughout the world to deal with various sorts of wrongful convictions. An SBS-specific commission should be developed because of

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24. Author's Trial Observations.

25. For the purpose of this Note, SBS-related crimes are defined as crimes such as child abuse, battery or homicide, where the defendant is accused of shaking the victim in some form.

the high level of scientific expertise that is required to fully understand this diagnosis and the problems associated with using the triad of medical findings as evidence of the defendant's conduct.

Part I will define SBS and detail the medical and social perceptions of the diagnosis from the 1970's until the present. In describing in greater depth the recent changes in the medical consensus behind SBS, Part II illustrates why our legal system should not permit convictions based exclusively on disputed medical evidence. Part III analyzes the current state of the law, with several case studies to illustrate the problems with the use of this potentially faulty diagnosis. This Part further details the challenges that face defendants seeking relief from SBS convictions. To address these problems, Part IV proposes the creation of error-correcting bodies to discover errors that have resulted in wrongful convictions or miscarriages of justice for those accused of shaking a child. This Part evaluates examples of post-conviction review boards, and concludes by proposing a Shaken Baby Syndrome Review Panel, and a model statute for its enactment.

#### PART 1: THE RISE (AND FALL) OF SHAKEN BABY SYNDROME

Dr. Ileana Arias, Principal Deputy Director for the Center for Disease Control, describes SBS as “the leading cause of child abuse death in the United States.”<sup>26</sup> An estimated 1,200 to 1,500 babies are diagnosed with SBS each year.<sup>27</sup> From these cases, an average of 200 defendants are convicted of SBS-related crimes annually, with hundreds currently serving prison sentences.<sup>28</sup>

Pediatric radiologist Dr. John Caffey first coined the term “whiplash shaken infant syndrome” in 1974.<sup>29</sup> Using cases of “admitted”

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26. Dr. Ileana Arias, *Shaken Baby Syndrome is Preventable*, CDC INJURY CENTER: DIRECTOR'S VIEW BLOG, CENTERS FOR DISEASE CONTROL AND PREVENTION (May 7, 2009, 12:00 PM), <http://blogs.cdc.gov/ncipc/2009/05/07/shaken-baby-syndrome-is-preventable/>.

27. Deborah Tuerkheimer, *Science-Dependent Prosecution and the Problem of Epistemic Contingency: A Study of Shaken Baby Syndrome*, 62 ALA. L. REV. 513, 515 (2011) (estimating that 1,500 children are diagnosed with SBS each year); Bazelon, *supra* note 2, at 32 (estimating that between 1,200 and 1,400 children are diagnosed with abusive head injuries each year); *About SBS*, SHAKEN BABY ASSOCIATION, <http://www.shakenbaby.net/main.html> (last visited Aug. 20, 2011).

28. Deborah Tuerkheimer, *The Next Innocence Project: Shaken Baby Syndrome and the Criminal Courts*, 87 WASH. U. L. REV. 1, 10 (2009) (estimating in absence of a centralized database).

29. John Caffey, *The Whiplash Shaken Infant Syndrome: Manual Shaking by the Extremities With Whiplash-Induced Intracranial and Intraocular Bleedings, Linked with Residual Permanent Brain Damage and Mental Retardation*, 54 PEDIATRICS 396, 396 (1974).

shaking,<sup>30</sup> Caffey argued that an infant could suffer the fatal symptoms without a physical impact.<sup>31</sup> Caffey further developed the theory arguing that “[t]he essential elements in the *infantile whiplash shaking syndrome* present an extraordinary diagnostic contradiction. They include intracranial and intraocular hemorrhages, in the absence of signs of external trauma to the head or fractures of the calvaria . . . . Usually there is no history of trauma of any kind.”<sup>32</sup> The term “shaken baby syndrome” soon became common in medical literature<sup>33</sup> and a diagnosis of SBS became identified by a triad of symptoms: subdural hemorrhages, retinal hemorrhages, and brain swelling.<sup>34</sup> Not long after, however, the medical field began to question the diagnosis, due to the lack of objective evidence to support the theory.<sup>35</sup>

Outside the medical profession, however, SBS has taken a different path. While Caffey stressed in his 1974 article that SBS “warrants a nationwide educational campaign on the potential pathogenicity of habitual, manual, casual whiplash shaking of infants,”<sup>36</sup> SBS was not a publicly known medical diagnosis in the U.S. until the late 1990s, when British nanny Louise Woodward was charged with murdering an eight-month-old boy in Massachusetts by shaking him.<sup>37</sup> In *Commonwealth v. Woodward*, a Massachusetts jury convicted Woodward of second-degree murder,<sup>38</sup> but due to an infrequently used Massachusetts state rule of procedure that allows judges to reform a verdict, the judge reduced the verdict to involuntary manslaughter and vacated her life sentence.<sup>39</sup>

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30. It should be noted that “innocent people falsely confess, often because of the psychological pressure placed upon them during police interrogations.” See Brandon L. Garrett, *The Substance of False Confessions*, 62 STAN. L. REV. 1051, 1053 (2010).

31. Caffey, *supra* note 29, at 402.

32. *Id.*

33. See, e.g., Millard Bass et al., *Death-Scene Investigation in Sudden Infant Death*, 315 NEW ENG. J. MED. 100, 100, 102 (1986); Scott R. Lambert et al., *Optic Nerve Sheath and Retinal Hemorrhages Associated With the Shaken Baby Syndrome*, 104 ARCHIVES OPHTHALMOLOGY 1509 (1986); Stephen Ludwig and Matt Warman, *Shaken Baby Syndrome: A Review of 20 Cases*, 13 ANNALS EMERGENCY MED. 104 (1984).

34. Bazelon, *supra* note 2, at 32 (“In an estimated 50 percent to 75 percent of [shaken-baby prosecutions], the only medical evidence of shaken-baby syndrome is the triad of internal symptoms . . .”).

35. See *infra* Part II.A and B.

36. Caffey, *supra* note 29, at 403.

37. “[T]he British au pair’s trial has refocused attention on a medical condition that, according to some surveys, up to half of all Americans are unfamiliar with.” Joseph Mallia, *Signs of Injury Not Always Clear*, BOSTON HERALD, Oct. 26, 1997, at 024.

38. *Commonwealth v. Woodward*, 694 N.E.2d 1277, 1281 (Mass. 1998) (discussing procedural history).

39. *Id.* (discussing Judge Zobel’s 25(b)(2) verdict reduction); see also Benjamin B. Tyman, Note, *Populism and the Rule of Law: Rule 25(B)(2) of the Massachusetts Rules of Criminal*

The extensive media coverage of the Woodward case quickly familiarized the public with SBS,<sup>40</sup> and at least seven states enacted SBS-specific legislation.<sup>41</sup> In 2010, the United States Senate unanimously voted to make the third week of April “National Shaken Baby Syndrome Awareness Week.”<sup>42</sup> While this shows that belief in SBS is alive and well in the general population, “the scientific underpinnings of SBS have crumbled over the past decade as the medical establishment has deliberately discarded a diagnosis defined by shaking.”<sup>43</sup>

## PART II: CHANGES IN THE MEDICAL CONCEPTION OF SBS

### A. *The Myth of the Diagnostic Triad*

In many SBS cases, there is no documented history of shaking or abuse. Therefore, SBS is often diagnosed based on “a constellation of clinical findings.”<sup>44</sup> This constellation has been described as the triad of symptoms—retinal hemorrhaging (bleeding inside the surface of the back of the eye), subdural or subarachnoid hematoma (bleeding between the membranes that surround the brain), and cerebral edema (brain swelling).<sup>45</sup> In the context of SBS, these injuries are said to occur when a baby suffers shaking sufficient to tear the bridging veins connecting the brain to the sagittal sinus (one of the large veins that drains the brain) as well as axons

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*Procedure and the Historical Relationship Between Juries and Judges in the Commonwealth’s Trial Courts*, 34 SUFFOLK U. L. REV. 125, 142 (2000).

40. See, e.g., Lisa W. Foderaro, *A Simple Video Finds Success Against Shaken Baby Abuse*, N.Y. TIMES, May 29, 2001, at B1; Barbara Ruben, *Quilts Tell the Stories of Shaken Babies—National Traveling Exhibit Makes Stops in County to Increase Awareness*, WASH. POST, May 13, 1999, at M1.

41. See, e.g., MINN. STAT. ANN. § 245A.144 (West 2011); N.Y. SOC. SERV. LAW § 390-a(3)(b)(ix) (McKinney 2011) (outlining child caregiver requirements for recognizing shaken baby syndrome); OHIO REV. CODE ANN. §§ 3701.63, 3701.64, 5101.135 (West 2011); S.C. CODE ANN. § 44-37-50 (2010); Emergency Act of Nov. 16, 2006, ch. 356, 2006 Mass. Laws (defining shaken baby syndrome); TEX. HUM. RES. CODE ANN. § 42.0421(b), (c) (West 2011); UTAH ADMIN. CODE r.430-100-7 (2011).

42. S. 3003, 111th Cong. (2010); see also Deborah Tuerkheimer, Op-Ed., *Anatomy of a Misdiagnosis*, N.Y. TIMES, Sept. 21, 2010, at A31.

43. Tuerkheimer, *supra* note 28, at 11.

44. Ann-Christine Duhaime et al., *The Shaken Baby Syndrome: A Clinical, Pathological, and Biomechanical Study*, 66 J. NEUROSURGERY 409, 409 (1987).

45. David L. Chadwick et al., *Shaken Baby Syndrome—A Forensic Pediatric Response*, 101 PEDIATRICS 321, 321 (1998); see also Mark Hansen, *Why are Iowa’s Babies Dying?*, 84 A.B.A. J. 74, 78 (1998) (discussing Robert Kirschner’s view that certain symptoms, including brain swelling, subdural bleeding, and retinal hemorrhages are “virtually diagnostic” of SBS).

within the brain itself, causing immediate brain swelling and permanent brain damage.<sup>46</sup>

While the presence of this triad is often considered conclusive proof of SBS, and thus “shaking in fact,”<sup>47</sup> shifts in science have led some doctors to question the reliability of the triad as an indicator of SBS.<sup>48</sup> For example, neurosurgeon Dr. Ronald Uscinski noted that “subdurals in infants can occur after apparently normal birth, and true incidence (and prevalence) of birth related subdural bleeding has yet to be determined . . . . [A child with such bleeding could] present clinically weeks or even months later with a chronic subdural haematoma.”<sup>49</sup> There are also many causes of retinal hemorrhages, including vaginal birth.<sup>50</sup> In a letter published in the British Medical Journal, Drs. John Plunkett and Jennian Geddes urged doctors and experts to “reconsider the diagnostic criteria, if not the existence, of shaken baby syndrome.”<sup>51</sup> Due to the medical uncertainty surrounding the triad and its relation to SBS, “medicolegal questions are particularly troublesome”<sup>52</sup> and

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46. Heather Kirkwood, Address at the Oregon Criminal Defense Lawyers Association Seminar: Shaken Baby Syndrome: Where are We Now? (Mar. 4, 2011), <http://mpdtrainer.files.wordpress.com/2011/03/kirkwood-shaken-baby-materials.pdf>.

