

DE-JUNKING MSBP ADJUDICATION

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This Note addresses the adjudication of juvenile dependency cases alleging parental Munchausen Syndrome by Proxy (“MSBP”). While MSBP is considered a rare phenomenon, Child Protective Services workers and physicians accuse parents of having MSBP disproportionately relative to its rarity. Consequently, MSBP cases are subject to high levels of false positives. Whether subject to dependency adjudication or other forms of child-welfare interventions, accused parents are deprived of their children. Underlying these false positives are serious defects in the types of evidence used to support MSBP adjudications. An understanding of junk science sheds light on some of the issues affecting MSBP adjudication. The expression “junk science” is used to describe untested or unproven theories, based on cherry-picked or unreliable data, often presented in a court of law. This Note presents common evidentiary issues illustrative of junk science through an analysis of approximately 50 cases alleging MSBP. Using this frame of reference, the Note then proposes the use of a decisional matrix to better evaluate the types of evidence in MSBP cases and prevent the pitfalls of junk science.

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INTRODUCTION

Patricia Stallings was described as “a very loving mother who lived to take care of her baby.”¹ But her reputation and her life changed dramatically after the death of her infant son, Ryan. Following his birth in April 1989, Ryan suffered from continuous medical issues, including frequent vomiting and difficulty holding down formula.² In July 1989, Ryan spent two weeks in the hospital after Patricia found him listless in his crib.³ Blood tests from this visit showed high amounts of ethylene glycol, the main ingredient in antifreeze.⁴ The hospital, suspecting that Patricia poisoned Ryan, reported her to the police, and Ryan was placed in a foster home. Subsequently, Patricia could only see Ryan once a week for a supervised visit.⁵ During one such visit Patricia was briefly left alone with Ryan and a bottle of formula prepared by his foster mother.⁶ Four days later, Ryan was hospitalized in critical condition and died shortly after, on September 7, 1989. Patricia was arrested for murder the next day.⁷

While awaiting trial, Patricia gave birth to a second son, David, who was immediately placed in foster care.⁸ Soon after, and despite a lack of contact with Patricia, David began to show the same symptoms Ryan experienced before his death.⁹ After a medical evaluation, David was diagnosed with Methylmalonic

1. Michael T. Flannery, *Munchausen Syndrome by Proxy: Broadening the Scope of Child Abuse*, 28 U. RICH. L. REV. 1175, 1176 (1994) (citing Carolyn Bower, *Death Penalty Will Be Sought: Young Mother is Accused of Poisoning Her 5-Month-Old Son*, ST. LOUIS POST-DISPATCH, Sept. 9, 1989, at 1A).

2. Paula Chin, *The Murder that Never Was*, PEOPLE (Dec. 16, 1991, 12:00 PM), <http://www.people.com/people/archive/article/0,,20111526,00.html>.

3. *Id.*; see also Flannery, *supra* note 1, at 1175 (citing Lou Jakovac, *Mother is Accused of Twice Poisoning Infant Son*, ST. LOUIS POST-DISPATCH, Sept. 7, 1989 at 14A).

4. Flannery, *supra* note 1, at 1175.

5. Chin, *supra* note 2.

6. *Id.*

7. Chin, *supra* note 2.

8. *Id.*

9. Flannery, *supra* note 1, at 1231.

Acidemia (“MMA”), a rare genetic condition that could have caused Ryan’s death.¹⁰

Although Patricia believed that, like David, Ryan had suffered from MMA, she was unable to secure an expert medical witness to introduce evidence during her trial.¹¹ Consequently, Patricia was convicted and sentenced to life in prison on the prosecution’s theory that intentional poisoning was the only explanation for the ethylene glycol in Ryan’s blood.¹²

After Patricia’s conviction, William Sly, chairman of the Department of Biochemistry at the University of St. Louis, re-tested samples of Ryan’s blood and found them positive for MMA.¹³ Sly contacted the prosecutor with the new test results. Not convinced, the prosecutor requested a review by an MMA expert. After six weeks, Dr. Pinero Rinaldo, professor of genetics at Yale, determined that Ryan did have MMA and that the scientific evidence produced against Patricia was “grossly inadequate.”¹⁴ Upon the prosecutor’s request, the county judge dismissed the murder charge, freeing Patricia Stallings after 14 months of wrongful imprisonment.¹⁵

While Patricia was never officially accused or diagnosed with MSBP, the prosecution’s theory against her, as well as the problematic medical evidence, are illustrative of typical MSBP cases.¹⁶ Currently, a medical professional or child-welfare employee will allege MSBP if they think a parent is intentionally harming a child or fabricating the symptoms of a child for the purpose of presenting the child for unnecessary medical treatment.¹⁷ A parent who suffers from MSBP often

10. *Id.* at 1231–32; Michelle Hoffman, *Scientific Sleuths Solve a Murder Mystery*, 254 *Sci.* 931, 931 (1991), <http://classic.sciencemag.org/content/254/5034/931.long>; *Patricia Stallings*, NAT’L REGISTRY OF EXONERATIONS (JUNE 1, 2012), <https://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3660>. MMA is a recessive genetic disorder of amino acid metabolism that affects 1 in 48,000 newborns and presents symptoms similar to ethylene glycol (antifreeze) poisoning. Hoffman, *supra*.

11. Chin, *supra* note 2.

12. Flannery, *supra* note 1, at 1232.

13. Hoffman, *supra* note 10; Chin, *supra* note 2.

14. Chin, *supra* note 2.

15. *Id.*; Flannery, *supra* note 1, at 1232.

16. See Flannery, *supra* note 1, at 1176.

17. See KATHRYN ARTINGSTALL, PRACTICAL ASPECTS OF MUNCHAUSEN BY PROXY AND MUNCHAUSEN SYNDROME INVESTIGATION 74 (1999) (chronicling many cases of MSBP and providing detailed insight into the dynamics of MSBP abuse and investigations); MUNCHAUSEN SYNDROME BY PROXY: ISSUES IN DIAGNOSIS AND TREATMENT 433 (Alex V. Levin & Mary S. Sheridan eds., 1996) (“MSBP . . . is the deliberate creation of illness or its appearance in a child or other dependent, done primarily because of the secondary gains the caretaker derives from attention associated with that illness.”); MUNCHAUSEN BY PROXY: MISUNDERSTOOD CHILD ABUSE 5 (Teresa F. Parnell & Deborah O. Day eds., 1998) [hereinafter MISUNDERSTOOD CHILD ABUSE] (describing MSBP as “a form of child abuse in which the caretaker fabricates and/or induces illness in a child”); HERBERT A. SCHREIER & JUDITH A. LIBOW, HURTING FOR LOVE: MUNCHAUSEN BY PROXY SYNDROME 13–34 (1993) [hereinafter HURTING FOR LOVE] (examining the detection, definition, dynamics, and management of the disorder). This Note only discusses children as the victims of symptom

seeks to gain the attention of medical personnel, outsmart doctors, or fill psychological and emotional voids.¹⁸ These parents can be dangerous to a dependent child; however, both the diagnosis and adjudication of suspected MSBP are prone to error.

MSBP diagnoses rose to prominence in dependency adjudications during the 1980s and 1990s, a time when courts increasingly placed significant weight on expert testimony, especially in cases involving child abuse.¹⁹ However, more recently, courts and agencies have faced problems with questionable expert witnesses and unreliable scientific theories.²⁰ Cases are being reversed and defendants exonerated as newer scientific techniques debunk former techniques and expose their lack of scientific foundation.²¹ At the very least, methods are being questioned and prompting deeper consideration.²²

induction. Outside the scope of this Note are the less common cases in which other dependents, such as elderly family members, are the victims of abuse.

18. See *infra* Section II.B.

19. This is partly due to the increase in reporting of child abuse, especially for daycare cases, in the 1980s and 1990s. See DAVID B. ALLISON & MARK S. ROBERTS, *DISORDERED MOTHER OR DISORDERED DIAGNOSIS?* xix (1998); see also Inger J. Sagatun & Leonard Edwards, *Expert Witnesses in Child Abuse Cases*, 6 JOHN F. KENNEDY U. L. REV. 1, *passim* (1995); Elaine E. Sutherland, *Undue Deference to Experts Syndrome?*, 16 IND. INT'L & COMP. L. REV. 375, 375–78 (2005) (“Expert witnesses figure prominently when syndromes come before the courts and, undoubtedly, there is no shortage of either syndromes or expert witnesses prepared to testify about them.”).

20. Sutherland, *supra* note 19, at 378; see, e.g., INNOCENCE PROJECT, *WRONGFUL CONVICTIONS INVOLVING UNVALIDATED OR IMPROPER FORENSIC SCIENCE THAT WERE LATER OVERTURNED THROUGH DNA TESTING 1* (2009), http://www.innocenceproject.org/wp-content/uploads/2016/02/DNA_Exonerations_Forensic_Science.pdf (discussing forensic techniques that have not undergone significant scientific evaluation and may be inaccurate).

21. For a discussion of debunking methods in the context of child sexual abuse, see DEBBIE NATHAN & MICHAEL SNEDEKER, *SATAN’S SILENCE: RITUAL ABUSE AND THE MAKING OF A MODERN AMERICAN WITCHHUNT 2* (1995) (describing the 1980s prosecution of childcare workers for ritual satanic sexual abuse of children, which relied on child-abuse-expert testimony to describe otherwise benign behavior of children, such as bed wetting, as indicative of ritual sexual abuse). See also Mark Godsey, *Breaking: With Today’s Release of the San Antonio Four, Texas Now on the Cutting Edge of Efforts to Free the Innocent*, HUFFINGTON POST: THE BLOG (Nov. 18, 2013, 12:47 PM), http://www.huffingtonpost.com/mark-godsey/with-todays-release-of-th_b_4296813.html (discussing four women initially convicted using faulty examination standards, which have since been updated). For a discussion of debunking methods in the context of battered child syndrome, see Linda Rodriguez McRobbie, *In Texas, a New Law Lets Defendants Fight Bad Science*, ATLANTIC (Feb. 28, 2014), <http://www.theatlantic.com/national/archive/2014/02/in-texas-a-new-law-lets-defendants-fight-bad-science/283895/> (discussing how a man convicted of horrific child abuse was exonerated when a physicist demonstrated the boys’ injuries could have been caused by playing with his brother).

22. See, e.g., DEBORAH TUERKHEIMER, *FLAWED CONVICTIONS: SHAKEN BABY SYNDROME AND THE INERTIA OF INJUSTICE* (2015) (describing newly discovered evaluations that question the shaken baby diagnosis). *But see* Joëlle Anne Moreno & Brian Holmgren, *The Supreme Court Screws Up the Science: There Is No Abusive Head Trauma/Shaken Baby Syndrome “Scientific” Controversy*, 2013 UTAH L. REV. 1357 (detailing the studies

In light of this skeptical climate, it is unsurprising that parents and professionals alike question the validity of the MSBP diagnosis in dependency adjudications.²³ Opponents to the MSBP diagnosis claim that it is often generalized and subjective, and not grounded in a unique set of determinant characteristics.²⁴ These critics question whether a parent's determination that a child suffers from medical symptoms should be undermined, or whether a parent should be denied his or her right to their child based on a doctor's finding of MSBP.²⁵

The ramifications of an MSBP diagnosis are significant for parents and caretakers. In dependency court proceedings, an MSBP diagnosis can lead to the termination of parental rights, or, at the very least, a deprivation of one's children for a period of time. On the other hand, a missed MSBP diagnosis leaves children at risk of severe harm—or even death—at the hands of their caretakers. Despite the critical role the diagnosis can play in major, family-altering decisions, a clear, uniform method of approaching MSBP adjudication does not exist. Both parents and child-custody agencies utilize unreliable evidence and unfounded expert testimony, leaving decision-makers to evaluate and weigh the competing theories.²⁶ Such valuation, absent better data and understanding of MSBP, is error-prone and can violate parents' rights.²⁷ Therefore, a reliable method of evaluating MSBP evidence is not only prudent, but part of a constitutional obligation to protect parental rights.²⁸

cited by the Supreme Court that question the shaken baby syndrome diagnosis and showing how each one contains the hallmarks of junk science).

23. See, e.g., Maxine Eichner, Opinion, *The New Child Abuse Panic*, N.Y. TIMES (July 11, 2015), <http://www.nytimes.com/2015/07/12/opinion/sunday/the-new-child-abuse-panic.html>; *Mothers Against Munchausen by Proxy Allegations*, M.A.M.A., <http://www.msbp.com> (last visited Feb. 5, 2017).

24. ALLISON & ROBERTS, *supra* note 19, at xxiii (“MSBP is not so much a precise and objective mental disorder, possessed of a unique set of determinant characteristics, as it is a generalized hypothesis advanced by a group of individuals and institutions with similar concerns and intentions, all of whom tend to collectively define and perpetuate its very existence as a disorder.”).

25. See, e.g., ERIC G. MART, MUNCHAUSEN'S SYNDROME BY PROXY RECONSIDERED (2002); Loren Pankratz, *Persistent Problems with the Munchausen Syndrome by Proxy Label*, 34 J. AM. ACAD. PSYCHIATRY & L. 90, 90 (2006) [hereinafter *Persistent Problems with MSBP*]; Loren Pankratz, *Persistent Problems with the “Separation Test” in Munchausen Syndrome by Proxy*, 38 J. PSYCHIATRY & L. 307, 307 (2010).

