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Children's Eyewitness Memory: The Influence of Cognitive and Socio-Emotional Factors

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I. INTRODUCTION

Ensuring children's accurate disclosure and memory is at the heart of the modern scientific study of children's testimony. Much of the research derives from legal cases in which children provide crucial eyewitness evidence. Children may be called upon to bear witness to such crimes as murder, domestic violence, kidnapping, robbery, and more. Yet children's statements in sexual abuse cases are particularly controversial, due in large part to the frequent lack of physical evidence. These legal cases rest to a large extent on the shoulders of children whose cognitive abilities

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are still developing and who need socio-emotional support to function optimally in the legal context.

In the pursuit of justice, it is crucial for the legal system to take the abilities, vulnerabilities, and needs of child witnesses into account. Without doing so, the risks of under-belief in children's reports, as well as risks of over-belief in them, mount. The following cases illustrate some of the dilemmas of under-belief, as well as of over-belief in what children tell us, as related to child sexual abuse cases:

In 2013, a fourteen-year-old girl reported to her school counselor and later to the police that her father was sexually molesting her.¹ The girl was told that her statements alone were insufficient and that she needed proof.² Being a savvy, modern teenager, she knew what to do: she hid a web camera in her bedroom and surreptitiously filmed her father during the next assault.³ After she presented the video recording to the police, they arrested the father.⁴ Although the father acknowledged that the assaults had occurred over the course of three or four months, he claimed that he was just "messing around."⁵ The authorities also considered the mother's possible complicity in the incest, but it appeared that she, too, was a victim of the father's violence.⁶

In contrast to the authorities' under-belief of the fourteen-year-old victim, the Innocence Project reported a case involving authorities' over-belief of a younger child: on Sunday, October 20, 2002, a man approached an eight-year old boy and his six-year old friend. The man offered the eight-year-old ten dollars to pick up trash.⁷ The man then kidnapped the boy, took him to a vacant

1. Miles Klee, *14-year-old Girl Catches Father's Abuse with Webcam*, DAILY DOT (Nov. 5, 2013), [http://www.dailydot.com/crime/france-teen-sexual-abuse-webcam/?headline=3&utm_content=14-year-old girl catches father's abuse with webcam&utm_medium=ppc&utm_source=outbrain&utm_name=outbraindefault&utm_source=outbrain&utm_medium=ppc&utm_campaign=outbraindefault](http://www.dailydot.com/crime/france-teen-sexual-abuse-webcam/?headline=3&utm_content=14-year-old+girl+catches+father's+abuse+with+webcam&utm_medium=ppc&utm_source=outbrain&utm_name=outbraindefault&utm_source=outbrain&utm_medium=ppc&utm_campaign=outbraindefault).

2. *Id.*

3. *Id.*

4. *Id.*

5. *Id.*

6. *Id.*

7. *Ricardo Rachell*, THE INNOCENCE PROJECT, http://www.innocenceproject.org/Content/Ricardo_Rachell.php (last visited Feb. 10, 2014) [hereinafter *Rachell Innocence*].

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house, and sexually assaulted him.⁸ After the assault, the boy reported to his mother what had occurred. He described the man as having a facial deformity.⁹ The next day, the victim's mother saw a man who had the facial deformity described by her son.¹⁰ When asked by his mother, the victim confirmed that this was the man who attacked him.¹¹

The man, Ricardo Rachell, was arrested and was identified in a photo spread by both the victim and his friend.¹² The evidence at trial consisted of the two children's testimony and the mother's statement that she believed Rachell to be the assailant because he matched her son's description.¹³ Rachell's lawyer never requested that his client's DNA, which Rachell voluntarily provided, be compared to the DNA collected at the crime scene.¹⁴ Rachell was found guilty and received a forty-year sentence.¹⁵

Six years later, on January 14, 2009, DNA testing showed that Rachell's DNA did not match the crime scene DNA.¹⁶ The DNA instead matched that of another man who had pled to sexually assaulting other children.¹⁷ Rachell was exonerated and the other man was later convicted of assaulting the eight-year-old victim who originally identified Rachell.¹⁸