47. See Chadwick, *supra* note 45, at 321 (describing the triad as “virtually unique to this type of injury”). In addition, automatically diagnosing SBS can result in the doctors ignoring the true cause of injury to the child and therefore leading to more damage, as was probably true in Philipp Baumer’s case. See Dr. Krasnokutsky’s trial testimony noting his concern about hasty child abuse diagnoses:

Once they see abnormal CAT scan on an infant they automatically say child abuse and it propagates like wild fire through the medical records and doctors stop thinking about medicine. So, we stop . . . treatment for other causes such as venous thrombosis and we just label this as shaking or child abuse where in fact we doctors really have to look really hard at the evidence that’s presented in front of us so we don’t make those mistakes. So if the child comes in with sepsis, somebody better not say shaken baby. Somebody better put the child on antibiotics and pursue it.

Evidentiary Hearing, Volume 2, *supra* note 21, at 46–47.

48. See *infra* Part II.B.

49. Ronald Uscinski, *Shaken Baby Syndrome: Fundamental Questions*, 16 BRIT. J. NEUROSURGERY 217, 218 (2002). Other countries are also less quick than the U.S. to infer SBS from the presence of certain symptoms. In Japan, for example, “[R]etinal hemorrhage and subdural hematoma without external signs of injury . . . is usually attributed to accidental, trivial head injury, whereas subdural hemorrhage associated with external signs of trauma to the face or head were commonly found in cases of genuine child abuse.” Eva Lai Wah Fung et al., *Unexplained Subdural Hematoma in Young Children: Is It Always Child Abuse?* 44 PEDIATRICS INT’L 37, 41 (2002).

50. See Alex V. Levin & Yair Morad, *Chapter 6: Ocular Manifestations of Child Abuse, in CHILD ABUSE: MEDICAL DIAGNOSIS AND MANAGEMENT* 217 (Robert M. Reece & Cindy W. Christian eds., 3rd ed. 2009).

51. J. Plunkett & J.F. Geddes, *The Evidence Base for Shaken Baby Syndrome*, 328 BRIT. MED. J. 719, 720 (2004).

52. See Duhaime, *supra* note 44, at 409.



doctors should be careful not to jump to conclusions, especially when those conclusions might result in someone being charged with child abuse.

*B. Problems with the Diagnosis: The Shift in Science*

After twenty years of general agreement, there is currently no medical consensus surrounding SBS. As science has progressed, problems have become increasingly clear regarding the medical basis of SBS. Researchers obviously cannot conduct direct studies, since intentionally shaking infants to induce trauma would be unethical. As Dr. Patrick Barnes has pointed out, due to this lack of critical data, “the diagnostic criteria often seem to follow circular logic, such that the inclusion criteria ([e.g.], the triad equals SBS[]) becomes the conclusion ([i.e.], SBS[] equals the triad).”<sup>53</sup> Other studies have used models or primates to determine the forces necessary to produce the triad of injuries.<sup>54</sup> While these tests can be informative, testing on models is an imperfect replica of these forces on actual children.<sup>55</sup> In a review of the medical literature on SBS up to 1998, Dr. Mark Donohoe concluded that “there was inadequate scientific evidence to come to a firm conclusion on most aspects of causation, diagnosis, treatment, or any other matters pertaining to SBS.”<sup>56</sup>

This lack of adequate scientific evidence for SBS has led many doctors and scientists to reevaluate the diagnosis. The resulting medical debates include the following propositions.

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53. Patrick Barnes, *Imaging of Nonaccidental Injury and the Mimics: Issues and Controversies in the Era of Evidence-Based Medicine*, 49 *RADIOLOGICAL CLINICS N. AM.* 205, 207 (2011); see also Mark Donohoe, *Evidence-Based Medicine and Shaken Baby Syndrome: Part 1: Literature Review, 1966–1998*, 24 *AM. J. FORENSIC MED. & PATHOLOGY* 239, 239 (2003); Patrick E. Lantz, *Letters to the Editor*, 329 *BRIT. MED. J.* 741, 741 (2004) (highlighting that while child abuse research is difficult, “[t]his difficulty does not justify circular reasoning, selection bias, imprecise case definition, unsystematic review publications, or conclusions that overstep the data”).

54. Richard M. Hirshberg, *Reflections on the Syndrome of “Shaken Baby”*, 29 *MED. & L.* 103, 106 (2010).

55. See, e.g., Letter from Joseph Neiles, Cir. Judge, Cir. Ct. of S.D., to Counsel for State and Defendant, *State v. Dustin Two Bulls* (Apr. 27, 2011), available at <http://argusleader.com/assets/pdf/DF17383452.pdf> (“There have been attempts to create tests for the theory, first with the monkey . . . and then with dolls and other models. However, the results of these tests do not, in this court’s opinion, support the theory, and in fact disprove the theory; at least the most recent tests seem to do that.”).

56. Donohoe, *supra* note 53, at 241.

### 1. Shaking Alone Cannot Produce the Injuries

Because of their relatively large heads and weak necks, many doctors have hypothesized that infants are particularly susceptible to shaking injuries.<sup>57</sup> The scientists who first studied SBS had claimed that the back and forth movement of the infant's head, without impact, could cause the injuries associated with SBS.<sup>58</sup> SBS advocates have described the acceleration-deceleration force from shaking as being equivalent to a fall from a two-story building, or a motor vehicle accident.<sup>59</sup> However, opponents of SBS argue that shaking alone could not produce the force necessary to create the injuries that characterize SBS, but that a fall from a couch or a bed could.<sup>60</sup> In a study published in 1987, Dr. Ann-Christine Duhaime used anthropomorphic models to demonstrate the susceptibility of the infant brain to shaking injuries, but was unable to generate the required force unless the head was impacted against a solid surface. In conclusion, she argued that "severe head injuries commonly diagnosed as shaking injuries require impact to occur and that shaking alone in an otherwise normal baby is unlikely to cause the shaken baby syndrome."<sup>61</sup>

### 2. The Likelihood of Neck Injuries

Several recent studies have reported that the brain injuries associated with the triad cannot occur by shaking without the child also suffering injury to the neck, cervical spinal column, or cervical spinal cord. For example, in a 2005 study, using a biomechanics analysis, Dr. Faris Bandak concluded that "[h]ead acceleration and velocity levels commonly reported for SBS generate forces that are

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57. Duhaime, *supra* note 44, at 414, 415 n.4 & 14. ("The relatively large size of an infant's head, weakness of the neck musculature, softness of the skull, relatively large subarachnoid space, and high water content of the brain have been postulated to contribute to the susceptibility of shaking injuries in infants.")

58. *See id.*

59. CATHY COBLEY & TOM SANDERS, NON-ACCIDENTAL HEAD INJURY IN YOUNG CHILDREN: MEDICAL, LEGAL AND SOCIAL RESPONSES 40 (2007); *see also* Edward J. Imwinkelried, *Shaken Baby Syndrome: A Genuine Battle of the Scientific (and Non-Scientific) Experts*, 46 CRIM. L. BULL. 156 (2010). For examples of SBS cases using expert witness testimony, see *People v. Dunaway*, 88 P.3d 619, 631-32 (Colo. 2004); *People v. Martinez*, 74 P.3d 316, 318 (Colo. 2003).

60. *See, e.g.*, Duhaime, *supra* note 44, at 409 ("Shaking alone does not produce the shaken baby syndrome."); John Plunkett, *Fatal Pediatric Head Injuries Caused by Short-Distance Falls*, 22 AM. J. FORENSIC MED. 1, 10 (2001).

61. Duhaime, *supra* note 44, at 409.

far too great for the infant neck to withstand without injury.”<sup>62</sup> As a result of these findings, he concluded “re-evaluation of the present diagnostic criteria for the SBS merits serious attention for its implications on child protection and for the social and medicolegal significance of its application.”<sup>63</sup> If neck injuries are indeed concomitant with the brain injuries supposedly caused by shaking, as Bandak’s results indicate, then an uninjured neck should cue doctors to look for causes of injury beyond SBS.

### 3. Lucid Intervals Are Possible

As with any other criminal investigation, identifying the perpetrator is essential. In SBS cases, criminal investigators and prosecutors rely on medical experts to pinpoint the window of time in which the potential abuse was likely to have occurred. Many forensic pathologists have historically accepted that a child would not appear normal after being shaken and would “rapidly become symptomatic.”<sup>64</sup> Therefore, as was the case in Julie Baumer’s first trial, whoever is with the child in the hours preceding the manifestation of symptoms is typically deemed to be the abuser. However, a 1998 study showed that in approximately 25 percent of alleged abuse cases, young children may not become symptomatic for more than twenty-four hours after the injury.<sup>65</sup> In addition, research has shown that retinal hemorrhages—one of the key symptoms in an SBS diagnosis—could develop as late as two or three days after injury.<sup>66</sup> Clearly, these issues have legal significance, as understanding the clinical course of the onset of symptoms will affect identification of the perpetrator. The possibility of lucid intervals counsels against the automatic assumption that the person with the baby when it became ill was the perpetrator.

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62. Faris A. Bandak, *Shaken Baby Syndrome: A Biomechanics Analysis of Injury Mechanisms*, 151 *FORENSIC SCI. INT’L* 71, 78 (2005).

63. *Id.* at 79.

64. See Marcus B. Nashelsky & Jay D. Dix, *The Time Interval Between Lethal Infant Shaking and Onset of Symptoms: A Review of the Shaken Baby Syndrome Literature*, 16 *AM. J. FORENSIC MED. & PATHOLOGY* 154, 155 (1995).