26. See discussion of data and its critics *infra* Part II.

27. See, e.g., *Meyer v. Nebraska*, 262 U.S. 390, 397 (1923) (holding that parents have the right to control their children's education); *Pierce v. Soc'y of Sisters*, 268 U.S. 510, 534–35 (1925) (“The child is not the mere creature of the state those who nurture him and direct his destiny have the right, coupled with the high duty, to recognize and prepare him for additional obligations.”). *But see* *Wisconsin v. Yoder*, 406 U.S. 205, 233–34 (1972) (explaining that parents' right to make decisions regarding their children, even when linked to the Exercise Clause, is limited if their decisions will jeopardize their children's health and safety).

28. See *infra* Part IV.

The evidentiary issues that arise in MSBP adjudications represent a greater problem that courts experience when dealing with litigation-driven research: “junk science.”²⁹ Junk science is a phenomenon that plagues courtrooms across the country.³⁰ Among other attributes, junk science is marked by litigation-driven research or predetermined conclusions, manipulated, cherry-picked, or otherwise unreliable data; and over-reliance on expert testimony to present data and stir controversy. While junk science typically refers to spurious claims and manufactured controversies, even objective and accepted forms of evidence are also subject to issues of reliability. Realistically, scientific evidence should be evaluated on a continuum rather than the simple good–bad dichotomy. MSBP cases demonstrate both instances of junk science and objective, accepted—yet not always entirely reliable—types of evidence.

MSBP adjudication provides an excellent case study to better understand junk science in the courtroom for several reasons: the relatively rare disorder is addressed by only a limited number of cases, making it accessible in scope; on both sides of a dispute, MSBP evidence is often based on predetermined conclusions that did not originate in the scientific process; MSBP diagnoses and defenses are often built on unsubstantiated, inadequate, or misrepresented data; and MSBP knowledge and defenses are established in the courtroom through the use of experts. Additionally, MSBP diagnoses rely on the differential diagnosis, a non-junk scientific method that is prone to error and biases if not properly conducted. For these reasons, an understanding of the various proposed solutions for MSBP adjudication issues provides a case study for other areas of law dealing with junk science evidentiary issues.

This Note will examine how MSBP demonstrates these aspects of junk science, and then propose a solution to assist both agencies and legal professionals. In Part I, this Note discusses the characteristics of junk science in the courtroom. In Part II, this Note analyzes the history of MSBP diagnoses. Part III discusses the admittance of MSBP evidence and how it fits into the judicial process. It also provides an analysis of approximately 50 cases that demonstrates the overarching evidentiary issues in MSBP cases. Finally, Part IV sets forth a recommendation to assist decision-makers in evaluating the evidentiary support for an alleged MSBP diagnosis. These recommendations aim to better protect the rights of parents, preserve the integrity of scientific testimony in the courtroom, and avoid the pitfalls of junk science in dependency adjudication.

I. JUNK SCIENCE AND THE ADMISSION OF SCIENTIFIC KNOWLEDGE IN THE COURTROOM

The intersection between law and the scientific community is prevalent and growing. Courtrooms frequently rely on scientific expert testimony to demonstrate theories of cases with complex facts beyond the average juror’s

29. See *infra* Part I.

30. See generally PETER W. HUBER, GALILEO’S REVENGE: JUNK SCIENCE IN THE COURTROOM (1993); Joseph M. Price & Gretchen Gates Kelly, *Junk Science in the Courtroom: Causes, Effects, and Controls*, 19 HAMLINE L. REV. 395 (1996).

understanding.³¹ Consequently, “judges, law professors, and lawyers . . . increasingly shape our understanding of scientific ideas by determining how the law interprets and applies scientific information and by ensuring that bad science does not create bad law.”³² Bad science, also known as “junk science,” in the courtroom is litigation-driven science.³³ Such science is often based on data or research methods considered unreliable³⁴ or insufficient³⁵ by scientific communities. Further, it tends to come into the courtroom in the form of expert testimony,³⁶ and it can be difficult to identify.³⁷ In some ways, these characteristics could extend to other types of scientific inquiry that are subject to bias and error but are still presented in a courtroom as objective and foolproof; for example, the differential diagnosis. Realistically, understanding problematic science in the courtroom requires moving past evaluating scientific evidence as either good or bad and instead “make[ing] more subtle evaluations of particular evidence.”³⁸ Thus, in evaluating junk science, this Part will also consider general deficiencies in the scientific process that likewise plague scientific courtroom testimony.

As litigation-driven science, junk science presents research “undertaken [to find] evidence favoring one side in litigation, and [explain] away or otherwise [play] down evidence favoring the other side.”³⁹ Normally, junk science research is driven by a biased, predetermined conclusion or an outright lie to manufacture controversy.⁴⁰ By contrast, the ideal scientific process should start with a hypothesis derived from observing some phenomenon from a set of facts.⁴¹ Then the hypothesis must be tested to see if it can be falsified.⁴² Falsification not only tests the theory independently but also combats confirmation bias.⁴³ Confirmation

31. Susan Haack, *What's Wrong with Litigation-Driven Science? An Essay in Legal Epistemology*, 38 SETON HALL L. REV. 1053, 1054 (2008) (“[S]cientists testify [] on just about every subject imaginable: experts on blood, bullets, bitemarks, battered wives; on PCBs, paternity, poisons, post-traumatic stress; on radon, recovered memories, rape trauma syndrome, random-matched probabilities; on psychosis, asbestosis, silicosis . . .”).

32. Moreno & Holmgren, *supra* note 22, at 1357.

33. *Id.*

34. KENNETH R. FOSTER & PETER W. HUBER, *JUDGING SCIENCE: SCIENTIFIC KNOWLEDGE AND THE FEDERAL COURTS* 112–35 (1997) (explaining that scientific evidence must be reproducible to be considered reliable).

35. *See id.* at 137–62 (discussing the factors that make scientific evidence valid).

36. Moreno & Holmgren, *supra* note 22, at 1362–63.

37. Henry Berry, *The Medical Expert, Junk Reasoning, and Junk Science in Personal Injury Litigation*, 40 TORT TRIAL & INS. PRAC. 1101, 1113 (2005) (noting that genuine differences in opinion between credible scientists are much easier to discern than junk science).

38. Sutherland, *supra* note 19, at 381.

39. Haack, *supra* note 31, at 1075 (noting the possible bias in litigation-driven research).

40. *Id.* at 1072–73.

41. Tee L. Guidotti, *The Nature of Science*, in *SCIENCE ON THE WITNESS STAND* 99, 103 (Tee L. Guidotti & Susan G. Rose eds., 2001).

42. FOSTER & HUBER, *supra* note 34, at 37–38 (“[A] hypothesis that repeatedly withstands attempts to falsify it will become accepted by the scientific community, even if conditionally, as true.”).

43. *Id.* at 44–45.

bias is a notable concern in the scientific process, particularly for litigation. Often examiners may (unwittingly) ask the “right questions” to manufacture the conclusion they want.⁴⁴ Or, scientists may use a theory “to design experiments and analyze data, and then interpret the results,” in a rather circular fashion, to confirm the original theory.⁴⁵ Furthermore, scientists may work backward from a theory, never actually conducting the necessary falsification that the true scientific process requires.⁴⁶

Non-falsified and non-falsifiable theories are particularly important in the medical context, where the differential diagnosis can be plagued by several types of biases. Medical professionals diagnose illness and injury based on a seven-step process that includes a differential diagnosis, which distinguishes a particular condition from other similar conditions by process of elimination.⁴⁷ However, “failing to consider alternative diagnoses is commonplace.”⁴⁸

Common factual errors in medical diagnoses demonstrate that medical professionals should use caution when relying on the differential diagnosis. The first is ignorance of pathology, where a practitioner is unfamiliar with the symptoms and findings necessary for a given diagnosis.⁴⁹ The second is theorizing and speculating causes of diseases—theories of causation for diseases need to be confirmed through a clinical process of observation, studies, and, if possible, experimentation before being reported as fact.⁵⁰ A third common error is the subjectivity of a medical professional’s perspective, demonstrated by the fact that physicians may ignore some symptoms and alternative diagnoses, while giving more, or exaggerated, attention to others.⁵¹ Additionally, a fourth type of error

44. *Id.* at 45 (“[A] mental health professional investigating child abuse may too readily (albeit unwittingly) collaborate with the presumed victim to create memories of abuse that never occurred.”).

45. *Id.* at 49; *see also* Paul A. Offit, AUTISM’S FALSE PROPHETS: BAD SCIENCE, RISKY MEDICINE, AND THE SEARCH FOR A CURE 25–26 (2010).

46. *Id.*

47. Berry, *supra* note 37, at 1108. The seven-step process begins by establishing an evidentiary foundation based on the patient’s history, examinations, and investigations. The second step is the selection of relevant evidence, and the third step involves the differential diagnosis. The differential diagnosis is compared to other resembling diseases for comparison to rule out possible alternatives. The fourth step is establishing the level of certainty; the fifth step is choosing a working diagnosis. The sixth step is the choice of treatment and, finally, the seventh step is observation of the patient’s progression and response to treatment. *Id.*

48. *Id.* at 1109.

49. *Id.* at 1120.

50. *Id.* at 1121; *see also* Susan R. Poulter, *Medical and Scientific Evidence of Causation: Guidelines for Evaluating Medical Opinion Evidence*, in EXPERT WITNESSING: EXPLAINING AND UNDERSTANDING SCIENCE 193 (Carl Meyer ed., 1998) (discussing the limitations of causation in the differential diagnosis because it is impossible to determine with certainty).

51. Berry, *supra* note 37, at 1122. For example:

[A] rheumatologic practitioner may make a diagnosis of fibromyalgia on the basis of widespread pain and increased tenderness over points that are tender in all of us in combination with insomnia and fatigue.

involves defects in the foundational evidence on which a medical professional relies to diagnose a patient.⁵² Such defects include errors in initial history and difficulty obtaining a complete history, test results, or the initial physical evaluation.⁵³ While the diagnostic process is grounded in seemingly objective medical knowledge, it is still subjective and not without limits.⁵⁴ In particular, syndrome diagnoses with common and nonspecific symptoms are not falsifiable and are prone to error.⁵⁵

Junk science research is also noted for its congregation of “biased data, spurious inference, and logical legerdemain, patched together by researchers whose enthusiasm for discovery and diagnosis far outstrips their skill.”⁵⁶ Conclusions are based on “cherry-picked data and manipulation of statistical methods. They rely on opinion and commentary, nonrandomized retrospective case reports (without control groups), and scientifically unsubstantiated opinions of other ‘mercenary witnesses.’” The conclusions may “mischaracterize and omit existing and easily ascertainable [other] research.”⁵⁷ However, all scientific data is prone to errors in evaluation and measure. “The much praised reliability of science occurs only in the long term; in the short term, science is as flawed . . . and as subject to manipulations and intellectual passions as any other human activity.”⁵⁸ Errors in the evaluation of scientific data range from good-faith to bad-faith errors. Good-faith errors include experiment design,⁵⁹ reporting of false positives and false negatives,⁶⁰ the misinterpretation of statistical evidence,⁶¹ and the misreporting of results. Bad-faith errors include the deliberate manipulation of

The rheumatologist will not consider or will not be aware of intercurrent symptoms of depression, anxiety, or life stresses, and the differential diagnosis of a somatoform disorder will not even have been raised, much less considered.

Id.

52. *Id.* at 1123.

53. *Id.* at 1123–25.

54. The nature of a physician’s role makes the ability to conduct true scientific investigation limited. Physicians are also limited by time and the subjectivity of patient complaints. *See* Carl Meyer, *Science, Medicine, and the U.S. Common Law Courts*, in *EXPERT WITNESSING: EXPLAINING AND UNDERSTANDING SCIENCE*, *supra* note 50, at 10–11 (“Regardless of often extensive scientific training[,] physicians must be able to act before all facts are in, in the face of uncertainty. They do so by relying on tradition, the advice of mentors and consensus among local peers, rather than scientific independent analysis.”).

55. FOSTER & HUBER, *supra* note 34, at 59–60.

56. HUBER, *supra* note 30, at 328; *see also id.* at 28, 33 (discussing practices such as data dredging, conflating causation and correlation, and heavily relying on anecdotes and personal testimony, and non-replicable experiments).

57. Moreno & Holmgren, *supra* note 22, at 1368–69.

58. FOSTER & HUBER, *supra* note 34, at 83.

59. The Wakefield conclusion that the MMR vaccine causes autism was based on a study of eight children. Such a conclusion requires a much more empirical evaluation of children. *See* OFFIT, *supra* note 45, at 25–26.

60. This is particularly important in a situation where the occurrence is very rare. It is extremely difficult to report rare occurrences because the probability of getting a correct positive is already so low. *See* FOSTER & HUBER, *supra* note 34, at 116–19.