65. See 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, 724 (1998) (finding that lucid intervals last less than twenty-four hours in 75% of cases, and longer than twenty-four hours in 25% of cases); see also Kristy B. Arbogast et al., *Initial Neurologic Presentation in Young Children Sustaining Inflicted and Unintentional Fatal Head Injuries*, 116 *PEDIATRICS* 180, 181 (2005) (finding that young children with fatal head trauma may present as lucid before death).

66. Levin & Morad, *supra* note 50, at 217 (noting, however, that immediate retinal hemorrhages cannot be ruled out).

## 4. Mimics

Doctors no longer agree that the triad of symptoms is clearly indicative of a diagnosis of SBS. As in Philipp Baumer's case, where doctors found that a stroke was the true cause of his injuries, there are many conditions that mimic SBS. As Dr. Ferris explained in his affidavit, "[b]y 2005, the literature was clear that shaking does not generate sufficient force to cause subdural or retinal hemorrhage in infants and that there is a wide range of alternative explanations, including infection, dehydration and venous sinus thrombosis, for symptoms previously attributed to shaking or nonaccidental injury."<sup>67</sup> Other mimics include "[e]levated blood histamine caused by vaccinations and vitamin C deficiency,"<sup>68</sup> bleeding disorders,<sup>69</sup> hypoxia-ischemia, ischemic injury, vascular anomalies, seizures, infectious conditions, and coagulopathies.<sup>70</sup> The triad of symptoms that had previously triggered an automatic diagnosis of SBS could, we now know, indicate a number of non-traumatic conditions.

These debates have led to a shift in language in the medical community from "Shaken Baby Syndrome" to "Non-Accidental Head Injury." In 2009, the American Academy of Pediatrics recommended that the diagnosis of SBS be completely replaced with "abusive head trauma."<sup>71</sup> But defendants like Julie Baumer are still being convicted on diagnoses like "non-accidental trauma involving a shaking episode"<sup>72</sup>—essentially a longer way of saying SBS.

*C. The Effect of an SBS Diagnosis in the Criminal Justice System*

While there has been a shift in the language used by the medical community to describe the injuries often associated with SBS,<sup>73</sup> and a shift in the medical profession's perception of the diagnosis,<sup>74</sup> we have yet to see a corresponding shift in the criminal justice system.

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67. Affidavit of Rex Ferris, *supra* note 20, at ¶ 51.

68. C.A.B. Clemetson, *Elevated Blood Histamine Caused by Vaccinations and Vitamin C Deficiency May Mimic the Shaken Baby Syndrome*, 62 MED. HYPOTHESES 533, 533 (2004).

69. See Richard S. Newman et al., *Factor XIII Deficiency Mistaken for Battered Child Syndrome: Case of "Correct" Test Ordering Negated by a Commonly Accepted Qualitative Test with Limited Negative Predictive Value*, 71 AM. J. HEMATOLOGY 328, 328 (2002).

70. Barnes, *supra* note 53, at 209.

71. Cindy W. Christian et al., *Abusive Head Trauma in Infants and Children*, 123 PEDIATRICS 1409, 1410 (2009).

72. Letter from Christie J. Becker, *supra* note 5.

73. *Supra* Part 2.B.4.

74. *Supra* Part 2.B.

Since there is no consensus in the medical community regarding the scientific basis of SBS and its successors, it would seem that a legal finding of proof beyond a reasonable doubt would be questionable when based upon medical evidence alone. Nonetheless, most SBS cases rely almost exclusively on the testimony of medical experts.<sup>75</sup> As Professor Deborah Tuerkheimer of the DePaul University College of Law states:

All elements of the charge are proven by the claims of science: testimony regarding the force necessary to cause the infant's injuries establishes the mechanism of death, as well as the perpetrator's criminal state of mind; testimony that the baby's symptoms would invariably present themselves immediately upon the infliction of injury demonstrates the killer's identity. In essence, SBS is a medical diagnosis of murder.<sup>76</sup>

Given the changes in the scientific community, and prosecutors' common reliance on medical testimony in SBS cases, it is likely that a sizeable portion of those who are currently imprisoned for SBS-related crimes are actually innocent, and an even greater number were wrongfully convicted.<sup>77</sup> While the medical consensus regarding SBS has shifted, the common beliefs of the general population have not. Indeed, the American Academy of Pediatrics recommended continuing to use the term "shaken baby syndrome" for prevention purposes.<sup>78</sup> This has a profound effect on a criminal justice system that relies heavily on juries. Along with a general

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75. Tuerkheimer, *supra* note 27, at 515–16.

76. *Id.*

77. The distinction between wrongful conviction and factual innocence is explained well by Lord Bingham, a British judge and jurist:

The expression 'wrongful conviction' is not a legal term of art and it has no settled meaning. Plainly the expression includes the conviction of those who are innocent of the crime of which they have been convicted. But in ordinary parlance the expression would . . . be extended to those who, whether guilty or not, should clearly not have been convicted at their trials . . . . In cases of this kind, it may, or more often may not, be possible to say that a defendant is innocent, but it is possible to say that he has been wrongly convicted. The common factor in such cases is that something has gone seriously wrong in the investigation of the offence or the conduct of the trial, resulting in the conviction of someone who should not have been convicted.

R (on the application of Mullen) v. Secretary of State for the Home Department [2005] 1 A.C. (H.L.) 1, 4 (cited in Stephanie Roberts & Lynne Weathered, *Assisting the Factually Innocent: The Contradictions and Compatibility of Innocence Projects and the Criminal Cases Review Commission*, 29 O.J.L.S. 43, 50 (2009)).

78. Christian, *supra* note 71, at 1410 ("Just as the public commonly uses the term 'heart attack' and not 'myocardial infarction,' the term 'shaken baby syndrome' has its place in the popular vernacular.").

awareness of SBS as a result of the Woodward case in the 1990s, “[j]uries are understandably horrified and inflamed by post-mortem and operative photos of infants and children and ‘talking points’ that exaggerate the forces required to produce a subdural hematoma and retinal hemorrhage.”<sup>79</sup>

For defendants who are actually innocent of the charged crime, several problems become apparent. First, since no crime may have been committed at all (if the injury was the result of either an unwitnessed accidental impact or a natural medical cause),<sup>80</sup> there is generally no one else to implicate for the child’s injuries as a defense. As Professor Samuel Gross explains, “[p]roving that someone else committed the crime is by far the most common method of achieving an exoneration, but it is unavailable if there was no crime at all.”<sup>81</sup>

A second problem for innocent defendants in SBS cases is that the use of medical evidence can cause an improper shift in the burden of proof. The defendant, in order to counter the medically determined cause of death, must affirmatively establish an alternate cause of death. While the medicine behind SBS is in question, the currently available science often does not allow the defense to establish an alternative cause either.<sup>82</sup> While the defense team in Julie Baumer’s case successfully established that the actual cause of the injuries was a childhood stroke, in other cases defense experts may not agree regarding the actual cause of injury, or may only be able to offer other likely alternatives. Then, as Tuerkheimer explains,

The state’s winning argument to juries is this: the defendant has not established what caused the child’s death while the prosecution experts are in full agreement regarding their diagnosis. They told you what the three presenting symptoms mean—how they are caused, how much force is required, and how soon after the trauma the baby would have lost consciousness. The defense experts gave you a list of various possibilities, but admitted that they could not be sure about what happened here. And, indeed, they did not even agree amongst themselves regarding this child’s death [or injury].<sup>83</sup>

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79. Hirshberg, *supra* note 54, at 104.

80. See *supra* Part II.B.4.

81. Samuel R. Gross, *Convicting the Innocent*, 4 ANN. REV. L. & SOC. SCI. 173, 183 (2008).

82. Tuerkheimer, *supra* note 28, at 38–39 (emphasis omitted).

83. *Id.* (emphasis omitted).

This lack of an alternative mechanism for injury, along with the psychological force of the term “shaken baby syndrome” itself, effectively allow the prosecution to shift the burden of proof onto the defense, in contravention of the ordinary rules of trial, where a defendant may simply rely on the argument that the prosecution has not proved the defendant’s guilt beyond a reasonable doubt.

Partially as a result of these challenges, defendants are being convicted in cases where there is little or no evidence suggesting their guilt other than the diagnostic triad.<sup>84</sup> While the exact conviction rate of SBS cases generally is unknown, a forensic pathologist who has consulted on many cases for SBS defendants has estimated that between half and two-thirds are convicted.<sup>85</sup> While juries are acquitting more often now than they have in the past, “the most important predictor of an acquittal is the defense presentation of nationally prominent experts who challenge the science,” and even in those cases, there are still more convictions than acquittals.<sup>86</sup>

### PART III: THE ROLE OF MEDICAL EXPERTS ON THE OUTCOME OF SBS CASES

SBS cases often hinge on expert medical testimony.<sup>87</sup> Despite defense motions to exclude expert witnesses, most courts allow such testimony about SBS, and when they do, the testimony is “almost universally seen as proof . . . that the baby was deliberately harmed by a . . . malevolent caretaker.”<sup>88</sup> In addition, judges tend to allow the prosecution’s expert witnesses to go further than merely describing the injury, and often let them present opinion evidence that the injury was intentional because a reasonable person would recognize that force of this magnitude would cause injury to an infant.<sup>89</sup> Therefore, as Edward Imwinkelried points out, “the testimony is admissible to show the perpetrator’s *mens rea* as well as the

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84. See *infra* Part III.

85. Tuerkheimer, *supra* note 28, at 37 n.225 (referencing a 2008 telephone interview with Dr. John Plunkett).

86. *Id.* at 37–38 (referencing Tuerkheimer’s telephone conversations with Toni Blake, Jury Consultant).

87. “With rare exception, the case turns on the testimony of medical experts.” *Id.* at 5.

88. Imwinkelried, *supra* note 59, at 166 (quoting Genie Lyons, Note, *Shaken Baby Syndrome: A Questionable Scientific Syndrome and a Dangerous Legal Concept*, 2003 UTAH L. REV. 1009, 1009 (2003)); see also American Academy of Pediatrics, *Shaken Baby Syndrome: Rotational Cranial Injuries—Technical Report*, 108 PEDIATRICS 206, 206 (2001); Chadwick, *supra* note 45, at 321 (A letter written by a number of doctors arguing that “well-established medical evidence . . . overwhelmingly supported [that] a violent shaking/impact episode” was the cause of the child in Louise Woodward’s case.).

89. Imwinkelried, *supra* note 59, at 167.

occurrence of the *actus reus*,”<sup>90</sup> something that expert medical witnesses are unqualified to evaluate.

In some rare instances, medical evidence regarding SBS has been excluded from trial. One trial court in Kentucky, after hearing evidence from both sides at an in limine hearing, concluded that the diagnosis “presupposes the cause[:]” “To allow a physician to diagnose SBS with only the two classical markers, and no other evidence of manifest injuries, is to allow a physician to diagnose a legal conclusion.”<sup>91</sup> However, the prosecution appealed this order, and the state appeals court found that the trial court had abused its discretion by not allowing the expert testimony.<sup>92</sup> In April of 2011, following a *Daubert* motion,<sup>93</sup> a South Dakota judge ruled that proposed expert testimony on Shaken Baby Syndrome was inadmissible as it did not meet the standard set forth in *Daubert*.<sup>94</sup> The state subsequently dropped the charges.<sup>95</sup>

Expert medical witnesses for the prosecution tend to be practicing pediatricians. However, as noted above, knowledge of neuropathology, neuroradiology, neurology, biomechanics, and neurosurgery is often necessary to fully understand the complex medical situation in infant head and brain injuries.<sup>96</sup> The court in *Commonwealth v. Davis* acknowledged the problems that result from relying on the treating pediatricians, saying that they “routinely diagnose SBS . . . based on inconclusive research conducted in the scientific research community.”<sup>97</sup> Physicians who testify in support of an SBS diagnosis are leading juries to a legal conclusion that is not fully supported by science.

The standard generally used by doctors to reach diagnoses also affects the sufficiency of the evidence at trial. In criminal cases, the prosecution has the burden of proving all elements of the crime

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90. *Id.*

91. *Commonwealth v. Davis*, No. 04-CR-205, at 23 (Ky. Cir. Ct. Apr. 17, 2006), available at <http://www.aapsonline.org/sbs/daubert.pdf> (Order and Opinion, Re: Daubert Hearing).

92. *Commonwealth v. Martin*, 290 S.W.3d 59, 61 (Ky. Ct. App. 2008).

93. “Faced with a proffer of expert testimony . . . the trial judge must determine at the outset, pursuant to Rule 104(a), whether the expert is proposing to testify to scientific knowledge that (2) will assist the trier of fact to understand or undermine a fact in issue.” *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993).

94. Letter from Joseph Neiles, Cir. Judge, Cir. Ct. of S.D., to Counsel for State and Defendant, *State v. Dustin Two Bulls* (Apr. 27, 2011), available at <http://www.argusleader.com/assets/pdf/DF17383452.pdf> (on file with author).

95. *Charges Dropped in Child Death*, ARGUSLEADER.COM (May 3, 2011), <http://pqasb.pqarchiver.com/argusleader/access/2335674251.html?FMT=ABS&date=May+03%2C+2011> (on file with author).

96. Hirshberg, *supra* note 54, at 105.

97. *Davis*, No. 04-CR-205, at 22.



“beyond a reasonable doubt.”<sup>98</sup> In contrast, expert medical witnesses base their opinions on a “reasonable medical certainty.”<sup>99</sup> While the terms sound similar, it is generally understood that “reasonable medical certainty” is a lower standard than “beyond a reasonable doubt.”<sup>100</sup> In fact, “reasonable medical certainty” is not a medical standard, but one used solely in litigation.<sup>101</sup> Physicians often have different understandings of what the standard actually means.<sup>102</sup> Despite such inconsistency, doctors often use the phrase “reasonable medical certainty” when testifying in SBS cases and if this terminology means something less than proof beyond a reasonable doubt, it should not, alone, be enough for conviction.<sup>103</sup>

The tension between medicine and the law is evident in SBS trials and, when defendants are able to pursue them, in subsequent appeals and petitions for post-conviction relief. Medical experts are essential for both sides, and without medical experts on the defense side, the defendant’s case is all but lost. It has become clear, however, that the law has not caught up with the shifting science of SBS, creating devastating effects for those who are unable to present their own medical experts to rebut the prosecution’s expert witnesses. In law, backward-looking institutional norms of the judiciary generate a great deal of inertia, making the courts slow to react to new developments. This lethargy is evident when our judicial system grapples with science, a field where older theories are constantly being modified and discarded.<sup>104</sup>

*Commonwealth v. Woodward* gave a public face to SBS.<sup>105</sup> While the jury convicted Louise Woodward, a British nanny, of murder

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98. *In re Winship*, 397 U.S. 358, 361–62 (1970).

99. *Addington v. Texas*, 441 U.S. 418, 430 (1979) (deeming this the appropriate standard).

100. See, e.g., Molly Gena, *Shaken Baby Syndrome: Medical Uncertainty Casts Doubt on Convictions*, 2007 WIS. L. REV. 701, 716 (2007).

101. *Id.*

102. *Id.* In addition, attorneys and judges also have trouble defining and understanding the phrase:

Although judges expect, and sometimes insist, that expert opinions be expressed with ‘reasonable medical certainty,’ and although attorneys ritualistically intone the phrase, no one knows what it means! No consensus exists among judges, attorneys, or academic commentators as to whether ‘reasonable medical certainty’ means ‘more probable than not’ or ‘beyond a reasonable doubt’ or something in between.

Jeff L. Lewin, *The Genesis and Evolution of Legal Uncertainty About “Reasonable Medical Certainty”*, 57 MD. L. REV. 380, 380 (1998).

103. See Gena, *supra* note 100, at 717–18.

104. See Lyons, *supra* note 88, at 1132–33.

105. *Commonwealth v. Woodward*, 694 N.E.2d 1277, 1281 (Mass. 1998).

in the second degree,<sup>106</sup> the judge seemed uncomfortable with the tension between the medical experts.<sup>107</sup> Using Rule 25(b)(2) of the Massachusetts Rules of Criminal Procedure, which gives trial judges the ability to affect equitable relief for defendants after conviction,<sup>108</sup> the judge concluded that Woodward did not act with malice, reduced her verdict to involuntary manslaughter, and vacated her life sentence.<sup>109</sup> The judge also seemed to credit the defense expert's theory of a "re-bleed" from a previous head injury as a potential cause of the symptoms,<sup>110</sup> and hypothesized that due to the child's "pre-existing skull fracture and blood clot," Woodward's actions were only "fatal because of [the child's] condition at the time."<sup>111</sup> Massachusetts' Supreme Judicial Court upheld the reduction and deferred to the judge's discretion in weighing the evidence.<sup>112</sup>

While the Woodward case brought SBS into the public eye, the problems surrounding an SBS diagnosis in the legal system became evident through cases like *State v. Edmunds*, in Wisconsin. On October 16, 1995, babysitter Audrey Edmunds was charged with shaking seven-month-old Natalie Beard to death.<sup>113</sup> A jury convicted Edmunds of reckless homicide in the first degree based solely on expert testimony,<sup>114</sup> and the court sentenced her to eighteen years in prison.<sup>115</sup> Like many SBS cases, the prosecution's case relied on the triad of symptoms.<sup>116</sup> The prosecution's experts testified that "only shaking, possibly accompanied by impact" could have caused the injuries, and the defense did not challenge the scientific basis for SBS.<sup>117</sup> The state appellate court affirmed Edmunds' conviction, pointing to the lack of evidence that "the severe injuries Natalie sustained could have been the result of an accident, rather than

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106. *Id.*

107. *Id.* at 1287. "The judge suggested an alternative basis for reaching a manslaughter conviction, one that credited Woodward's conviction, in part, on the causation of Matthew's injury."

108. Rules Crim. Proc. Rule 25(b)(2), 43C M.G.L.A. ("If a verdict of guilty is returned, the judge may on motion set aside the verdict and order a new trial, or order the entry of a finding of not guilty, or order the entry of a finding of guilty of any offense included in the offense charged in the indictment or complaint.").

109. *Id.* at 1281.

110. See Tymann, *supra* note 39, at 142.

111. Woodward, 694 N.E.2d at 1287.

112. *Id.*

113. See *State v. Edmunds*, 598 N.W.2d 290, 293 (Wis. Ct. App. 1999).

114. *Id.* at 293-94.

115. *Edmunds v. Deppisch*, 313 F.3d 997, 998 (7th Cir. 2002) (affirming her eighteen-year sentence on federal habeas review).

116. Brief and Appendix of Defendant-Appellant at 5, *State v. Edmunds*, 746 N.W.2d 590 (Wis. Ct. App. 2008) (No. 2007AP000933).

117. *Id.* at 6.

intentional, forceful conduct, directed specifically at Natalie.”<sup>118</sup> With state remedies exhausted, Edmunds petitioned for federal habeas corpus review, which was denied.<sup>119</sup>

In 2008, however, Edmunds was granted a new trial on the basis of an evolution in scientific thinking. The defense argued that since her first trial, “significant research has undermined the scientific foundations for SBS, creating substantial challenges to matters that were nearly universally accepted in the medical community at the time of Edmund’s trial.”<sup>120</sup> The court, agreeing with the defense, concluded that “a shift in mainstream medical opinion” sufficiently undermined the scientific basis of the SBS diagnosis, leading to the possibility that Edmunds might not have harmed Natalie.<sup>121</sup> The appeals court aptly summarized the state of the medical evidence by concluding that, in the first trial, the state had been able to argue to the jury that disbelieving the prosecution would mean disbelieving all of the medical experts. Over a decade later, however:

[A] jury would be faced with competing credible medical opinions in determining whether there is a reasonable doubt as to Edmunds’s guilt. Thus, we conclude that the record establishes that there is a reasonable probability that a jury, looking at both the new medical testimony and the old medical testimony, would have a reasonable doubt as to Edmunds’s guilt.<sup>122</sup>

On July 11, 2008, the state announced that it would dismiss all charges against Edmunds.<sup>123</sup>

Because she was represented at the evidentiary hearing on her motion for a new trial by the Wisconsin Innocence Project at the University of Wisconsin Law School, Edmunds was fortunate to have several physicians testify for her defense, including the chief of pediatric neuroradiology at Stanford’s Children’s Hospital, the former Chief Medical Examiner for Kentucky, a forensic pathologist, a pediatrician, an ophthalmologist, and the autopsy pathologist who had testified at Edmunds’ first trial as a witness

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118. *Edmunds*, 598 N.W.2d at 294.