61. *Id.* at 75–76.

data⁶² and the deceptive presentation of results. Both types of errors can be hard to detect, particularly in data manipulation (whether in good or bad faith). Neutral parties can sift through data presented, but they cannot check data that has been omitted.⁶³ While junk science is often equated with the more outrageous bad-faith misuses of data,⁶⁴ good-faith errors also cause issues with data reliability and validity.⁶⁵

Experts-for-hire, otherwise known as mercenary experts,⁶⁶ also suggest the use of junk science in the courtroom. These experts are often characterized as promulgating a “manufactured controversy.”⁶⁷ They receive substantial fees for their reports and testimony; thus, they have a pecuniary interest in encouraging a controversy that will spur further litigation.⁶⁸ Compensating an expert does not automatically negate the expert’s objectivity, but when entire genres of litigation are built on particular types of testimony and litigation, courts should factor in objectivity concerns about expert witnesses.⁶⁹ Experts in the courtroom generally hold a powerful position as representatives of a “certain body of knowledge” unattainable to the laymen jury and members of the court.⁷⁰ In particular, courts exhibit substantial deference to doctors.⁷¹ But doctors—particularly in the child-abuse context—have a long history of irresponsible and negligent testimony.⁷² Strategies employed by unscrupulous experts include presenting unique theories of causation, misrepresenting the literature, or overstating qualifications.⁷³

Currently, junk science threatens the legal system’s goals of achieving accuracy and justice.⁷⁴ However, the push in the adversarial system to aggressively represent a client by making the best argument possible, even if that leads to searching for causes at the far fringes of science and beyond, directly supports the growth of junk science.⁷⁵ Overbroad evidentiary rules regarding expert testimonies

62. *Id.* at 96; *see also* Moreno & Holmgren, *supra* note 22, at 1377–1433 (discussing the practice of cherry-picking data and the inadequate methodologies of various studies that assert alternative hypotheses for shaken-baby-syndrome cases).

63. FOSTER & HUBER, *supra* note 34, at 100.

64. *See, e.g.*, OFFIT, *supra* note 45, at 25–26 (discussing Andrew Wakefields’ MMR study); James Temple, *How Climate Deniers use Statistics to Mislead*, SFGATE (July 22, 2013 5:19 PM), <http://www.sfgate.com/technology/dotcommentary/article/How-climate-deniers-abuse-statistics-to-mislead-4677033.php> (discussing the use of statistical manipulation to misrepresent climate change data).

65. *See generally* FOSTER & HUBER, *supra* note 34, at 111–62.

66. *See* Moreno & Holmgren, *supra* note 22, at 1362.

67. *Id.* at 1372.

68. *Id.*

69. Sutherland, *supra* note 19, at 383.

70. *Id.* at 382.

71. *Id.*

72. *See* David L. Chadwick & Henry F. Krous, *Irresponsible Testimony by Medical Experts in Cases Involving Physical Abuse and Neglect of Children*, 2 CHILD MALTREATMENT 313 *passim* (1997).

73. *Id.* at 313–14.

74. Moreno & Holmgren, *supra* note 22, at 1357.

75. HUBER, *supra* note 30, at 3; *see also* Ronald J. Allen & Esfand Nafisi, *Daubert and its Discontents*, 75 BROOK. L. REV. 131, 131 (2010) (“[Parties may] present

tend to allow any “self-styled scientist, no matter how strange or iconoclastic his views will be.”⁷⁶

To admit an expert’s testimony, the judge, as gatekeeper, must analyze the following factors: (1) the expert’s qualifications and methodology under Rule 702; (2) the expert’s data under Rule 703; and (3) the probative versus prejudicial value of the data under Rule 403.⁷⁷ Rule 702 allows for a wide range of experts to testify based on “knowledge, skill, experience, training, or education.”⁷⁸ With respect to admissibility of an expert’s methodology, the rule’s focus should be on scientific validity.⁷⁹ In most states, this involves a totality-of-the-circumstances examination of the methods: testability, falsifiability, error rate, existence and maintenance of standards to control experimentation, general acceptance, and the extent to which the method has been subjected to peer review.⁸⁰ This multi-factor approach, known as the *Daubert* test, replaced the “general acceptance” approach, which critics argued placed litigation results in scientists’ hands rather than entrusting them to the adversarial process.⁸¹

The factors enumerated in the *Daubert* test vary in their ability to evaluate the reliability and validity of a differential diagnosis. For testability, the judge can look to whether alternative causes were tested or ruled out to falsify the diagnosis.⁸² However, for the most part, the differential diagnosis is considered a valid methodology as it is generally accepted, peer-reviewed, and most often correct.⁸³ In revising Rule 703, the advisory committee specifically determined that a doctor’s diagnosis should be assumed valid, subject to cross-examination, and the adversarial process.⁸⁴ Overall, the evaluation must be based on the “principles and methodology, not the on the conclusions generated.”⁸⁵ Thus, the court will rely on “vigorous cross-examination, presentation of contrary evidence,

whatever relevant evidence there is and explore the veracity of that evidence at trial. The operating assumption, and the deepest aspiration of the legal system, is that this process will facilitate the accurate resolution of disputes upon which the rights and obligations of the parties depends.”).

76. HUBER, *supra* note 30, at 3.

77. Karen E. Read & Susan G. Rose, *The Daubert Decision: Effects on the Admissibility of Scientific Evidence and Testimony*, in SCIENCE ON THE WITNESS STAND, *supra* note 41, at 83.

78. *Id.*

79. *Id.* at 83–84.

80. *Id.* This standard has been derived from the revised Federal Rules of Evidence, as well as the Supreme Court’s decision in *Daubert v. Merrell Dow Pharmaceuticals, Inc.* See 509 U.S. 579 (1993). In *Daubert*, the Court determined that the 1975 revision of the Federal Rules of Evidence overruled the previous “general acceptance test” adopted in *Frye v. United States*. *Id.* at 589. Despite this ruling, several states have not yet adopted *Daubert*, and continue to consider only whether the methodology or theory has been “approved by a loosely defined consensus among a ‘relevant community’ of scientists.” Read & Rose, *supra* note 77, at 83–84.

81. See FOSTER & HUBER, *supra* note 34, at 11.

82. Read & Rose, *supra* note 77, at 90.

83. *Id.*; Delaware v. McCullen, 900 A.2d 103, 118–20 (Del. Super. Ct. 2006).

84. FED. R. EVID. 702 advisory committee’s notes to 1972 amendment.

85. FOSTER & HUBER, *supra* note 34, at 15.

and careful instruction on the burden of truth [as] the traditional and appropriate means of attacking shaky but admissible evidence.”⁸⁶

Compounding the issue, there is evidence that judges do not always understand aspects of the scientific process.⁸⁷ A 2001 study of the scientific acumen of 400 state court judges revealed that few understand the basic criteria in the *Daubert* standards.⁸⁸ Of the judges surveyed, 96% did not understand testability or error rates.⁸⁹ The study demonstrated that courts are experiencing “systemic and ongoing problems assessing the quality of scientific evidence,”⁹⁰ at a time when the law becomes increasingly dependent on science, and expert witnesses play a greater role than ever before.⁹¹

Finally, the adversarial process is deficient where both sides do not have equal access to resources. This is especially true in dependency adjudications. Dependency counsel is often overburdened by substantial caseloads that prevent them from providing adequate representation. States have maintained or cut funding to dependency counsel even as caseloads have increased.⁹² Although the U.S. Constitution does not require that parents be provided with an attorney in dependency adjudications, most states provide one as a matter of state law.⁹³ However, availability of resources for dependency adjudication vary and can be limited, making it less likely that a parent will be able to hire a competing expert if faced with a false abuse allegation.⁹⁴

Junk science is, for the most part, a legal problem and therefore requires legal solutions. The scientific process encourages testing theories and data over time; it is cumulative and often self-correcting. Courtroom science, on the other hand, attempts to cabin scientific evidence into an adversarial view, rather than recognize the importance of the scientific process. A legal proceeding “seeks to

86. *Id.*

87. Joëlle Anne Moreno, *Einstein on the Bench?: Exposing What Judges Do Not Know About Science and Using Child Abuse Cases to Improve How Courts Evaluate Scientific Evidence*, 64 OHIO ST. L.J. 531, 533 (2003).

88. *Id.* (citing Sophia I. Gatowski et. al, *Asking the Gatekeepers: A National Survey of Judges on Judging Expert Evidence in a Post-Daubert World*, 25 L. & HUM. BEHAV. 433, 442 (2001)).

89. *Id.*

90. *Id.*

91. Moreno & Holmgren, *supra* note 22, at 1357.

92. See, e.g., ACLU OF CAL., SYSTEM ON THE BRINK 1 (2015), <https://www.aclusocal.org/sites/default/files/wp-content/uploads/2015/05/DependencyCourtsWhitePaper-CA.pdf>.

93. Vivek S. Sankaran, *Protecting a Parent's Right to Counsel in Child Welfare Cases*, 28 ABA CHILD L. PRAC. 101, 103 (2009), http://www.americanbar.org/content/dam/aba/publications/center_on_children_and_the_law/parentrepresentation/protecting.authcheckdam.pdf.

94. See CTR. ON CHILDREN & THE LAW, AM. BAR ASS'N, COURT IMPROVEMENT PROGRAM PARENT ATTORNEY SURVEY RESULTS (2011), http://www.americanbar.org/content/dam/aba/publications/center_on_children_and_the_law/parentrepresentation/cip_survey_results_long.authcheckdam.pdf (presenting results of a survey that asked about the quality of parental representation and various funding schemes).

resolve a focused legal dispute in a finite period of time.”⁹⁵ One solution scientists suggest is the use of checklists to help judges or other legal actors evaluate specific types of evidence. While such checklists do not dictate how a judge should rule on a specific evidentiary issue, they “initiate and guide an important process of evaluation of knowledge, and emphasize its depth and seriousness.”⁹⁶ The framework suggested in this Note provides a similar evaluation tool for judges to determine the strength of evidence in MSBP cases.

II. MSBP

A. History of MSBP

Like over 300 studies of MSBP spanning a wide array of books and journal articles, this examination also begins with English pediatrician Roy Meadow and the legacy of Baron von Munchausen.⁹⁷ In 1977, Meadow detailed two cases in which mothers induced or fabricated illnesses in their children.⁹⁸ From this narrow clinical observation, Meadow established a simple profile that fit both mothers.⁹⁹ He described the mothers as unusually pleasant, cooperative, and appreciative compared to other mothers, who he described as “bored, uneasy, or overly aggressive.”¹⁰⁰ The two mothers seemed to flourish and thrive on the attention from medical staff.¹⁰¹ Both mothers’ personal records contained histories of falsifying their own medical specimens, depression, and hysteria.¹⁰² Based on these observations, Meadow concluded that he had recorded the first cases of

95. FOSTER & HUBER, *supra* note 34, at 17.

96. *Id.* at 229–30.

97. Hieronymus Karl Friedrich, Freiherr (Baron) von Münchhausen, was an 18th century German raconteur who told stories of fantastic travels and imaginary exploits. He was the inspiration for the fictional Baron von Münchhausen in Rudolf Erich Raspe’s book, *BARON MUNCHAUSEN’S NARRATIVE OF HIS MARVELOUS TRAVELS AND CAMPAIGNS IN RUSSIA* (1785). The name was first used in medical terminology in 1951, by the psychiatrist Richard Asher. He used the term Munchausen Syndrome to describe adults who seemed to have a strange addiction to hospitals and who would either fabricate or induce illness in themselves to gain admittance to hospitals and to see doctors for unnecessary investigations and treatment. *TRUST BETRAYED: MUNCHAUSEN SYNDROME BY PROXY, INTER-AGENCY CHILD PROTECTION AND PARTNERSHIP WITH FAMILIES 14* (Jan Horwath & Brian Lawson eds., 1995).

98. Roy Meadow, *Munchausen by Proxy: Hinterland of Child Abuse*, 310 *LANCET* 343–45 (Aug. 1977).

99. *Id.*

100. *Id.* at 344.

101. *Id.* Dr. Meadow never described what he meant by “thriving,” but future work elaborated on the concept. *See, e.g.,* ARTINGSTALL, *supra* note 17, at 48–50 (describing the offender as “perfectly attentive,” content, and experiencing a “renewed sense of control”); HURTING FOR LOVE, *supra* note 17, at 16–17 (describing mothers as appearing “to enjoy belonging to a social circle whose common bond is caring for sick children” and appearing “to have few friends outside of hospital personnel and other parents”).

102. Meadow, *supra* note 98, at 344.

“Munchausen Syndrome by Proxy,” and that both cases should serve as a warning for doctors to be vigilant and skeptical of parental histories for minor patients.¹⁰³

Following Meadow’s clinical observations, pediatricians began to apply the profile to potential child-abuse cases.¹⁰⁴ To obtain more objective numbers, Donna Rosenberg, M.D., conducted a significant literature review of possible MSBP in the United States, looking at 22 years of child-abuse cases and finding 117 possible cases of MSBP.¹⁰⁵ Rosenberg’s literature review is represented and cited as the research foundation for MSBP case studies and diagnoses; it has also been employed in numerous dependency and parental-termination cases across the country¹⁰⁶ when citing mortality and morbidity statistics.¹⁰⁷

Although seeking to be objective, Rosenberg’s criteria and description of a syndrome presented a much more subjective interpretation. Rosenberg described a syndrome as a “cluster of symptoms or signs [that] are circumstantially related.”¹⁰⁸ She established four symptoms that constitute the MSBP “syndrome cluster”: (1) induced or fabricated illness in a child, which is perpetuated by a parent or an individual acting *in loco parentis*; (2) persistent presentation of the child for medical care, often resulting in medical procedures; (3) perpetrator’s denial of the knowledge regarding the sources of the child’s illness or disorder; and (4) abatement of the child’s symptoms after separation from the parent (“Separation Test”).¹⁰⁹

103. *Id.* at 345.

104. HURTING FOR LOVE, *supra* note 17.

105. Donna A. Rosenberg, M.D., *Web of Deceit: A Literature Review of Munchausen Syndrome by Proxy*, 11 CHILD ABUSE & NEGLECT 547, 547–63 (1987).

106. *See, e.g., In re Greene*, 568 S.E.2d 634, 636 (Ct. App. NC, 2002) (citing the four-part test to determine MSBP, but not specifically Rosenberg); *In Re Dylan C.*, 699 N.E. 2d 107, 109 (Ohio App. 6 Dist. 1997) (citing that the mortality rate was between 8% and 31%, and the morbidity rate was higher than 50%); *In Re S.R.*, 599 A.2d 364, 367 (Vt. 1991) (“[T]he psychologist that diagnosed [MSBP] testified that S.R. faced a [10% to 20%] chance of death based on her parents’ denial of that disorder”); *In Re McCabe*, 580 S.E.2d 69, 71 (N.C. App. 2003) (“The risk of morbidity or mortality associated with Munchausen syndrome by proxy according to [the expert witness] is [15–30%].”); THOMAS A. ROESLER & CAROLE JENNY, *MEDICAL CHILD ABUSE: BEYOND MUNCHAUSEN SYNDROME BY PROXY* 73 (2009) (“‘Web of Deceit’ is the second most frequently cited paper in the field after Meadow’s original work. Science Citation Index notes that Meadow’s original paper has been quoted 360 times in the medical literature, and Rosenberg’s ‘Web of Deceit’ paper 177 times.”).

107. Rosenberg established that in 75% of cases children experienced short-term morbidity (no permanent pain or disfigurement) caused by medical teams and perpetrators directly. In the other 25%, medical teams alone caused the short-term morbidity. Additionally, Rosenberg established long-term morbidity (permanent disfigurement or disability) in 8% of the 107 children. Of the 117 children involved, 10 children died. Rosenberg established the risk of death at 9% based on these numbers. Additionally, Rosenberg found that 20% of children sent home after their parents were confronted by medical personnel ended up dying. Rosenberg, *supra* note 105, at 552.

108. *Id.* at 549.

109. *Id.* at 549–50.

Adding to the MSBP profile, Rosenberg found that all of the perpetrators were mothers.¹¹⁰ Rosenberg only had data for 60% of the occupations of the mothers identified as perpetrators. However, nursing and stay-at-home work were the most common professions identified.¹¹¹ Many also exhibited evidence of other psychological disorders.¹¹² Rosenberg argued for incorporating MSBP into practitioners' differential diagnoses. She suggested that if MSBP is incorporated into the differential diagnosis, then there will be earlier diagnoses preventing "a great deal of mortality and morbidity."¹¹³

During the 1990s, MSBP evolved in the eyes of the medical community from a rare phenomenon to a type of child abuse, drastically underreported and endangering the nation's children.¹¹⁴ Doctors and researchers began to gather case studies that fit the MSBP profile.¹¹⁵ From this considerable literature, a much stronger profile of the MSBP parent arose.

The latest attempt to revamp the MSBP diagnosis occurred in 2009, when professionals started to use the term *medical child abuse*.¹¹⁶ Medical child abuse occurs when a parent presents a child for unnecessary medical treatment by either

110. *Id.* at 555 (finding that 98% of perpetrators were biological mothers, 2% were adoptive mothers, and 1.5% of cases had evidence of paternal collusion). While most studies and descriptions of MSBP describe the perpetrator as the mother or maternal figure, fathers have also been known to perpetrate MSBP. *See* Briyana Morrell & Donna Scott Tilley, *The Role of Nonperpetrating Fathers in Munchausen Syndrome by Proxy: A Review of the Literature*, 27 J. PEDIATRIC NURSING 328, 335 (2012) (providing a mortality statistic of between 6% and 10%); *see also* Flannery, *supra* note 1, at 1198 (stating that the lack of equivalent cases with a paternal perpetrator may be related to lack of consideration of the father, better manipulation by fathers, and the fathers' role in society). Although beyond the scope of this Note, the issue of gender bias and MSBP is exhibited throughout the case law. *See generally* Melinda Cleary, *Mothering Under the Microscope: Gender Bias in Law and Medicine and the Problem of Munchausen Syndrome by Proxy*, 7 T.M. COOLEY J. PRAC. & CLINICAL L. 183 (2005).

111. Rosenberg, *supra* note 105, at 555 (27% had nursing training, and 20% worked at home).

112. *Id.* (identifying unspecified accounts of depression and symptoms of various personality disorders among the 97 perpetrators); *see also* ALLISON & ROBERTS, *supra* note 19, at xix ("[V]irtually every 'Munchausen' patient mentioned in the literature had a panoply of already existing physical, behavioral, and psychological disorders, not to mention that many were driven to seek hospitalization and shelter for reasons having to do with drug dependency, substance abuse, homelessness, poverty, or, quite simply, intense personal pain and suffering"). In many of the cases where MSBP is most apparent there is evidence that the parents have other mental health issues. *See infra* note 167.

113. Rosenberg, *supra* note 105, at 558.

114. Flannery, *supra* note 1, at 1188; Melissa A. Prentice, *Prosecuting Mothers Who Maim and Kill: The Profile of Munchausen Syndrome by Proxy Litigation in the Late 1990s*, 28 AM. J. CRIM. L. 373, 390 (2001).

115. ROESLER & JENNY, *supra* note 106; *see also* HURTING FOR LOVE, *supra* note 17 (detailing case studies of MSBP from fetuses to the elderly); J. Jeffrey Malatack et al., *Munchausen Syndrome by Proxy: A New Complication of Central Venous Catheterization*, 75 PEDIATRICS 523, 525 (1985); H. Juhling McClung et al., *Intentional Ipecac Poisoning in Children*, 142 AM. J. DISEASES CHILD. 637, 638 (1988).

116. ROESLER & JENNY, *supra* note 106, at 77 (2009).

fabricating or inducing symptoms. It occurs to the child, not as an illness suffered by the parent. Recognizing the deficiencies in the MSBP diagnosis, the medical community sought to more distinctly shift the focus from the motive of the caregiver to the abuse received by the patient—the unnecessarily harmful or potentially harmful medical care.¹¹⁷ The medical child abuse label is an attempt to redefine and broaden the MSBP label by incorporating other perpetrator-related factors that expose children to abuse, including whether the perpetrator acted because of financial incentive, medical neglect, failure to follow prescribed treatment, or a tendency towards exaggeration of medical issues.¹¹⁸ Under the medical child abuse label, the purposeful induction of illness is considered more-traditional physical child abuse.¹¹⁹ Despite the changes in the definitions, courts and medical professionals tend to conflate medical child abuse with MSBP.¹²⁰

B. MSBP Today

Today, doctors and other interested parties continue to observe several key characteristics in the caretaker profile.¹²¹ The caretaker focuses relentlessly on the child's medical problems and often tells "outright falsehoods" about both the caretaker's and the child's backgrounds, medical histories, and life experiences.¹²² The caretakers are described as completely devoted, isolated, and intensely interested in the child's medical care.¹²³ One example of the prevalent inconsistencies is that the typical profile describes the caretaker as inappropriately calm, even when confronted by police, yet aggressive, frantic, and angry when confronted in the hospital.¹²⁴ Psychological testing has revealed evidence of nonspecific personality disorders with hysterical, narcissistic, antisocial, and, at times, borderline traits.¹²⁵ The profile of the MSBP caretaker continues to evolve. In one study, the authors produced a list of 113 "syndromes, signs, and symptoms"

117. See ROESLER & JENNY, *supra* note 106, at 1–40 (reviewing the initial MSBP research and finding areas of conflict or concern, especially with parental profile data and the separation test). In assessing medical child abuse, the doctor will ask if the caregiver's request for treatment or exaggeration of the patient's symptoms is excessive, and if the patient's quality of life being seriously impaired. *Id.* at 50.

118. ROESLER & JENNY, *supra* note 106, at 119. This differs from MSBP, where the critical dynamic is that the parent wants a relationship with doctors or hospitals. See HURTING FOR LOVE, *supra* note 17, at 13.

119. ROESLER & JENNY, *supra* note 106, at 125. Many cases and articles use medical child abuse synonymously with MSBP. For the purposes of this Note moving forward, the two will be used synonymously, but the Medical Child Abuse factors will become part of the general use of the term MSBP.

120. See, e.g., *Williamson v. Texas*, 365 S.W.3d 1, 10 (Tex. Ct. App. 2010) (stating that the child was a victim of "medical child abuse, sometimes referred to as Munchausen Syndrome by Proxy"); *In re Brandon L.*, Nos. 1–15–0779, 1–15–0944, 2015 IL App. (1st) 150779, at *2 (Ill. Ct. App. Sept. 8, 2015) (Westlaw).

121. HURTING FOR LOVE, *supra* note 17, at 13; Flannery, *supra* note 1, at 1189.

122. HURTING FOR LOVE, *supra* note 17, at 14.

123. *Id.* at 17.

124. *Id.* at 18–19.

125. C.N. Bools et al., *Comorbidity Associated with Fabricated Illness (Munchausen Syndrome by Proxy)*, 67 ARCHIVES DISEASE CHILDHOOD 77, 77–79 (1992).

which are indicative of MSBP.¹²⁶ However, the evolving profile has been criticized for its subjectivity, areas of contradiction, and overinclusiveness.¹²⁷

Critics of MSBP find the diagnosis to be inconsistent, vague, and subjective.¹²⁸ Rosenberg's study has been extensively criticized. Even Meadow wrote a letter to the editor of *Child Abuse & Neglect*, stating that he considered the final statistics to be "too high."¹²⁹ Additionally, Meadow and others questioned Rosenberg's methods, finding several misuses of data and unsupported conclusions.¹³⁰ These critics observed arbitrary diagnoses of MSBP between medical professionals and Child Protective Services ("CPS"), as well as an over-diagnosis of MSBP and medical child abuse.¹³¹

Because MSBP is extremely rare,¹³² some suggest that the alleged MSBP cases far exceed the number of actual occurrences.¹³³ Critics allege that parents of children with rare or newly discovered diseases disproportionately experience MSBP diagnoses.¹³⁴ Several advocacy groups for individuals with rare diseases

126. MISUNDERSTOOD CHILD ABUSE, *supra* note 17, at 79.

127. MART, *supra* note 25, at 21 ("[A] syndrome that covers so much ground would be much more likely to produce false positive errors than to identify actual cases of MSBP."). Compare Bools et al., *supra* note 125, at 77–79 (finding that many mothers had a history of physical or emotional abuse or were victims of MSBP themselves), with HURTING FOR LOVE *supra* note 17, at 17 (finding through interviews that mothers with MSBP appeared to have a normal family life).

128. See ALLISON & ROBERTS, *supra* note 19, at xxix; *Persistent Problems with MSBP*, *supra* note 25, at 90 ("In case after case, experts disagree about how to define and confirm MSBP.").

129. Roy Meadow, *Letter to the Editor*, in ROESLER & JENNY, *supra* note 106, at 73 (stating that in his experience, a parent hurt a child after being confronted with allegations of abuse in only 1% of cases).

130. *Id.*; Pankratz, *supra* note 25, at 309–11 (stating that Rosenberg double-counted cases that had been reported more than once). Additionally, statistics regarding how many children died after being sent home were similarly misleading, as Rosenberg divided the total number of children who died—10—by the total number of children sent home after confrontation—2—and determined that there is a 20% chance of dying if children are sent home after parental confrontation. A more accurate calculation would have considered all of the unknown number of children who were sent home with their parents and died. *Id.*

131. See Pankratz, *supra* note 25, at 92 (discussing two cases where MSBP was arbitrarily diagnosed); Maxine Eichner, *Bad Medicine: Parents, the State, and the Charge of "Medical Child Abuse"*, 50 U.C. DAVIS. L. REV. 205, 229–34 (2016) (noting that medical child abuse is broad and overinclusive).

132. Best estimates suggest that health professionals will likely encounter at least one case during their careers. The reported incidence is approximately 0.5 to 2 per 100,000 children under 16. Emalee G. Flaherty et al., *Caregiver-Fabricated Illness in a Child: A Manifestation of Child Maltreatment*, 132 AM. ACAD. PEDIATRICS 590, 592 (2013).