119. *Edmunds*, 313 F.3d at 997.

120. Brief and Appendix of Defendant-Appellant, *supra* note 116, at 11.

121. *State v. Edmunds*, 746 N.W.2d 590, 598–99 (Wis. Ct. App. 2008).

122. *Id.* at 599.

123. Ed Treleven, *No Second Trial in Baby-Shaking Case*, WIS. STATE J., July 11, 2008, at A31.

for the prosecution.<sup>124</sup> Similarly, with the resources of the Michigan Innocence Clinic behind her, Julie Baumer had the benefit of testimony from a child neurologist at Children's Hospital National Medical Center, an anatomic, clinical, and forensic pathologist, a pediatric neurosurgeon at Georgetown University, the chief of pediatric neuroradiology at Stanford's Children's Hospital, and the Chief of Neuroradiology at Madigan Medical Center. In Julie's case, all of the medical experts testified *pro bono*, saving the defense from having to pay consulting and trial fees, which can be as much as \$10,000 a day.<sup>125</sup> For those defendants who are not lucky enough to come across the radar of an Innocence Clinic,<sup>126</sup> recruiting and paying for defense experts can be a barrier to successful appeal.

Even more troubling is the fact that in the future, those charged with SBS-related crimes will find it even more difficult than Edmunds to secure a second trial through a claim of new evidence. Unless further research completely undermines SBS, defendants convicted in the current limbo period will have a hard time claiming that evidence relating to diagnosis's invalidity is new. To be newly discovered evidence, it cannot have been known at the time of the original trial.<sup>127</sup> As the discussion above makes clear, the scientific cynicism about the SBS diagnosis is currently known, even if it is not universally believed. Thus, with claims of newly discovered medical understandings effectively closed, defendants would have to argue that the failure to present the science at trial constituted ineffective assistance of counsel—a claim that is difficult to win.<sup>128</sup> Therefore, if a defendant does not have the resources to retain an expert witness to counter the prosecution's experts at her original trial—or if the defense's expert is not persuasive enough or is out-

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124. Tuerkheimer, *supra* note 28, at 48 n.297.

125. Author's Trial Observations.

126. In fact, this might be even more difficult since many innocence clinics, including the Innocence Project, only accept cases where DNA evidence can be used to prove innocence. See, e.g., *Michigan Innocence Clinic*, THE UNIVERSITY OF MICHIGAN LAW SCHOOL, <http://www.law.umich.edu/clinical/innocenceclinic/Pages/default.aspx> (last visited Aug. 22, 2011) (noting that unlike many other innocence clinics, the Michigan Innocence Clinic focuses on cases where there is no biological evidence to be tested); *Non-DNA Exonerations*, INNOCENCE PROJECT, <http://www.innocenceproject.org/know/non-dna-exonerations.php> (last visited Aug. 22, 2011).

127. See, e.g., FED. R. CIV. P. 60(b)(2); BLACK'S LAW DICTIONARY 638 (9th ed. 2009) (defining "newly discovered evidence").

128. See, e.g., Eve Brensike Primus, *Structural Reform in Criminal Defense: Relocating Ineffective Assistance of Counsel Claims*, 92 CORNELL L. REV. 679, 683–84 (2007) ("Many scholars and judges recognize that the number of criminal convictions that courts reverse due to ineffective assistance of trial counsel is strikingly low when compared to the frequency of ineffective assistance in practice.").

numbered by the prosecution experts—she will likely be found guilty, with little hope on appeal.

#### PART IV: PROPOSAL FOR SBS REVIEW PANELS

From the earliest days of our nation, policy makers have relied on commissions to address serious problems. As early as 1794, for example, President George Washington created a commission to investigate the causes of the Whiskey Rebellion.<sup>129</sup> Despite their popularity, “there has been no such federal level commission established to investigate the known problems associated with wrongful and unlawful convictions.”<sup>130</sup> State-based “Criminal Justice Reform Commissions” have been established in eleven states to “examine post-conviction DNA exonerations to establish their causes and recommend changes to prevent future wrongful convictions.”<sup>131</sup> While these commissions exist to recommend general systemic changes, there have also been calls for state governments to institute commissions to specifically review and correct cases of potential innocence.<sup>132</sup> In their book *ACTUAL INNOCENCE*, Barry Scheck and Peter Neufeld call for “state and federal institution[s] modeled after the Criminal Case Review Commission in the United Kingdom to investigate wrongful convictions.”<sup>133</sup>

While general innocence commissions serve a clear purpose, this Note proposes the creation of a body that has the specific mandate and skills to investigate cases in which the defendant was

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129. Jonathan Simon, *Parrhesiastic Accountability: Investigatory Commissions and Executive Power in an Age of Terror*, 114 *YALE L.J.* 1419, 1428 (2005).

130. Robert Schehr, *A View From the United States*, in *THE CRIMINAL CASE REVIEW COMMISSION: HOPE FOR THE INNOCENT?* 205, 210 (Michael Naughton ed., 2010) (emphasis omitted).

131. *Criminal Justice Reform Commissions*, INNOCENCE PROJECT, [http://www.innocenceproject.org/Content/Criminal\\_Justice\\_Reform\\_Commissions.php](http://www.innocenceproject.org/Content/Criminal_Justice_Reform_Commissions.php) (last visited Aug. 22, 2011) (noting the implementation of criminal justice reform commissions in California, Connecticut, Florida, Illinois, Louisiana, Oklahoma, New York, North Carolina, Pennsylvania, Texas, and Wisconsin).

132. See, e.g., Barry C. Scheck & Peter J. Neufeld, *Toward the Formation of “Innocence Commissions” in America*, 86 *JUDICATURE* 98, 99 (2002) (proposing the creation of “‘innocence commissions’ to investigate and monitor errors in the criminal justice system”); see also David Horan, *The Innocence Commission: An Independent Review Board for Wrongful Convictions*, 20 *N. ILL. U. L. REV.* 91, 95–97 (2000) (describing such commission as giving “defendants with viable claims of actual innocence a state-funded mechanism to consider and investigate their claims after convictions and unsuccessful appeals, instead of relegating such defendants to attempts to make a disfavored and often restricted or even procedurally prohibited successive petition for post-conviction relief”).

133. BARRY SCHECK, PETER NEUFELD, & JIM DWYER, *ACTUAL INNOCENCE: FIVE DAYS TO EXECUTION, AND OTHER DISPATCHES FROM THE WRONGLY CONVICTED* 260 (2003).

convicted of SBS-related crimes. In her article detailing how the criminal justice system has evolved in response to scientific change, Tuerkheimer lists several potential avenues of post-conviction relief for “the hundreds of convictions whose validity has now been undermined” because of the evolving scientific understanding of SBS.<sup>134</sup> Without further elaboration, Tuerkheimer suggests Innocence Commissions with quasi-judicial authority as a model for reform.<sup>135</sup> This Part takes up Tuerkheimer’s suggestion, and details how such a body ought to function.

### A. Review of Model Commissions

While a SBS Review Panel like this Note proposes currently does not exist, there are several commissions throughout the world that have been created to deal with problems of wrongful convictions more generally. Several of those commissions are presented below as models for an SBS Review Panel.

#### 1. The Criminal Cases Review Commission

Established by the Criminal Appeal Act of 1995, the United Kingdom’s Criminal Cases Review Commission (CCRC) is an independent public body that receives “applications from alleged victims of miscarriages of justice in England, Wales and Northern Ireland who have previously failed in their appeals against criminal conviction but continue to question the validity of those convictions[.]”<sup>136</sup> The CCRC’s organization as a statutory, independent, post-appellate body has been copied in other countries.<sup>137</sup>

The Queen appoints the eleven-members to the CCRC based on recommendations from the Prime Minister.<sup>138</sup> At least two-thirds of the members must have expertise in the criminal justice system

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134. Tuerkheimer, *supra* note 27, at 568.

135. *Id.*

136. Michael Naughton, *Introduction, in THE CRIMINAL CASE REVIEW COMMISSION: HOPE FOR THE INNOCENT?*, *supra* note 130, at 1.

137. *Id.* at 3. For example, the Scottish Criminal Cases Review Commission was created in 1999. The Criminal Procedure (Scotland) Act, 1995, c. 46, § 194A; *see also About the SCCRC, SCOTTISH CRIMINAL CASES REVIEW COMMISSION*, <http://www.sccrc.org.uk/aboutthecommission.aspx> (last visited Aug. 24, 2011). The Norwegian Criminal Cases Review Commission came into force on January 1, 2004. Criminal Procedure Act, 2004, c. 27 (Norway); *see also Introduction, THE NORWEGIAN CRIMINAL CASES REVIEW COMMISSION*, <http://www.gjenopptakelse.no/index.php?id=30> (last visited Aug. 24, 2011).

138. Criminal Appeal Act, 1995, c. 35 § 8(3)-(4).

and at least one-third must be lawyers.<sup>139</sup> The CCRC requires that an applicant has exhausted all appeals before bringing a claim.<sup>140</sup>

As applications come in, the CCRC reviews cases using their powers under Section 17 of the Criminal Appeal Act to obtain documents and material held by public bodies, to hire outside experts, and to appoint an Investigating Officer under Section 19 of that Act.<sup>141</sup> At that stage in the proceedings, a group of three Commissioners will meet to decide whether or not to make a referral. A single Commissioner can prevent a case from being referred.<sup>142</sup> If, based on “an argument, or evidence, not raised in the proceedings . . . [or] exceptional circumstances[,]”<sup>143</sup> the CCRC decides that a case has a “real possibility” of being overturned, it may refer the case to the Court of Appeals, which will then hear the case.<sup>144</sup>

The CCRC receives approximately 1,000 applications each year and refers an average of 4% of those applications to the proper appeals courts.<sup>145</sup> As of 2010, 382 appeals against conviction were heard in the appeal courts, and 271 of those convictions were overturned.<sup>146</sup> While most of cases referred are homicide cases (approximately 30 percent) and sexual offense cases (approximately 17%),<sup>147</sup> a number of cases concern “frailties in other forms of forensic evidence, including those surrounding sudden infant death, shaken baby syndrome, firearm residue, forensic pathology

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139. *Id.* § 8(5)-(6).

140. *Id.* § 13(1)(c) (“A reference . . . shall not be made . . . unless [inter alia] an appeal against the conviction, verdict, finding or sentence has been determined or leave to appeal against it has been refused.”).

141. CRIMINAL CASES REVIEW COMMISSION, ANNUAL REPORT AND ACCOUNTS 2009/10 80 (2010), available at <http://www.official-documents.gov.uk/document/hc1011/hc02/0254/0254.pdf>.

142. CRIMINAL CASES REVIEW COMMISSION, *supra* note 141, at 80.

143. c.35 § 13(1)(b)(i).

144. *Id.* § 13(1)(a). The Criminal Appeal Act does not define “real possibility.” However, the Court of Appeals describes the standard as “more than an outside chance or a bare possibility, but which may be less than a probability or a likelihood or a racing certainty” that the verdict would be found unsafe. *R v. Criminal Cases Rev. Comm., ex p. Pearson*, (1999) 3 All E.R. 498 (Q.B.).

145. Naughton, *Introduction*, in THE CRIMINAL CASE REVIEW COMMISSION: HOPE FOR THE INNOCENT?, *supra* note 130, at 1. For example, during the 2009–10 year, the CCRC received 932 applications and referred 31 cases, or 3.5% of the completed cases. Twenty-three convictions were quashed in the appeals court. CRIMINAL CASES REVIEW COMMISSION, *supra* note 141, at 7.

146. Naughton, *Introduction*, in THE CRIMINAL CASE REVIEW COMMISSION: HOPE FOR THE INNOCENT?, *supra* note 130, at 1.

147. Kent Roach, *The Role of Innocence Commissions: Error Discovery, Systemic Reform or Both?*, 85 CHI.-KENT L. REV. 89, 96 (2010).

and medicine, facial mapping, auditory recognition, and blood splatter.”<sup>148</sup>

A central problem for the CCRC is the lack of legal representation among applicants. Although the percentage of those represented during their application to the CCRC is increasing,<sup>149</sup> applicants without legal representation face serious challenges to effective CCRC review. In giving evidence to the Home Affairs Committee in 2004, David Kyle, a former CCRC Commissioner, acknowledged that legal representation is “likely to result in a speedier review and decision by the Commission.”<sup>150</sup> Beyond the matter of speed, applicants in prison without legal representation will typically have less knowledge about how to present their cases effectively. Solicitor Gareth Pierce explained to the Home Affairs Committee in 1998: “The person wrongly imprisoned is not going to have automatic access to the CCRC’s energies . . . . There perhaps should not be, but there inevitably is, a requirement for someone else, an organisation or a journalist, to be prompting the CCRC’s interest in the first place.”<sup>151</sup>

## 2. The North Carolina Innocence Inquiry Commission

Growing out of recommendations from the North Carolina Actual Innocence Commission,<sup>152</sup> legislation to form the North Carolina Innocence Inquiry Commission (NCIIC) was enacted in August 2006 “to investigate and determine credible claims of factual innocence[.]”<sup>153</sup> By statute, the NCIIC must include a superior

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148. *Id.* at 96–97 (internal citations omitted).

149. Initially, one out of ten applicants did not have legal representation; according to the 2004–2005 Annual Report, 62% of applicants are represented. *See* Roberts & Weathered, *supra* note 77, at 60.

150. SELECT COMMITTEE ON HOME AFFAIRS, MINUTES OF EVIDENCE, EXAMINATION OF WITNESSES OF THE CRIMINAL CASES REVIEW COMMISSION, 2003–4, H.C. 289, question 51 (U.K.), available at <http://www.publications.parliament.uk/pa/cm200304/cmselect/cmhaff/289/4012704.htm> (last visited Aug. 22, 2011).

151. Roberts & Weathered, *supra* note 77, at 62 (citing SELECT COMMITTEE ON HOME AFFAIRS, MINUTES OF EVIDENCE, EXAMINATION OF WITNESSES OF THE CRIMINAL CASES REVIEW COMMISSION, 1998–99, H.C. 106 (U.K.), available at <http://www.parliament.the-stationery-office.co.uk/pa/cm199899/cmselect/cmhaff/106/8121502.htm#a11> (last visited Aug. 22, 2011)).

152. The North Carolina Actual Innocence Commission (NCAIC) was created in 2002 after several highly publicized wrongful convictions. The primary objective of the NCAIC is “to make recommendations which reduce or eliminate the possibility of the wrongful conviction of an innocent person.” *Mission Statement, Objectives, and Procedures*, NORTH CAROLINA ACTUAL INNOCENCE COMMISSION, [http://www.innocenceproject.org/docs/NC\\_Innocence\\_Commission\\_Mission.html](http://www.innocenceproject.org/docs/NC_Innocence_Commission_Mission.html) (last visited Aug. 22, 2011).

153. N.C. GEN. STAT. § 15A-1461 (2009).



court judge, a prosecuting attorney, a victim advocate, a defense attorney, a member of the public who is not an attorney or employed in a judicial department, a sheriff, and two others selected by the Chief Justice of the North Carolina Supreme Court.<sup>154</sup> The NCIIC requires that, to be considered, an applicant filing a “claim of factual innocence” must assert “complete innocence of any criminal responsibility for the felony for which the [defendant] was convicted and for any other reduced level of criminal responsibility relating to the crime[.]”<sup>155</sup> In addition, the applicant must provide “credible, verifiable evidence of innocence that has not previously been presented at trial or considered at a hearing granted through postconviction relief.”<sup>156</sup> Unlike the CCRC, the NCIIC does not require exhaustion of all appeals. In this respect, the NCIIC may be more beneficial for judicial economy, as an applicant with a credible claim of innocence will likely find faster relief in the NCIIC, freeing up time in the court system.<sup>157</sup>

Once a case is selected by the NCIIC, the applicant must first sign an agreement waiving procedural rights and privileges relating to the innocence claim and agreeing to cooperate fully with the Commission’s investigation before the NCIIC will begin investigation of the claim.<sup>158</sup> The NCIIC is entitled to full disclosures from the trial-level defense and prosecution teams, and can compel the attendance of witnesses and the production of evidence.<sup>159</sup> In a 2009 report to the General Assembly of North Carolina, the NCIIC described the investigation as “a detailed and lengthy process that involves interviewing witnesses, obtaining affidavits, seeking court orders for evidence, testing physical evidence, and compiling of documentation. The entire case is comprehensively investigated with every lead followed and every fact rechecked.”<sup>160</sup>

The case is then presented to the full NCIIC body, which can, by a majority vote, refer a case for review on the basis that there is “sufficient evidence of factual innocence to merit judicial review.”<sup>161</sup> The Chief Justice will then appoint a three-judge panel. Trial judges on the panel must not have had “substantial previous

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154. *Id.* § 15A-1463.

155. *Id.* § 15A-1460(1).

156. *Id.*

157. *See, e.g.,* Jerome M. Maiatico, *All Eyes On Us: A Comparative Critique of the North Carolina Innocence Inquiry Commission*, 56 DUKE L.J. 1345, 1372 (2007).

158. N.C. GEN. STAT. § 15A-1467(b) (2010).

159. *See id.* § 15A-1467(d)-(f).

160. REPORT TO THE 2009–2010 LONG SESSION OF THE GENERAL ASSEMBLY OF NORTH CAROLINA, THE NORTH CAROLINA INNOCENCE INQUIRY COMMISSION 3 (2009), available at <http://innocencecommission-nc.gov/Report2009.htm>.

161. N.C. GEN. STAT. § 15A-1468(c) (2010).

involvement in the case.”<sup>162</sup> An evidentiary hearing is then held, where the District Attorney represents the state, and an attorney represents the defendant.<sup>163</sup> If there is a unanimous decision by the panel that there is a clear and convincing case of innocence, then the panel can dismiss all charges.<sup>164</sup> The decision of the panel is final.<sup>165</sup>

### 3. Illinois Commission on Capital Punishment

From 1977 to 2000, Illinois had exonerated more death row inmates than they had actually executed.<sup>166</sup> Acknowledging the problem of convicting the innocent, Governor George Ryan imposed a moratorium on executions in Illinois and subsequently created by executive order the Commission on Capital Punishment (the Ryan Commission) to study capital investigations and prosecutions.<sup>167</sup> The fourteen-member committee was chaired by a man who had previously been a prosecutor and federal judge, and co-chaired by a former U.S. senator and a former United States Attorney.<sup>168</sup> The commission reviewed the cases of the thirteen death row exonerations, studied the court decisions from cases of inmates on death row, held hearings, consulted with experts, and conducted studies of capital sentencing.<sup>169</sup>

The Ryan Commission released a report in April 2002 with eighty-five recommendations for reform.<sup>170</sup> Following the release of the report, Governor Ryan decided to “no longer [] tinker with the machinery of death” and commuted the sentences of all death row

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162. *Id.* § 15A-1469(a).

163. *See id.* § 15A-1469(c)-(e).

164. *Id.* § 15A-1469(h). For an overview of a case’s entire progression process, see *Case Progression Flowchart*, N.C. INNOCENCE INQUIRY COMM’N, <http://www.innocencecommission-nc.gov/chart.html> (last visited Aug. 24, 2011).

165. N.C. GEN. STAT. § 15A-1470(a) (2010).

166. Horan, *supra* note 132, at 93–94. During this time period in Illinois, thirteen death row inmates were exonerated and released in Illinois while twelve death row inmates were executed. *Id.*

167. Gov. George Ryan, Exec. Order No. 4, Creating the Commission on Capital Punishment (2000), available at [http://www.idoc.state.il.us/ccp/ccp/executive\\_order.html](http://www.idoc.state.il.us/ccp/ccp/executive_order.html); see also Jon B. Gould, *After Further Review: A New Wave of Innocence Commissions*, 88 JUDICATURE 126, 126 (2004).

168. *Commission Members*, COMM’N ON CAPITAL PUNISHMENT, [http://www.idoc.state.il.us/ccp/ccp/member\\_info.html](http://www.idoc.state.il.us/ccp/ccp/member_info.html) (last visited Aug. 24, 2011).

169. *See, e.g.*, Scheck & Neufeld, *supra* note 132, at 102.