133. See Jody Allard, *The Controversial Child Abuse Epidemic Tearing Families Apart*, ESTABLISHMENT (Oct. 26, 2015), <http://www.theestablishment.co/2015/10/26/medical-child-abuse-an-accusation-epidemic/>. Most jurisdictions do not report medical child abuse or MSBP cases separately. Michigan does, however, and if its records are "indicative of national trends, then they would suggest that 1 in 1,600 parents are accused of medical child abuse each year. Eichner, *supra* note 23; see also Eichner, *supra* note 131.

134. See Eichner, *supra* note 23.

have indicated that they have seen a rise in medical child abuse allegations, but there is no data supporting the idea that alleging medical child abuse leads to more accurate results.¹³⁵

Critiques of the MSBP diagnosis are also rooted in medical science's limitations. Medicine is considered objective, evidenced-based, and not dominated by a single or unified theory.¹³⁶ Broad evidentiary rules allow "virtually any doctor, armed with a medical degree" to testify.¹³⁷ Yet, as discussed above, there may be limitations to the medical diagnosis process in meeting the standard needed to deprive individuals of their constitutional rights.¹³⁸

The medical community has responded to MSBP by creating more objective criteria for physical diagnosis for when MSBP occurs across a variety of subspecialties. For example, in gastrointestinal cases doctors utilize human lymphocyte antigen testing to determine the source of blood, and whether or not it originates from the child.¹³⁹ Other objective tests include measuring urine temperatures to tell true fever from fictitious fever, examining levels of endogenous insulin versus injected insulin,¹⁴⁰ or a plethora of other factors and tests that could specifically indicate MSBP.¹⁴¹ This is similar to the types of tests developed to solidify the battered child syndrome diagnosis.¹⁴² While this type of testing is evolving, most cases examined did not include a testing of the diagnosis that was this extensive.

Moreover, the nature of diagnosing syndromes can also affect the reliability of the diagnosis. Rosenberg's criteria established a set, or cluster, of symptoms. This cluster could be applied to any number of seemingly related

135. Eichner, *supra* note 131, at 229–34; *see, e.g.*, MITOACTION: MITOCHONDRIAL DISEASE ACTION COMMITTEE, <http://www.mitoaction.org> (last visited Feb. 7, 2017); MOTHERS AGAINST MUNCHAUSEN SYNDROME (MAMA), <http://www.msbp.com> (last visited Feb. 7, 2017). Additionally, MSBP has been used as a proxy for a slew of previously unidentified conditions. *See Pankratz, supra* note 25, at 309–10. This is indicative of the greater issue that some scientific discoveries turn out to be anomalies or inaccurate. *See HUBER, supra* note 30, at 25–26. Additionally, the diagnosis may be used frivolously or as a revenge tactic between spouses or doctors and patients. *See, e.g., In Re Shelby L.*, 699 N.W. 2d 392, 395 (Neb. 2005); ARK. CODE ANN. § 12-18-307 (2009) (requiring reports alleging MSBP to be made by a child abuse reporter or medical professional).

136. Berry, *supra* note 37 at 1103.

137. HUBER, *supra* note 30, at 16.

138. *See* discussion Part I *supra*.

139. Emil Chuang & David Piccol, *Gastrointestinal Manifestations*, in MUNCHAUSEN SYNDROME BY PROXY: ISSUES IN DIAGNOSIS AND TREATMENT *supra* note 17, at 124.

140. Stephen Ludwig, *The Role of the Physician* in MUNCHAUSEN SYNDROME BY PROXY: ISSUES IN DIAGNOSIS AND TREATMENT, *supra* note 17, at 287.

141. *See, e.g.*, sources cited in MUNCHAUSEN SYNDROME BY PROXY: ISSUES IN DIAGNOSIS AND TREATMENT, *supra* note 17, at 103–230, 247–56 (presenting several chapters with articles about approaches to MSBP from various subspecialties); Janet E. Squires & Robert H. Squires, *Munchausen Syndrome by Proxy: Ongoing Clinical Challenges*, 51 J. PEDIATRIC GASTROENTEROLOGY & NUTRITION 248 (2010).

142. *See* U.S. DEP'T JUST., BATTERED CHILD SYNDROME: INVESTIGATING PHYSICAL ABUSE AND HOMICIDE (2015).

medical and psychiatric phenomena that do not constitute a syndrome but are still connected by an objective observer.¹⁴³ Syndromes normally represent an earlier stage of medical history that is later replaced by an actual diagnosis linked to more concrete evidence.¹⁴⁴ From a review of the history, MSBP seems to be floating between concrete diagnosis and subjective syndrome status.

MSBP has come a long way since Meadow's initial case studies. However, it is evident that the extent and the prevalence of MSBP are still unclear. In general, the literature demonstrates significant progress in attempting to delineate a precise diagnosis for an MSBP caretaker, but the subjectivity and lack of uniformity demonstrate how the process is prone to diagnostic errors and the pitfalls of junk science.

III. THE LAW AND PROCEDURE OF MSBP

Once a caretaker is suspected of having MSBP, the action moves from the hospital to the courtroom. This Part briefly discusses the legal process in child-dependency adjudications and how MSBP evidence comes into the courtroom. This Part then examines how courts have adjudicated cases where there was an MSBP diagnosis, starting with two fundamental cases in MSBP history. It also provides an analysis of MSBP case law across jurisdictions, noting key themes and concerns in the adjudicatory process. This analysis demonstrates that legal actors need to consider new options to avoid the pitfalls of biased and subjective evidence, as well as the limitations of the differential diagnosis process.

Underlying this entire process, courts are bound to uphold parents' rights to life, liberty, and due process of law promised by the Fifth and Fourteenth Amendments. These rights include the substantive rights to the "companionship, care, and management of his or her children," as well as the right to due process before substantive rights can be terminated.¹⁴⁵ In evaluating due process in a standard case, courts must balance an individual's interests against the state's interests.¹⁴⁶ However, in child-abuse cases, the state's role shifts to *parens patriae*—"the parent of the country"—traditionally referring to the "role of the

143. See Rosenberg, *supra* note 105. The possible problems associated with the objective observer proposal have been detailed above and are crucial in addressing MSBP's limitations in the courtroom. See *supra* Part I.

144. Berry, *supra* note 37, at 1133. In some ways, the evolution of MSBP to medical child abuse may be representative of this process. The medical and CPS communities have yet to adopt a unified vision of what MSBP is and will be in the future. See Flaherty et al., *supra* note 132, at 590 (discussing the need for the medical community to agree on consistent terminology and approach to MSBP). Furthermore, the courts are even further from conceptualizing MSBP uniformly. See *infra* Section III.C, (providing an analysis of MSBP case law).

145. Santosky v. Kramer, 455 U.S. 745, 756 (1982); see also Matthews v. Eldridge, 424 U.S. 319 (1976). *Matthews v. Eldridge* sets forth three factors to determine the process that is due: (1) the private interest affected; (2) the risk of erroneous deprivation of that private interest and the value of any additional or substitute procedural safeguards; and (3) the countervailing government interest supporting the use of the challenged procedure. 424 U.S. 319, 321 (1976).

146. Suzanne Painter Mochow, *Munchausen Syndrome by Proxy: A Subtle Form of Child Abuse and a Potential Due Process Nightmare* 18 J. JUV. L. 167, 172 (1997).

state as sovereign and guardian of person under legal disability, such as juveniles.”¹⁴⁷ The right to parent a child is thereby limited by the heightened state interests.¹⁴⁸ However, under the governing standard, the parental liberty interest “may not be interfered with, under the guise of protecting the public interest by legislative action which is arbitrary or without reasonable relation to some purpose within the competency of the state to effect.”¹⁴⁹ Among the most basic elements required in procedural due process are “adequate notice, opportunity to be heard, a neutral decision[-]maker, and access to the record of the proceedings.”¹⁵⁰ Child-abuse cases are problematic for due process reasons because the state must be able to act on reasonable suspicion, and, in general, dependency and abuse litigation involves substantially less process than other types of litigation.¹⁵¹ In determining the process that is due by balancing the significant interests involved, the court and state should evaluate whether actions unnecessarily violate parental due process and whether the same results could be obtained without interfering with the parent’s due process rights.¹⁵² To terminate parental rights, there must be clear and convincing evidence.¹⁵³

A. *The Child-Dependency Process*

Nearly all states mandate that medical personnel report suspected child abuse.¹⁵⁴ Each state has statutory provisions dictating the intake criteria, which in most states includes some sort of screen for medical child abuse, MSBP, and other mental illnesses that prevent caretakers from appropriately caring for their dependents.¹⁵⁵ However, only a few states require that MSBP be alleged by a doctor.¹⁵⁶

To initiate a child-abuse investigation, a complaint must be filed with the CPS¹⁵⁷ intake department.¹⁵⁸ The intake worker takes down a careful history and

147. *Id.*

148. *Id.*

149. *Id.*

150. *Id.*

151. *Id.* at 184.

152. *Id.*

153. *Santosky v. Kramer*, 455 U.S. 745, 746 (1982).

154. U.S. DEP’T OF HEALTH & HUMAN SERVS., NATIONAL STUDY OF CHILD PROTECTIVE SERVICES SYSTEMS AND REFORM EFFORTS, at viii (2003), <http://aspe.hhs.gov/report/national-study-child-protective-services-systems-and-reform-efforts>.

155. *Id.*

156. *See* examples discussed *supra* note 135. Many state CPS departments have incorporated MSBP and medical child abuse into their intake process regardless of where the allegation originates. *See, e.g.*, VA. DEP’T OF SOC. SERVS., No. 032-02-0802-00ENG, CPS INTAKE TOOL 2–3 (2011), https://www.dss.virginia.gov/files/division/dfs/cps/intro_page/forms/032-02-0802-00-eng.pdf

157. States have varying names, but for the purposes of this Note, CPS refers to all state-run child-custody systems.

158. Joseph M. Pape, *The Role of Child Abuse Agencies and Foster Care, in* MUNCHAUSEN BY PROXY: ISSUES IN DIAGNOSIS AND TREATMENT, *supra* note 17, at 400.

explanation of the charge,¹⁵⁹ and intake then decides whether and how to approach the family.¹⁶⁰ If the factual evidence supports the initial charge, CPS will contact the juvenile court for temporary custody of the child, and upon grant of custody a caseworker will be placed in charge of the case.¹⁶¹ The caseworker will develop treatment-plan objectives, and if these are met, the child will be able to return home.¹⁶² If the treatment plan is not completed or progress is not made, CPS will petition the court for parental termination.¹⁶³

B. MSBP Evidence

Because scientific evidence is key in MSBP adjudication, it is important to consider how effectively courts perform their gatekeeping function. In MSBP cases, much of the evidence will be scientific in nature. Expert witnesses feature “particularly prominently” to demonstrate that the parent meets the criteria for the MSBP diagnosis, or that the child is suffering from MSBP abuse.¹⁶⁴ Additionally, typically through an expert’s testimony or medical records, the court must evaluate a variety of direct evidence (placing blood in diaper, or foreign material found in an intravenous line), and circumstantial evidence (the child is only ill in caretaker’s presence, syringes are found in a mother’s purse).¹⁶⁵

In general, as discussed above, judges will apply the *Daubert* test.¹⁶⁶ Generally, it is not difficult for experts to be qualified in these cases.¹⁶⁷ This is especially true in cases where a doctor presents the results of the differential diagnosis.¹⁶⁸ The quality of expert testimony can determine the value of the evidentiary support in MSBP adjudication. Both parents and state actors in MSBP cases have been accused of using biased testimony and biased professionals.¹⁶⁹ Ultimately, in dealing with MSBP adjudication, the legal system needs a method to balance these competing interests and filter the competing evidence. Dependency decisions should be made only when supported by objective evidence.

159. *Id.*

160. *See id.* (suggesting that the intake approach should be caring and supportive).

161. *Id.* at 402.

162. *Id.* at 404.

163. *Id.*

164. Sutherland, *supra* note 19, at 375–76.

165. Lynn Holland Goldman & Beatrice Crofts Yorker, *Mommie Dearest? Prosecuting Cases of Munchausen Syndrome by Proxy*, 13 CRIM. JUST. 26, 27 (1998–1999). Below this distinction will be referred to as “soft” and “robust” factors.

166. *See supra* Part I (discussing the Court’s *Daubert* decision).

167. *See* PAUL STERN, PREPARING AND PRESENTING EXPERT TESTIMONY IN CHILD ABUSE LITIGATION 22 (1997).

168. *See supra* Part I (discussing differential diagnoses); *see also* Delaware v. McCullen, 900 A.2d 103, 118–20 (Del. Super. Ct. 2006) (holding that the *Daubert* test is satisfied for MBSP evidence when clinicians use the standard differential diagnosis strategy that considers alternative hypotheses in relation to Pediatric Condition Falsification (“PCP”).

169. *See* MART, *supra* note 25, at 21 (2002); TRUST BETRAYED, *supra* note 97.