170. *See* GEORGE H. RYAN, GOVERNOR, REPORT OF THE GOVERNOR’S COMMISSION ON CAPITAL PUNISHMENT *passim* (2002), available at [http://www.idoc.state.il.us/ccp/ccp/reports/commission\\_report/summary\\_recommendations.pdf](http://www.idoc.state.il.us/ccp/ccp/reports/commission_report/summary_recommendations.pdf).

inmates.<sup>171</sup> In 2003, the Illinois General Assembly passed a reform bill that included more than twenty of the recommendations from the Ryan Commission's report.<sup>172</sup> In March 2011, after continued concerns, Governor Pat Quinn signed a law ending the death penalty in Illinois.<sup>173</sup>

### *B. Recommendations for SBS Review Panels*

There are currently two models for innocence commissions: error-correction and systemic reform. Error-correction commissions like the CCRC and the NCIIC, discussed above, are designed to discover errors that have resulted in miscarriages of justice or wrongful convictions in individual cases.<sup>174</sup> As seen in the cases of the commissions discussed above, the structure of these types of bodies can vary widely.<sup>175</sup> Systemic reform commissions like the Ryan Commission, on the other hand, are designed to study broader system-wide issues, and make reform recommendations to prevent miscarriages of justice or wrongful convictions in the future.<sup>176</sup>

The shift in medical consensus regarding SBS diagnoses should presumably itself drive a change in the current system, even if only gradually. An SBS commission, therefore, should be focused on error-correction rather than achieving systemic reform, since the reform is likely to come on its own. An effective SBS Review Panel should implement the following suggestions.

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171. George H. Ryan, Governor of Illinois, Clemency Address at Northwestern University School of Law (Jan. 11, 2003), available at <http://www.law.northwestern.edu/wrongfulconvictions/issues/deathpenalty/clemency/RyanSpeech.html>.

172. *Death Penalty Reforms*, NORTHWESTERN LAW CENTER ON WRONGFUL CONVICTIONS, <http://www.law.northwestern.edu/wrongfulconvictions/issues/deathpenalty/deathPenaltyReformBill.html> (last visited Aug. 24, 2011).

173. 725 ILL. COMP. STAT. 5/119-1 (2011), available at <http://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=096-1543>; see also *The End of Death Row*, CHI. TRIB., Mar. 9, 2011, at 22.

174. *Supra* Part 4.A.1 and 2.

175. See Roach, *supra* note 147, at 91–92.

176. *Id.* at 104. The best example of a systemic reform commission in the U.S. is the National Transportation Safety Board which was created by statute in 1974 to “investigate . . . and establish the facts, circumstances, and . . . probable cause of” aircraft, highway, railroad, or major marine accidents. 49 U.S.C. § 1131(a)-(b) (2006). For other examples of state-wide systemic reform commissions created to address wrongful convictions, see *Criminal Justice Reform Commissions: Case Studies*, THE INNOCENCE PROJECT, [http://www.innocenceproject.org/Content/Criminal\\_Justice\\_Reform\\_Commissions\\_Case\\_Studies.php#nc](http://www.innocenceproject.org/Content/Criminal_Justice_Reform_Commissions_Case_Studies.php#nc) (last visited Aug. 24, 2011).

## 1. Formation

As was the case with the Ryan Commission, the creation of an SBS Review Panel (Panel) should begin with the governor of each state. As Governor Ryan demonstrated in Illinois, governors have an ability to neutrally highlight problems in the criminal justice system. As with the NCIIC and the CCRC, however, the actual formation of the Panel should be statutory, as this will give the body the legal authority to discover and correct errors. A model statute for the creation of such Panels is included below.<sup>177</sup>

The Panel should operate within the state's judicial system, to lend legitimacy to the review process. The NCIIC, for example, is an independent commission located within the North Carolina Judicial Department, and the Administrative Office of the Court provides it with administrative support.<sup>178</sup>

## 2. Makeup

To ensure a variety of perspectives from the groups most involved in the criminal justice system, Panel members should include judges, defense attorneys, prosecutors, and law enforcement officials. Most importantly, the Panels should also include scientists and doctors. In the *Baumer* and *Edmunds* cases, multiple medical experts were needed to rebut the SBS diagnosis. Therefore, the Panels should include doctors and scientists in relevant areas, including biomechanical engineers, neurologists, pathologists, neurosurgeons, ophthalmologists, neuroradiologists, hematologists, and pediatricians. The non-medical members of the Panel should also receive training in the medical background of SBS and the basics of evidence-based research.

Since the views of the medical community are divided with respect to the propriety of the SBS diagnosis, it will be important to ensure that medical experts on the Panel do not over-represent either side of the SBS debate. The statute should require the Governor of the state to make a good faith effort to appoint members with varied and open viewpoints, using criteria such as publications, presentations at conferences, personal statements, and letters of recommendations. The Governor should be required by statute to select a group of doctors who are the most learned in their fields and who represent a variety of backgrounds. In addi-

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177. See *infra* Part IV.C.

178. N.C. GEN. STAT. § 15A-1462(a)-(b) (2010).

tion, the medical and scientific members of the Panel should receive continued education on developments in SBS and child-abuse research.

Each Panel should also employ a Director who would be in charge of the daily operations of the Panel. The Director would assist in developing rules and standards for the Panel, coordinate investigations for all reviews, and prepare the reports of the Panel's recommendations. Depending on the workload of each Panel and the financial resources of the state, the Director may recommend that the Panel appoint other staff members.

### 3. Application Process

Because of the questionable nature of the diagnosis, the defendant in every case where there was a conviction or a plea in an SBS-related charge should have the opportunity for review. A defendant's guilty plea should not prohibit her from applying for review, as guilty pleas may have been induced by a variety of factors, including fear of the serious consequences of being convicted of homicide or first-degree child abuse. The cases of those who are still in state custody should have priority.

The review process should have two stages, which are to be coordinated by the Director. The first stage will consist of a review of the documents available from the original trial, such as transcripts, expert testimony, and medical records. An investigation in this first stage should look for pure triad cases where the testimony of medical experts attributed the death to shaking. Cases where there are other indicia of abuse, such as witnesses and other substantial injuries, may be rejected at this point. Other minor injuries should not lead a case to be rejected, however, as these might be old injuries, such as skull fractures from vaginal birth, or might have been caused by a fall or other accident.

Before the review proceeds to the second stage, the convicted person must give consent. The first stage of review will identify cases where the medical opinions and expert testimony offered at trial are now in question. The convicted person may then determine whether to go forward with the review into the second stage. This will protect those individuals who would prefer not to revisit what was probably a difficult time in their lives. Like the NCIIC, every defendant must sign a statement asserting complete innocence and agreeing to comply with the investigation.

Once a case passes the first stage and the convicted has given consent, the review should continue to a second stage. At this

point, the Panel will complete a more detailed analysis and prepare the case for presentation to the full Panel. The Panel should be equipped with full investigative and subpoena powers. To complete their review, the Panel should make further inquiries into the case by appointing investigators, subpoenaing documents, having additional outside medical experts review the documents, and taking testimony from individuals involved in the case.

*a. Panel Proceedings*

Once a case has completed the full review process, with the consent and agreement to cooperate of the convicted, all relevant evidence should be presented to the full Panel. Following that presentation, the full Panel should decide by vote whether to recommend the case for a new trial. The Panel should make this decision based on a full review of all available evidence, with a specific focus on medical evidence that was not presented at the original trial. Each member can determine her own standard for recommending cases to be retried. In cases where the defendant was convicted, a majority vote should be sufficient to recommend the case for a new trial. In cases where the defendant entered and was convicted on a guilty plea, the Panel should be unanimous in their decision to recommend the case for a new trial.

As medicine continues to advance, a primary purpose of the Panel should be to preserve all evidence indefinitely for future use. This includes everything presented to the Panel, such as radiology scans, autopsy reports, photographs, other medical evidence, and testimony. In addition, all Panel discussions and recommendations should be transcribed and saved.

*b. Judicial Review*

The Panels should have the power to refer a case back to the judiciary for retrial when they find compelling evidence that there has been a wrongful conviction. The power to ultimately overturn a conviction, however, should remain with the state judiciaries. In many of the reviewed cases, a jury will have found the defendant guilty of an SBS-related crime, and some people might be skeptical of overturning a jury's decision. A full presentation of evidence to a judicial panel in the trial court of the original jurisdiction will be a public proceeding, will lend legitimacy, and will hopefully also illustrate the necessity for review in such cases.

In this sense, the judicial-review aspect of the SBS Review Panel should be modeled upon the CCRC and the NCIIC. The NCIIC's post-commission three-judge panel<sup>179</sup> would be an ideal model to follow. Using this model, the Panel would request a three-judge panel to be convened in the trial court of original jurisdiction. The state would have the opportunity to respond to the Panel's recommendation, and this response could include a full dismissal of charges. If the case proceeds to a new trial, an attorney Panel member would represent the defendant. The scientific and medical experts on the Panel will testify on behalf of the defendant.

The defendant would essentially receive a new trial in front of the three-judge panel, but this time with adequate medical experts and a knowledgeable legal team on her side. The burden of proof would remain with the state to prove beyond a reasonable doubt that the defendant committed the charged crime. Following presentation of the evidence, the three-judge panel would rule by unanimous vote whether the state has met their burden. If the three-judge panel votes unanimously that the state has not met its burden the original conviction should be vacated.

### *C. Model Statute*

Using the NCIIC statute as a guide, the following model statute incorporates the general recommendations above to create a specific Model SBS Review Panel Statute.

#### § 1. Purpose of Statute

This Statute establishes the Shaken Baby Syndrome Review Panel, which creates a panel to identify convictions based on SBS-related evidence that are now viewed as unsound due to a shift in medical consensus surrounding SBS diagnoses.

#### § 2. Definitions

- A. "Shaken-Baby-Syndrome-Related Crimes" are defined as crimes, including but not limited to child abuse, battery, and homicide, wherein the defendant is accused of shaking the child victim in some form.
- B. "Claim of factual innocence" means a claim on behalf of a living person convicted of a Shaken-Baby-Syndrome-Related Crime in the state, asserting that

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179. *Id.* § 15A-1469.

person's complete innocence from criminal responsibility in the crime for which that person was convicted and for any other reduced level of criminal responsibility relating to the crime.