C. Foundational Cases

People v. Phillips was the first case to allow expert testimony relating to MSBP.¹⁷⁰ In *Phillips*, a mother was accused of poisoning her adopted children with excessive amounts of sodium bicarbonate.¹⁷¹ Through expert testimony, the state introduced MSBP to suggest a motive for the mother's conduct. The expert did not actually evaluate and diagnose the mother. Instead, the expert answered hypothetical questions regarding "mothers who perpetuate MSBP," and he found that if the facts supporting the charges against the mother were found to be true, then she would qualify as a mother with MSBP.¹⁷² The court allowed this type of motive testimony, because without it, the defendant's conduct would have been "inexplicable."¹⁷³ The defendant argued that MSBP was not an accepted diagnosis in the medical community at the time. The court analogized MSBP to admittance of battered child syndrome and found that courts approved the use of battered child syndrome using medical literature similar to that relied on by the state's expert.¹⁷⁴ *Phillips* is well known for broadening the existence of MSBP and is cited almost universally as a starting point for MSBP adjudications.¹⁷⁵

In re Jessica Z., decided the same year as *Phillips*, applied the doctrine of *res ipsa loquitur* to the MSBP diagnosis.¹⁷⁶ A mother brought her nine-month-old child to a doctor to treat persistent diarrhea and vomiting, which caused dehydration and inhibited the baby's ability to eat. After exhausting all available tests and finding no cause, the doctors decided to perform several surgical procedures and consulted experts on a variety of diseases, from cystic fibrosis to AIDS. When all of the tests failed to determine the cause of the child's problems, the doctors suspected the mother. The doctors noted that when the baby was in a controlled environment her symptoms abated. But when she returned to her mother, many of her symptoms returned.¹⁷⁷ The treating physician and nurse testified that the mother fit the description of a caretaker suffering from MSBP.¹⁷⁸ The mother brought in another pediatric gastroenterologist to review the baby's files. He subsequently determined that the treating physician misdiagnosed the baby.¹⁷⁹ The court accepted both doctors' testimonies as experts in their field, but

170. See 175 Cal. Rptr. 703 (Ct. App. 1987).

171. *Id.*

172. *Id.*

173. *Id.*

174. *Id.*

175. Kimberly L. Sweet, Note, *Munchausen Syndrome by Proxy: Treatment in the Courts*, 16 BUFF. WOMEN'S L.J. 89, 97 (2008).

176. 515 N.Y.S.2d 370, 377 (N.Y. Fam. Ct. 1987).

177. *Id.* at 372-73.

178. *Id.* at 374 (discussing various aspects of the MSBP profile, such as the doting mother, the mother who is always calm, and the mother who is very trusting of medical personnel and seeks to establish a relationship with them).

179. According to the mother's expert, a birth defect could have caused the baby's diarrhea, as well as other infections following the surgical procedures. Furthermore, the expert found it unlikely that chronic laxative ingestion would have caused the baby's severe illness. *Id.* at 376.

ultimately held for the state because the mother's expert could not provide an explanation for the laboratory results showing the foreign substance.¹⁸⁰

D. Pervasive Issues in MSBP Adjudication

The *Phillips* and *Jessica Z.* cases were influential in establishing a foundation for MSBP case law and the admittance of expert testimony, but they do not provide a view of some of the underlying, pervasive issues that plague MSBP adjudication and make it susceptible to junk science. To develop a test for legal actors to apply when considering MSBP evidence, this Note presents the analysis of approximately 50 cases from criminal, family, and juvenile courts around the country. This analysis yielded several concerning themes. For example, courts fluctuate between addressing MSBP as a type of child abuse suffered by the victim or a mental illness experienced by the parent.¹⁸¹ Also, if the cases cited a mortality or morbidity standard, they cited percentages between 8% and 31%, without regard for or reference to the quality of the statistics.¹⁸²

Additionally, several other cases demonstrate issues with evaluating expert testimony. In these cases, experts presenting qualified expert testimonies for each side held genuine disagreements regarding methods of care and theories of

180. *Id.* at 377.

181. *See, e.g.,* *State v. Butler*, 1 So.3d 242, 243 (Fla. Ct. App. 2008) (“Appellee suffers from Munchausen syndrome by proxy, a psychiatric disorder whose sufferers—predominantly young mothers—factiously induce illness in their young children, often to draw attention to themselves.”); *In Re C.M.*, 513 S.E.2d 773, 774 (Ga. Ct. App. 1999) (“MS[B]P is a disorder in which a parent, usually a mother, induces or fabricates an illness in a child.”); *State v. Lumbrera*, 845 P.2d 609, 618, 620 (Kan. 1992) (“[The defendant] had a need to obtain sympathy, a need to obtain people feeling sorry for her and her problems that she had. I [the State prosecutor] believe that syndrome is called Munchausen Syndrome”); *State v. Weaver*, 898 N.E.2d 1023, 1027 (Ohio Ct. App. 2008) (“The claimed motive for the poisoning is the condition referred to as Munchausen syndrome by proxy or pediatric condition falsification.”). In *Lumbrera*, the State used MSBP as a scientific name for an individual that is addicted to the sympathy that arises from people's reaction to illness, injury, or the death of a child. The State never introduced an expert to specifically state that the parent had MSBP, so the court struck it from the record. *Lumbrera*, 845 P.2d at 620; *see also In Re Colin R.*, 493 A.2d 1083, 1086 (Md. Ct. App. 1985) (“Colin's physicians agreed upon an ultimate diagnosis of the illness he has suffered—Munchausen Syndrome by Proxy.”); *In Re Aaron S.*, 625 N.Y.S.2d 786, 786 (N.Y. Fam. Ct. 1993) (“Aaron was taken into protective custody after being diagnosed with [MSBP], a syndrome in which a parent fabricates or induces medical conditions or illnesses in her child”); *State v. Reid*, 964 S.W.2d 723, 727 (Tex. Ct. App. 1998) (“Dr. Bennett defined MSBP as a ‘series of unexplained incongruous signs and symptoms the child presents with but after you do further testing or remove them from the caretakers control the signs and symptoms tend to disappear or they resolve otherwise.’”).

182. *In Re McCabe*, 580 S.E.2d 69, 71 (N.C. Ct. App. 2003) (“The risk of morbidity or mortality associated with Munchausen syndrome by proxy, according to Dr. Kabeanfuller, is [15 to 30%].”); *In Re Dylan C.*, 699 N.E.2d 107, 109 (Ohio Ct. App. 1997) (stating that the mortality rate was between 8% and 31%, and the morbidity rate was higher than 50%); *In Re S.R.*, 599 A.2d 364, 367 (Vt. 1991) (stating that the risk of death is between 10 to 20%).

the case.¹⁸³ For example, in *United States v. Martinez*, two experts disagreed on whether the defendant had poisoned her three children or if they suffered from mitochondrial disorder.¹⁸⁴ One theme apparent in these expert-dispute cases is that experts often testify based solely on their review of records rather than direct experience.¹⁸⁵ In one such case, *In re McCabe*, a pediatric cardiologist offered an alternative diagnosis of the child's symptoms after only consulting the affected juvenile's primary treating physicians.¹⁸⁶ Another trend in these cases is that many experts use outlier or alternative theories. For example, in *Ohio v. Weaver*, an expert for the caretaker testified that the child experienced the effects of mold poisoning from his home as an alternative to the State's theory that the caretaker poisoned the child.¹⁸⁷ Absent objective evidence, medical experts often based conclusions on these theories or the lack of other possible explanations.¹⁸⁸

183. See *B.M. v. State*, 895 So.2d 319, 324–28 (Ala. Civ. App. 2004); *Yuille v. State*, 45 P.3d 1107, 1112 (Wash. Ct. App. 2002) (Kato, J., dissenting) (noting that the testifying psychologist diagnosed MSBP, but several treating physicians ruled it out); *State v. Weaver*, 898 N.E. 2d 1023, 1031–32, 1038 (Ohio Ct. App. 2008). In *Weaver*, a defense expert presented testimony that toxic molds in the house could have caused all of the child's medical problems, that the toxins could present as a type of poisoning of the child, and that the child was relatively healthy before moving to the house with the suspected mold. *Id.* The court found that "there was conflicting expert evidence on the cause of [the child's] medical condition. The evidence that [the parent] gave [the child] ipecac was circumstantial." *Id.* at 1038–39. Additionally, several of the parent's expert witnesses were excluded, and the court found this exclusion prejudicial. *Id.*

184. 274 F.3d 897, 901 (5th Cir. 2001); see also *State v. Lumbrera*, 845 P.2d 609, 616–17 (Kan. 1992) (discussing experts disagreeing on the cause of death in an autopsy).

185. See *Cooney v. Casady*, 735 F.3d 514, 515 (7th Cir. 2013) (discussing an appeal of a family court decision where an ex-husband hired a therapist that reported the mother was abusing the children to CPS); *D.M. v. J.M.*, 940 N.E.2d 591, 595 (Ohio Ct. App. 2010) (discussing a doctor team that reviewed hospital records and determined child abuse without consulting primary physician, talking to the mother, or examining the child); see also Brief for Defendant-Appellant at 7–10, *United States v. Martinez*, 274 F.3d 897 (5th Cir. 2001) (No. 00-50436). The mother in *Martinez* presented an expert to show that her children had symptoms of mitochondrial disease. The expert did not treat the children directly, but reviewed medical and hospital records. He based his decision not just on symptoms, but also on the fact that the children had test results that could not be manufactured by the parent. Additionally, the State's expert did not treat the children directly or review the records as closely as the mother's expert. *Id.* But see *United States v. Martinez*, 274 F.3d 897, 901 (5th Cir. 2001) (noting that the government's experts ruled out mitochondrial disease, and objectively linked the children's symptoms to Ipecac poisoning).

186. 580 S.E.2d 69, 72 (N.C. Ct. App. 2003); see also *Dep't of Children & Families v. S.E.*, 12 So.3d 902, 903 (Fla. Ct. App. 2009); *In Re M.A.V.*, 425 S.E.2d 377, 379 (Ga. Ct. App. 1992) ("Dr. Kahan's opinions were based upon his examination of the medical records of [the child] and it is uncontroverted the doctor did not examine [the child] . . .").

187. *State v. Weaver*, 898 N.E. 2d 1023, 1029–31 (Ohio Ct. App. 2008).

188. See *In Re M.A.V.*, 45 S.E.2d at 378 ("[D]octors . . . concluded based upon the extensive medical examination and testing of the child that had eliminated all other reasonable explanations for the two incidents, that the proper diagnosis by exclusion was MSBP."); *In Re A.B.*, 600 S.E.3d 409, 411–13 (Ga. Ct. App. 2004) (describing multiple experts who testified that the caretaker had MSBP only because no other person had observed the child's seizures); Brief for Defendant-Appellant at 7–8, *United States v.*

Additionally, like junk science “mercenary experts,” many MSBP cases utilized a common set of experts.¹⁸⁹

E. MSBP as an Example of Junk Science

As discussed above, the themes prevalent in junk science also permeate MSBP adjudication. First, while the differential diagnosis is clearly not junk science, the process can exhibit characteristics of junk science, especially when exposed to the incompatible and adversarial courtroom environment.¹⁹⁰ MSBP is a diagnosis that is affected by preconceived biases and errors in the differential diagnosis. This is evident in the *res ipsa* approach to diagnosing MSBP, rather than positively diagnosing MSBP.¹⁹¹ Further, if the differential diagnosis is not exhaustive, with attempts to falsify the diagnosis, the likelihood of error is greater.¹⁹² Additionally, outlier theories presented by some experts defending accused parents also exemplify litigation-driven expert testimony. As demonstrated in the analysis above, these experts often received the case file after a parent was accused of having MSBP and reviewed a child’s records simply with the goal of negating the MSBP diagnosis.

Second, as demonstrated in the discussion of the Rosenberg data and the subjective syndrome classification, MSBP evidence relies on misrepresented or vague, unsubstantiated data. The problematic nature of MSPB evidence is exacerbated by courts’ inability to decide whether to conceptualize MSPB as a syndrome or as a form of abuse. Some courts treat MSBP as a syndrome, others as a form of abuse. It is difficult to establish a consistency among the vague, subjective factors in this environment.¹⁹³ The Rosenberg data represent a flawed

Martinez, 274 F.3d 897 (5th Cir. 2001) (No. 00-50436) (explaining that the State’s expert could not completely rule out mitochondrial disease in any of the children); *B.S. v. Somerset Cty.*, 704 F.3d 250, 254 (3d Cir. 2012). Based solely on one inpatient observation, the child’s treating physician incorrectly testified that the child’s failure to thrive stemmed from psychosocial issues arising from factors in the child’s home. *Id.* However, the issues persisted after separation from mother. *Id.*

189. *In Re Willamina*, 881 N.E. 2d 771, 776 (Mass. Ct. App. 2008) (testimony by Dr. Eric Mart); *see also Reid v. State*, 964 S.W.2d 723, 727–28 (Tex. Ct. App. 1998); *Yuille v. State*, 45 P.3d 1107 (Wash. Ct. App. 2002) (Kato, J., dissenting) (noting that Dr. Feldman, an author on MSBP who testified on behalf of the State, had previously diagnosed MSBP in other cases despite its rarity); *see also B.M. v. State*, 895 So.2d 319, 321 (Ala. Civ. App. 2004) (noting Dr. Feldman provided testimony for the State). In *Reid*, Dr. Carol Rosen, the author of *Medical Child Abuse*, testified for the State as an expert on medical child abuse. *Reid*, 964 S.W.2d, at 727–28. Another doctor that testified in the case was well known as an expert in MSBP after having appeared as an expert in almost all cases from his home state of Iowa. *Id.*

190. *See supra* Part I (discussing possible errors in the differential diagnosis).

191. *See supra* notes 176–80 and accompanying text (discussing the *res ipsa* approach). Doctors do have limits to conducting tests and the principle that when diagnosing a patient they should look for the probable diagnosis. However, understanding what tests were and were not performed should go to the weight of the testimony. The goal should be to determine the extent to which a doctor has attempted to falsify a diagnosis. *See HUBER & FOSTER, supra* note 34, at 61.

192. *See infra* notes 216–19; *see also supra* Part I.

193. *See supra* note 121–27.

statistical methodology.¹⁹⁴ An expert's reliance on such data is not scientifically valid or reliable. Additionally, MSBP is supposed to be a rare phenomenon.¹⁹⁵ Therefore, the likelihood of inaccurate diagnosis is substantial, and it is difficult to find a true test that can objectively identify MSBP with a degree of certainty.¹⁹⁶

Third, MSBP evidence must enter the courtroom using experts. As reflected in the above case-law analysis, many of the cases exhibited "battling" experts advocating for or against an MSBP diagnosis. The same defense experts, child-abuse specialists, and treating pediatricians were used in many of the cases.¹⁹⁷ Persistent use of experts in this manner should be considered cautiously by the court. As noted above, these types of experts may build careers from promulgating controversies in the courtroom. This is particularly true in child-abuse cases.¹⁹⁸ In the child-abuse context, experts have a long history of misrepresenting the literature, presenting unique, untested theories of causation, and overstating qualifications. Furthermore, medical experts have a history of misinterpreting indicators of abuse.¹⁹⁹ These cases demonstrate a confusing, dynamic diagnosis that agency actors, judges, and lawyers cannot seem to fully grasp. MSBP is powerful and important. When the diagnosis is mismanaged, people go to jail; children are removed from their families; and worst of all, children die. The above summary of case law demonstrates how some of the pervasive issues in MSBP adjudication align with the tenets of junk science. Social workers, lawyers, and judges cannot change the biases of the differential diagnosis, the inadequacy of the Rosenberg data, or the subjectivity of the current approach to MSBP diagnosis. Furthermore, they cannot change the adversarial process, which promotes a "battle of the experts" to advocate any possible claim or theory to negate or further the MSBP diagnosis. However, lawyers, social workers, and judges can determine how to best evaluate MSBP evidence so that it can have the appropriate impact on the legal proceeding. Such an evaluation would ensure the best balance between the state's interest in protecting children and the parents' interest in the care and companionship of their children.

IV. ADOPTING AN MSBP-SPECIFIC METHOD OF EVALUATING EVIDENTIARY SUPPORT

A. *Soft-Sign vs. Robust-Sign Indicators*

In the approximately 50 MSBP cases analyzed for this Note, evidentiary support was a common issue. Generally, the evidence could fit on a spectrum between soft and robust signs. Soft signs include profiling evidence and support

194. See *supra* note 112 (discussing Rosenberg data).

195. See *supra* Section II.B.

196. FOSTER & HUBER, *supra* note 34 (discussing how it is impossible to design an accurate test for something that occurs so rarely)

197. See *supra* note 189.

198. See generally Sutherland, *supra* note 19.

199. See Chadwick & Krous, *supra* note 72; see also, e.g., sources cited *supra* note 19.

following the inability to understand a child's illness.²⁰⁰ More robust signs include less specific circumstantial evidence, or more direct indicators such as lab results showing a foreign substance, a caretaker having syringes on his or her person, and a caretaker caught lying about a child's condition.²⁰¹ On the furthest end of the spectrum are cases with direct evidence of the caretaker harming the child, such as video surveillance,²⁰² while on the opposite end are cases which are built solely on weak inferences or profiling of the caretaker.²⁰³ In many ways, this spectrum represents the difficulties with MSBP adjudication and courts' understanding of the scientific evidence involved. In other ways, it represents the continuum of scientific evidence that courtrooms face.

Cases with a more robust showing of MSBP-related evidence demonstrate the importance of including MSBP considerations in the differential diagnosis. For example, in *In Re CM* a hospital recorded video footage of a mother injecting a solution of feces and urine into her child's intravenous tube. Upon confrontation, the mother admitted to the injection.²⁰⁴ In another case, *In Re J.W.*, a drug screen of an unresponsive infant revealed the presence of aspirin, butalbital, and opiates—all active ingredients of Fiorinal.²⁰⁵ In most of these cases, the testifying experts were the treating physician, and the testimonies included a discussion of the medical professionals' differential diagnoses.²⁰⁶ Aside from a stronger presence of objective evidence, the conclusions in these decisions are still

200. *State v. Pickens*, 332 S.W. 3d 303, 316–17 (Mo. Ct. App. 2011). The expert explained:

“Soft Signs” that could indicate the presence of the disorder include the perpetrator being the individual who has primary responsibility for the victim. Other “soft signs” are that the perpetrator is usually seen superficially as normal or a good caretaker, can be an accomplished liar or manipulator, may have a background in the health-care profession or a knowledge of medical procedures and symptoms, might seek attention from a variety of people, may doctor shop, and might be the only person who is consistently present when the victim experiences symptoms.

Id.

201. *Id.* (“Even critics agreed that the diagnosis was valid where in addition to ‘soft signs,’ there were robust indicators such as lab tests confirming the presence of symptom-causing substances in the victim’s body.”); *see also, e.g., State v. Butler*, 1 So.3d 242, 245 (Fla. Dist. Ct. App., 2008) (explaining that video footage showed the parent placed something over the child’s mouth and nose).

202. *See, e.g., Butler*, 1 So.3d at 244; *In Re Hope L.*, 775 N.W.2d 384, 394 (Neb. 2009) (describing police video surveillance capturing video of a mother disconnecting a feeding tube 25 times); *In Re M.B.*, 6 P.3d 1072, 1074 (Okla. Civ. App. 2000) (“[D]uring a videotaped interview with police investigators, the mother confessed to intentionally contaminating the IV fluid with her own urine.”).

203. *See In Re Shelby L.*, 699 N.W.2d 392, 401 (Neb. 2005).

204. 513 S.E.2d 773, 775 (Ga. Ct. App. 1999).

205. 779 N.E. 2d 954, 956 (Ind. Ct. App. 2002).

206. *See, e.g., In Re Colin R.*, 493 A.2d 1083, 1085 (Md. Ct. App. 1985) (detailing the physicians path to determining parental involvement in the child’s ailments).

subject to errors in judgment or process.²⁰⁷ Additionally, many of the caretakers in the robust line of cases manifested other mental health issues, which often made the MSBP determination moot.²⁰⁸

Many cases presented a mix of soft and robust indicators, and the courts accordingly employed a totality-of-the-circumstances approach to determining MSBP.²⁰⁹ Most troubling, however, are cases with only soft signs represented. Such cases present the most significant evidentiary and due process issues.²¹⁰ If

207. See Flannery, *supra* note 1; Patricia Stallings, *supra* note 10; see also Neason v. Clark Cty., 352 F. Supp. 2d 1133, 1138 (D. Nev. 2005) (stating that although the lab results showed a presumptive presence of a foreign substance, abuse allegations were unsubstantiated).

208. See, e.g., *In Re* Greene, 568 S.E.2d 634, 636 (N.C. Ct. App. 2002) (identifying Respondent as having attention-seeking behavior and checking herself into a hospital psychiatric unit claiming major depression and suicidal ideations); *In Re* Dylan C., 699 N.E. 2d 107, 109 (Ohio Ct. App. 1997) (describing the mother as suffering from paranoia and meeting some criteria for several different personality disorders); *In re* Hope L., 775 N.W.2d 384, 394–95 (Neb. 2009). *In re* Hope involved a mother and father convicted of interfering with their child’s feeding tube to give the appearance that the child needed serious gastrointestinal intervention. *Id.* The mother had several mental health diagnoses: anorexia nervosa, purging and restricting type; major depressive disorder; possible PTSD; obsessive-compulsive symptoms; psychotic disorder, not otherwise specified; and borderline personality disorder. *Id.* The psychiatrist who diagnosed Joanna also diagnosed her with factitious disorder by proxy, but felt even without this diagnosis “her opinion would be severely guarded on the mother.” *Id.*

209. See *In Re* J.K., 764 So.2d 287, 292–94 (La. Ct. App. 2000) (discussing several different incidences, test results, and testimonies considered in making custody determination); *In Re* Patrick G.G., 286 A.D.2d 540, 544 (N.Y. App. Div. 2001) (discussing MSBP adjudication and diagnoses as an evaluation of the “total picture presented”).

210. See *In Re* A.B., 600 S.E. 2d 409 (Ga. Ct. App. 2004); *In Re* Shelby L., 699 N.W. 2d 392 (Neb. 2005); *Straton v. Orange Cty. Dep’t Soc. Servs.*, 217 A.D.2d 576, (N.Y. App. Div. 1995) (discussing a child that was removed for one year and subsequently returned to the mother after the child’s conditions did not improve); *In Re* Patrick GG, 286 A.D. 2d 540 (N.Y. App. Div. 2001); *D.M. v. J.M.*, 940 N.E.2d 591, 596 (Ohio Ct. App. 2010) (stating that a team of doctors, many without direct involvement in the case, diagnosed MSBP despite “no specific evidence that the Mother had made up or exaggerated any symptoms”); *State v. Weaver*, 898 N.E. 2d 1023, 1027 (Ohio Ct. App. 2008) (“To prove its case the state relied substantially on circumstantial evidence, expert opinion testimony, and the fact that [the child’s] condition improved after he was removed from the home and from further contact with [the parent.]”). In *In Re* J.W., the doctor

identified several of Mother’s characteristics that were consistent with a diagnosis of Munchausen’s Syndrome by proxy, including: (1) her “extreme enmeshment” and “extreme involvement” with J.W.; (2) her “great concern about illnesses”; (3) repeatedly describing J.W. as “sickly” and as a “preemie”; (4) her enjoyment from “being in the caretaker role of someone who is ill”; (5) her medical experience and interest in becoming a neonatology nurse; (6) her satisfaction and fulfillment from the attention she received as a result of J.W.’s illnesses; (7) her failure to mention J.W. by name, and (8) her feelings of intense responsibility to J.W. to the exclusion of her other child.

779 N.E. 2d 954, 957 (Ind. Ct. App. 2002).

only soft signs are present, legal actors must evaluate the evidence carefully to ensure the clear and convincing threshold is satisfied. In *In Re Keefe*, the court established that soft-sign factors could support an MSBP diagnosis if the evidence demonstrated an exhaustive differential diagnosis process, rather than the caretaker's conformity to a specific profile.²¹¹ However, if the differential diagnosis is not exhaustive, then there is a risk of deprivation of parental rights.²¹² For example, in *In Re Patrick G.G.*, a doctor diagnosed a parent with MSBP because the child was presented to multiple care providers with symptoms of hypoglycemia and diarrhea, yet no medical diagnosis resulted. After the child was removed from her parent's custody, the symptoms did not abate.²¹³ During the appeal of the dependency adjudication, the diagnosing doctor admitted to not consulting with other treating physicians, as well as the child's treating pediatric gastroenterologist, who "was not convinced that the child's symptoms lacked objective medical grounding."²¹⁴ Additionally, soft-sign cases may demonstrate medical professionals' failure to acknowledge all of the relevant facts. For example, in *In Re A.B.* the trial court based its finding of MSBP largely on the lack of independent observation of the child's illness, even though several medical professionals had observed the symptoms in the caretaker's absence.²¹⁵

Soft signs can also be derived from profiling caretaker behaviors.²¹⁶ Profiling soft signs are represented in *In Re Aaron S.*, where the court noted the mother and son had a relationship that was very intimate, the mother had a "high degree" of medical knowledge, was socially isolated, and had a history of irrationality or suicidal ideation.²¹⁷ Reversals of these soft-sign-only cases evince that such an evidentiary showing, absent a more robust presentation, is a cause for reconsideration of the treatment, evaluations, and limitations of the scientific evidence submitted to prove the presence of MSBP.²¹⁸

There is some evidence that incidents of parents losing their children based solely on soft-sign indicators occur more often than reflected in the case-law

211. *In Re Keefe*, 733 N.E.2d 1075, 1079 (Mass. App. Ct. 2000) ("Here, nearly every page of the twenty volumes of testimony was offered not to prove that the mother conformed to a stereotypical profile, but to a well recognized medical diagnosis . . ."); *see also*, *Williamson v. State*, 356 S.W.3d 1, 5–10 (Tex. Ct. App. 2010) (describing doctors' testimony regarding the exhaustive tests performed to ascertain the child's diagnosis).

212. *See supra* Part I.

213. 286 A.D.2d at 545.

214. *Id.*

215. 600 S.E.2d 409, 411–12 (Ga. Ct. App. 2004).