§ 3. Membership; chair; meetings; quorum; terms; salary

- A. The Panel shall consist of the following members.
  1. One shall be a judge, or former judge;
  2. One shall be a prosecuting attorney with experience in child abuse cases;
  3. One shall be a defense attorney with experience in child abuse cases;
  4. One shall be a member of the law enforcement;
  5. One shall be a biomechanical engineer; and
  6. Five shall be doctors selected from the following fields: neurology, clinical pathology, forensic pathology, neurosurgery, ophthalmology, hematology, radiology, neuroradiology, and pediatrics.
- B. The Governor of the state shall make an initial appointment of members to the Panel. For appointments of panel members from subsection A.6, the Governor shall make a good faith effort to appoint members to the Panel with different perspectives regarding a Shaken Baby Syndrome diagnosis, using criteria such as publications, presentations at conferences, personal statements, and letters of recommendation.
- C. The judge who is appointed to the Panel under subsection A.1 of this section shall serve as Chair of the Panel. The Panel shall meet a minimum of once every six months and may meet more often at the call of the Chair. A majority of Panel members shall constitute a quorum. All Panel votes shall be by majority vote, unless designated otherwise.
- D. Panel members shall serve three-year terms, with the possibility of one additional three-year term.
- E. Panel members shall receive no salary for serving. All Panel members shall receive necessary subsistence and travel expenses in accordance with state



regulations. All Panel members shall receive continuing medical education regarding Shaken Baby Syndrome and child abuse.

§ 4. Director and Staff

- A. The Panel shall employ a Director, who shall be an attorney licensed to practice law in the state. The Director shall assist the Panel in developing rules and standards for cases accepted by the Panel for review, coordinate investigation of cases accepted for review, maintain records for all case investigations, and prepare reports outlining Panel investigations and recommendations to the trial court.
- B. Subject to approval of the Chair of the Panel, the Director shall employ other staff and shall contract for services as necessary to assist the Panel in performance of its duties, as funds permit.

§ 5. Duties

- A. The Panel shall have the following duties and powers:
  - 1. To establish the criteria and screening processes by which to determine the cases that shall be accepted for review;
  - 2. To conduct inquiries into claims of factual innocence in SBS-related crimes, with priority given to those cases where the convicted person is currently incarcerated for the SBS-related offense;
  - 3. To coordinate the investigation of cases accepted for review;
  - 4. To maintain records for all case investigations, which maintenance shall include the preservation of all records, including all medical documents, for future use;
  - 5. To prepare written reports outlining Panel investigations and recommendations to the trial court at the completion of each review; and
  - 6. If the Panel recommends a case be re-tried, to serve as counsel and expert witnesses for the convicted.

### § 6. Claims of Factual Innocence

- A. The Panel shall conduct a review of all cases in its jurisdiction where a conviction or guilty plea was entered in an SBS-related crime, looking for cases of factual innocence. The review shall consist of two stages:
  - 1. First, using already available documents, the Panel will specifically look for pure-triad cases where medical testimony implicated shaking as the mechanism for injury.
    - a. At this stage, cases that present other indicia of abuse, including but not limited to witnesses or serious injuries, may be rejected.
  - 2. In the second stage, upon the consent of the convicted, the Panel shall use its full investigative and subpoena powers to conduct a thorough analysis of the innocence claim of the convicted.
- B. No formal review into a case may be made by the Panel unless the Director first obtains consent from the convicted and the convicted signs an agreement asserting innocence and agreeing to provide full disclosure regarding all review requirements of the Panel.
- C. The Panel shall have full investigative and subpoena powers to obtain information necessary for its review.

### § 7. Panel Proceedings.

- A. At the completion of both steps of the formal review, all relevant evidence shall be presented to the full Panel.
- B. After reviewing all of the evidence, the full Panel shall vote to determine the nature and extent of further action, as provided by this section. All voting members of the Panel shall participate in that vote.
- C. Except in cases where the convicted person was convicted by a plea of guilty, if six or more of the ten members of the Panel conclude there is sufficient evidence of factual innocence to merit judicial review, the case shall be remanded for retrial in the

district of original jurisdiction, with service on the district attorney. In cases where the convicted person was convicted by a plea of guilty, if all ten members of the Panel conclude by vote that there is sufficient evidence of factual innocence to merit judicial review, the case shall be referred to the trial court in the district of original jurisdiction, with service on the district attorney.

- D. If fewer than six of the ten voting members of the Panel, or in cases where the convicted person was convicted by a plea of guilty less than all of the ten voting members, conclude by vote that there is sufficient evidence of factual innocence to merit judicial review, the Panel shall be considered to have concluded that there is insufficient evidence of factual innocence to merit judicial review. The Panel shall document that opinion, and file that opinion along with all supporting findings of facts and evidence.

§ 8. Three-judge panel.

- A. If the Panel concludes by vote that there is sufficient evidence of factual innocence to merit judicial review, the Chair of the Panel shall request a three-judge panel to be convened in a special session of the trial court of original jurisdiction in order to hear evidence related to the Panel's recommendation.
- B. The senior trial court judge shall enter an Order setting the case for trial at the special session of the court, and shall require the state to file a response to the Panel's opinion within 90 days of the date of the Order. Such response may include joining the defense in a motion to dismiss the charges with prejudice on the basis of actual innocence.
- C. The District Attorney of original jurisdiction shall appear on behalf of the state at trial before the three-judge panel.
- D. An attorney from the Panel shall represent the convicted person and shall be compensated by the state.
- E. Medical experts from the Panel shall testify on behalf of the convicted person and shall be compensated by the state.

- F. The three-judge panel shall conduct a new trial. All evidence relevant to the case, including evidence previously considered by a jury or judge in a prior proceeding, may be presented during the trial. The burden of proof remains with the state to prove beyond a reasonable doubt that the convicted actually committed the charged crime.
- G. The three-judge panel shall rule as to whether the state has proven beyond a reasonable doubt that the convicted person is in fact guilty of the charges. If the panel votes unanimously that the state has failed to meet their burden, the panel shall vacate the charges. If the vote is not unanimous, the panel shall deny relief.

These suggestions for an SBS Review Panel are only a starting point for future debate. However, the beginning of this conversation illustrates why such a panel is necessary. Discussions regarding the creation of SBS Review Panels will inevitably receive criticisms on a number of fronts. First, as with any new government initiative, cost will be an issue. However, freeing those who were wrongly convicted despite being innocent of any crime should be a priority in our society. Beyond moral reasoning, imprisonment costs are a heavy burden on taxpayers.<sup>180</sup> In addition, twenty-seven states have wrongful conviction compensation statutes<sup>181</sup> that require the state to compensate individuals who were incarcerated for crimes of which they were subsequently exonerated. The compensation is often based on time spent wrongly incarcerated. Therefore the SBS Review Panels could save the state money by achieving faster exonerations than the slower appellate process.

Second, the pro-SBS community will likely be vocal opponents of any type of review panel. After the New York Times published an

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180. In 2004, a study done by the Department of Justice found that it costs the Federal Bureau of Prisons on average \$22,632 per year to house an inmate. JAMES J. STEPHAN, BUREAU OF JUSTICE STATISTICS SPECIAL REPORT, STATE PRISON EXPENDITURES 1 (2001). In addition, opportunity costs associated with incarceration has been estimated to be \$23,286 per year. See David A. Anderson, *The Aggregate Burden of Crime*, 42 J.L. & ECON. 611, 623 (1999).

181. See, e.g., N.Y. CT. CL. ACT § 8-b (McKinney 2011) (providing wrongfully convicted individuals “damages in such sum of money as the court determines will fairly and reasonably compensate him”); N.C. GEN. STAT. § 148-84(a) (2009) (providing any person with a pardon for innocence \$50,000 per year of wrongful incarceration up to \$750,000); WIS. STAT. § 775.05(4) (2007) (maximum of \$25,000 for wrongfully convicted persons); see also *Reforms by State*, THE INNOCENCE PROJECT, <http://www.innocenceproject.org/news/LawView1.php> (last visited Aug. 24, 2011) (showing interactive map with state-by-state comparisons of compensation laws).

op-ed by Professor Tuerkheimer questioning the scientific basis for SBS diagnoses, a number of doctors expressed their outrage at her description of the medical evidence, including accusations that she had been “duped by a strident group of defense witnesses” and that her article was “a new low in journalistic integrity” and “a criminal defense lawyers [sic] dream, but a reality nightmare.”<sup>182</sup> Dr. Daniel Lindberg of Brigham and Women’s Hospital in Boston, for example, accused Professor Tuerkheimer’s sources as being experts “who derive substantial income from lucrative court testimony”<sup>183</sup>—an accusation that seems questionable given the fact that all of the doctors in Julie Baumer’s second trial testified *pro bono*.

#### CONCLUSION

A juror in Julie Baumer’s second trial described the difficult process of wading through the complex medical testimony during deliberation: “We had two sets of experts with two different opinions. Who do you believe?”<sup>184</sup> Inevitably, with no medical consensus regarding SBS, cases involving SBS-related charges will come down to a battle of the expert witnesses. If, however, as was the case in Julie Baumer’s first trial in 2005, only the prosecution offers a definitive diagnosis, the defendant has little hope unless her case happens to come to the attention of an organization like a law school innocence project. Stories like Julie Baumer’s and Audrey Edmunds’ are the exception to the norm. Most SBS convictions have not been revisited, and until the law catches up with science, SBS cases will continue to be prosecuted on the basis of questionable medicine.<sup>185</sup> The obvious problem, then, is that only those who can afford expert witness fees or are lucky enough to have an innocence clinic take up their case are able to secure the assistance of credentialed and reliable defense experts. To repair this injustice, states should establish Shaken Baby Syndrome Review Panels to review the cases of SBS-related charges in their jurisdictions. These Panels will have the authority to refer cases back to the judiciary, and importantly, will provide representation for the defendants in new trials. With the resources of competent lawyers

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182. Comments to Carey Goldberg, *The Real Consensus on Shaken Baby Syndrome?*, COMMONHEALTH (Sept. 27, 2010, 5:12 PM), <http://commonhealth.wbur.org/2010/09/shaken-baby/>.

183. *Id.*

184. Cook, *supra* note 1, at 4.

185. See, e.g., Tuerkheimer, *supra* note 42, at A31.

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and medical experts, and with a shift in science on their side, those convicted of SBS-related crimes will finally have a balanced and fair trial. The innocent will be un-convicted, and, like Julie Baumer, can begin to pick up the pieces of their lives.