216. *See Thomason v. SCAN Volunteer Servs.*, 85 F.3d 1365, 1368 (8th Cir. 1996). CPS based its removal of the child on reports that the mother was bringing the child in to the doctors and making calls to doctors that seemed excessive. *Id.* All reports were unverified, the findings unsubstantiated, and, after two weeks, the child was returned to the home. *Id.*

217. *In re Aaron S.*, 625 N.Y.S.2d 786, 792 (N.Y. Fam. Ct. 1993). The court found that the mother was not credible because of profiling evidence, siding with nurses over mother's claims about when apnea episodes occurred. *Id.*

218. *See, e.g., In Re M.A.V.*, 425 S.E.2d 377, 379–80 (Ga. Ct. App. 1992), *overruled on other grounds by In Re J.P.*, 480 S.E.2d 8 (Ga. 1997); *Thomason*, 85 F.3d at 1365.

analysis. The records of these cases exist through malpractice suits against diagnosing doctors, or negligence suits against CPS.²¹⁹ Countless other records exist through online testimonies or similar fora designed to support parents or inform of the inadequacies in the adjudication process.²²⁰ Overall, the case law demonstrates that MSBP adjudication is prone to suspect expert qualifications, as well as suspect evidentiary support, whether through unsubstantiated methods or the limits of the differential diagnosis method. Therefore, legal actors should employ MSBP-specific methods to evaluate evidentiary support in MSBP adjudication. Such methods can help prevent wrongful deprivation of parental rights.

B. A Framework for Evaluating the Evidence

When parents wrongfully lose their children, they are deprived of a fundamental right. The state must employ a level of due process that satisfies *Mathews v. Eldridge* when it seeks to deprive an individual of a fundamental right.²²¹ A test moving forward should assist courts in balancing the interests of the parents and the state with the risks of erroneous deprivation.²²² As demonstrated above, junk science raises the risk of erroneous results for both the parent's interest and the state's interest. Therefore, adopting better methods is not only prudent but also obligatory.

Many solutions proposed for issues in MSBP adjudications focus on the process. Suggested solutions include the use of multidisciplinary teams, better investigatory techniques, and better diagnostic techniques.²²³ These solutions are certainly valid and important. Continuing to narrow the definition of MSBP, employing better differential diagnoses, and encouraging medical professionals and CPS to collaborate will lead to a higher quality of evidentiary support in the courtroom. But there are measures that legal actors can employ to change the analysis and weight given to the evidence used.

219. See, e.g., *Roska v. Sneddon*, 311 F. Supp. 2d, 1307, 1311 (D. Utah 2004) (explaining that the child was removed against the wishes of the treating physician, only to be later returned when the court determined there was no immediate harm); *Straton v. Orange Cty. Dep't. Soc. Servs.*, 625 N.Y.S.2d 818, 819 (N.Y. App. Div. 1995) In *Straton*, the mother filed suit after her child was wrongfully removed from her custody. Prior to removal, a doctor wanted to submit the chronically ill child for psychological testing. When the mother refused, the doctor reported her to CPS. *Id.* At the subsequent hearing, experts testified that the mother had MSBP. *Id.* As a result, the child was hospitalized for a year without contact with the mother. *Id.* When the child did not improve, she was returned to her home. *Id.* Similarly, in *Yuille v. State*, two children were erroneously removed from their home. 45 P.3d 1107, 1109–10 (Wash. Ct. App. 2002). The children had similar medical conditions, onset of life-threatening events in the mother's presence, and reduction in symptomatology during hospitalizations. *Id.* Therefore, CPS removed them from the home. *Id.* The children's parents filed suit against the supervising doctor after one child was returned with a "no-contact" order against the mother and another was adopted. *Id.*

220. See sources cited *supra* note 135.

221. 424 U.S. 319, 333 (1976).

222. *Id.* at 335.

223. See, e.g., Flannery, *supra* note 1, at 1227.

When it comes to junk science in the courtroom, some critics call for methods that exclude any testimony that relies on junk science, especially fringe diagnoses that are likely utilized to prove a defendant's "theory of the case."²²⁴ Such a process may over-exclude valid theories necessary for individuals, like Patricia Stallings, to prove their innocence.²²⁵ Additionally, as discussed above, assuming testimony based on the differential diagnosis is necessarily good science risks over-relying on evidence that could be biased or erroneous. Future solutions will likely need to abandon a good-or-bad-science approach, and instead, evaluate the quality of evidence on a continuum between good science and junk science.²²⁶ This Note suggests the use of a decisional matrix specifically tailored to the evidentiary concerns in MSBP adjudication. The decisional matrix will assist legal actors in evaluating the myriad of soft and robust evidence presented to them.

1. Adoption of a Decisional Matrix to Evaluate the MSBP Evidentiary Support

This Note recommends adopting a decisional matrix, which would sort evidentiary support based on where it falls on the soft-sign/robust-sign spectrum. Decisional matrices are decisional tools that assist in weighing different factors.²²⁷

To highlight how the decisional matrix will work, an analysis of *In Re Shelby*, a case that incorporated many of the spectrum factors,²²⁸ will prove useful. First, the evidentiary support or arguments would be listed as options on one side of the decisional chart. The state presented several arguments in *In Re Shelby*: (1) testimony by the caseworker that child received unnecessary medical treatment; (2) testimony by the child's treating pediatrician that she did not receive unnecessary medical treatment; (3) evidence that the child's health drastically improved in foster care; and (4) evidence that the mother inconsistently reported child's symptoms.²²⁹

Next, the matrix will ask the decision-maker to determine the basis of the evidence. The following step will be a list of factors the decision-maker must consider when evaluating the evidence, and the basis of the evidence. Here, factors could be derived from the discussion of junk science, *Daubert*, and a consideration of the soft-sign/robust-sign spectrum. Some factors that agency and legal actors will likely consider include: the basis of the evidence; the reliability of the method;

224. Moreno & Holmgren, *supra* note 22, at 1374.

225. See *supra* notes 1–17 and accompanying text.

226. See discussion *supra* Part I.

227. *Decisional Matrix Analysis: Making a Decision by Weighing Up Different Factors*, MINDTOOLS, https://www.mindtools.com/pages/article/newTED_03.htm (last visited Feb. 14, 2017) [hereinafter *Decisional Matrix Analysis*].

228. 699 N.W.2d 392, 396 (Neb. 2005). In this case, the juvenile court terminated a mother's parental rights to her daughter, Shelby, stating that the mother had medically and physically abused Shelby. *Id.* at 395–96. Shelby lived in foster care for two years with visitation from her mother. *Id.* at 396. When CPS sought to terminate parental rights, the juvenile court granted termination because when Shelby was with her mother she had 25 doctor visits and four emergency visits in nine months, in contrast to only eight visits during her two years of foster care. *Id.* On review by the Nebraska Supreme Court, the court found that the facts did not support termination. *Id.* at 402.

229. *Id.* at 399–402.

the possibility of bias or error; the level of support the evidence has; the nexus of the charge(s) to the evidence; and ultimately, a determination of where on the spectrum of robustness to softness the evidentiary support falls. For example, a differential diagnosis will be evaluated based on its degree of falsification, and whether the physician was the child's treating physician.

Each factor would then be scored based on the strength, quality, and robustness of the evidentiary support. Each factor would have its own test to apply. For example, in evaluating the basis of expert testimony, a higher score would be given in each category if the evidence is derived directly from working with the patient, using an exhausted differential diagnosis, and backed by video surveillance showing the parent harming the child.

Assertion	Support	Evidentiary Basis	Reliability	Falsification	Overall Robustness
Child Received unnecessary medical treatment	Expert Testimony	Social worker summarized phone calls made during the first year of child's life	Social worker didn't have direct contact, inference made that calls were false	Compared it to record and found that many of the calls were warranted	Weak—directly contradicted and circumstantial
Child's health improved in foster care	Expert testimony	Social worker testified as to state of child in medical care	Social worker has direct contact with child, but ability to discern the implications of child's weight gain is weak because she is not a medical professional	Compared to doctors' reports that some weight gain occurred before removal, and children can outgrow specific conditions	Weak—directly contradicted and circumstantial
Child's reflux condition could abate as she got older	Expert testimony	Treating physician	Reliable—doctor had direct contact with patient, has ability to determine	No discussion of the diagnosis process	Stronger

Table 1: Sample *In Re Shelby* Decisional Matrix²³⁰

This decisional matrix would draw out the robust factors and soft factors described above, helping the courts avoid false-positive adjudications.²³¹ There is one factor in the case-law analysis, and exemplified in the Patricia Stallings case, that tends to fall between soft and robust factors—the medical professional's differential diagnosis.²³² This test could drive out the strength and possible limitations to a testifying doctor's differential diagnosis.

230. Table 1 is based on some of the evidentiary support from *In Re Shelby*.

231. While this chart is abbreviated, a complete version would include a comprehensive list of factors that consider the evidence across the whole spectrum. The matrix could also include an assessment of weight assigned to each factor, so at the end there would be an objective measure of robustness. See, e.g., *Decisional Matrix Analysis*, *supra* note 227. For an example of a proposed matrix in a different context, see FOSTER & HUBER, *supra* note 34, at 17.

232. This is particularly important when doctors diagnose MSBP because errors are often based on the lack of knowledge of a rare illness or disease. See, e.g., *In re Aaron*

The primary focus of the decisional matrix would be to aid CPS and legal actors in evaluating the evidence and assertions made by both parties. While the example presented is simplistic, in due course, this tool or a similar model could be used to evaluate the robustness of not just an individual argument, but the case as whole—by directly juxtaposing the different types of evidence in one format. If such a system is employed by CPS, then it could create tiered interventions based on the strength of the available evidence. Additionally, if used in adjudications, application of these standards would help judges assess the level of deference to give an expert opinion and provide attorneys a frame of reference for evaluating the weight of testimony. If implemented, it could change the way in which legal actors approach and prosecute cases of accused caregivers with MSBP, assisting courts in avoiding the pitfalls of junk science, and preventing the deprivation of parents' rights to their children.

One goal of this test would be a tiered intervention plan based on the strength of the factors. Currently, the states' preferred method is to surprise the parent with the state stepping in to take the child, with the CPS case worker explaining the situation to the parent after the fact.²³³ If a case is based only on soft factors CPS could instead proceed to observation, but not go as far as depriving the parents of their child.

Other cases with stronger factors, such as those factors falling in the middle of the robustness spectrum, may require intermediate intervention. An intermediate intervention could invite parents to participate in a state-devised plan for the child's well-being, subject to continued state oversight.²³⁴ Such an intermediate meeting may involve an interdisciplinary team that would look at the entire case and medical records of the child, create alternative hypotheses possibly missed in the differential diagnosis, and consider employing unbiased observers.²³⁵ This meeting should also include a consideration of all past medical records, and possibly a discussion, with previous physicians and doctors. Using this technique, the physician could continue to monitor the situation and satisfy his duty to report

S., 625 N.Y.S.2d 786, 792 (N.Y. Fam. Ct. 1993) (“A past medical history such as the one presented by Aaron which shows a pattern of multiple care providers and the presentation of unusual, confusing, and rare (or even bizarre) symptoms which abate spontaneously when removed from his mother.”).

233. Pankratz, *supra* note 25, at 309–10.

234. *Id.*

235. For a step in the right direction, see *In re Aaron S.*, 625 N.Y.S.2d at 790–91. There, the doctors used an intervention method where they told the mother that they did not want to provide treatment until the doctors observed an occurrence of apnea in the child. *Id.* at 790. The mother claimed that the child had several apnea episodes a night, but the hospital had not witnessed any. *Id.* Doctors then talked with the mother about other exacting studies or tests that could be determinative and observed the mother's reaction. *Id.* The mother became upset and refused the more accurate test. *Id.* As a result, the hospital assigned a nurse to the child for round-the-clock care. *Id.* After three days of monitoring, the mother was brought into a critical care team meeting and told that the doctors did not think her son had apnea. *Id.* at 791; *see also* Williamson v. State, 356 S.W.3d 1, 1–10 (Tex. Ct. App. 2010) (providing insight from teachers, members of mother's church, and other non-biased providers).

while also maintaining parental autonomy and better protecting parental due process rights.²³⁶

If a case proceeds to the courtroom, attorneys for each party as well as the judicial officer would be able to better evaluate the strength of the evidence with a tool like this matrix. For the cases with the most robust factors, the more traditional procedure would likely be most appropriate because the danger to the child could be more significant.

CONCLUSION

MSBP is a supposedly rare phenomenon that is alleged against parents in a manner disproportionate to its frequency. An analysis of approximately 50 cases shows that the current adjudication procedures do not adequately address the evidentiary issues in MSBP cases. Such issues include unsupported or unreliable expert testimony, overuse of circumstantial evidence, and incomplete or biased differential diagnoses provided by medical professionals. While these characteristics demonstrate the traits of junk science, the issues underlying MSBP adjudication reveal the difficulty with defining science as either “good” or “bad.” Realistically, scientific evidence should be evaluated on a continuum, with the quality of the evidence falling somewhere between “good” and “bad” science. This Note presents a possible solution for courts to employ to better evaluate this evidence. Rather than looking to the rules of evidence, or the MSBP diagnosis, this Note proposes the use of a decisional matrix whereby courts could evaluate and weigh the different types of evidence presented. Such a matrix could effectively combat prevailing aspects of junk science in MSBP adjudication and could be applied to other areas of law in the future.

236. Mochow, *supra* note 146, at 172.