These contrasting examples illustrate the dilemmas faced when children provide eyewitness reports about criminal acts.¹⁹ Under-belief can result in lack of protection of children who are currently suffering abuse, or have in the past experienced or witnessed crime. It can additionally result in perpetrators at large, free to continue to offend. If, for example, the fourteen-year-old had lacked access to a webcam, her victimization could have continued, possibly for years.²⁰ However, over-belief can also have serious adverse consequences: innocent people may have

8. *Id.*

9. *Id.*

10. *Id.*

11. *Id.*

12. *Id.*

13. *Id.*

14. *Id.*

15. *Id.*

16. *Id.*

17. *Id.*

18. *Id.*

19. *See* Klee, *supra* note 1; *see Rachell Innocence*, *supra* note 7.

20. *See* Klee, *supra* note 1.

their lives ruined and be incarcerated, as was Rachell, while again the true perpetrator is free to continue to commit crimes against children and others.²¹ The examples also illustrate how it is not only the child witnesses who are involved in the investigation; often—directly or indirectly—their immediate non-offending family members are also involved. In the two cases mentioned, the mothers may have been the first to hear their children's disclosures, question their children, and provide (or do not provide) socio-emotional support.

In this article, we review some of the key research on cognitive and socio-emotional factors that affect children's (a) disclosure and nondisclosure of child sexual abuse, (b) eyewitness memory, and (c) testimony at trial. First, we examine factors that influence disclosure. We then turn to the topic of children's eyewitness memory, particularly in children with histories of child maltreatment. Finally, we address the topic of children's eyewitness reports in court, especially during cross-examination.

Overall, we argue that both cognitive and socio-emotional factors affect children's reports of child sexual abuse, and that both need to be considered by the legal system to ensure that children disclose and report accurately.

II. DISCLOSURE AND NONDISCLOSURE OF CHILD SEXUAL ABUSE

Child victims and witnesses are often asked to discuss distressing, embarrassing, and even self-implicating experiences. This may include when, in forensic interviews, children are asked to recount incidents of child sexual abuse. There is general agreement among researchers that children *on their own* frequently do not disclose sexual abuse.²² Nondisclosure can result from feelings of embarrassment, realizations that sexual acts are taboo, or fears of getting oneself or others in trouble.²³ Although children sometimes give clues ("Do I really have to keep

21. See *Rachell Innocence*, *supra* note 7.

22. See, e.g., Kamala London, et al., *Disclosure of Child Sexual Abuse: What Does the Research Tell Us About the Ways That Children Tell?*, 11 PSYCHOL. PUB. POL'Y & L. 194, 202 (2005).

23. Anna Margrete Flam & Eli Haugstvedt, *Test Balloons? Small Signs of Big Events: A Qualitative Study on Circumstances Facilitating Adults' Awareness of Children's First Signs of Sexual Abuse*, 37 CHILD ABUSE & NEGLECT 633, 634 (2013).

spending the evening with Uncle Jim?”), their parents often miss the implications.²⁴ Recent research on actual cases of child sexual abuse reveals children’s reluctance to discuss sexual events, even when they likely remember what occurred.²⁵

Scientific studies of children’s disclosure of actual sexual abuse are possible when perpetrators record (e.g., photograph, videotape, and/or audiotape) the abuse they inflict on children, or when victims record the acts in attempts to gain proof, as in the example mentioned at the start of this paper.²⁶ Then, when the children are later interviewed about what happened, their disclosures, or lack thereof, can be compared to the “ground truth” of the abusive events.²⁷ In a study involving sexual assaults of six girls and two boys from three- to ten-years of age, Leander et al. compared victims’ reports to the perpetrator’s photographs of the sex crimes.²⁸ The children had been abducted, each on a different day and one at a time, by a single man who was a stranger to the children.²⁹ The children’s accounts to the police, provided one day to five-and-a-half years after the assaults, were compared to the photographs and other evidence present in the case.³⁰ Although the perpetrator neither threatened nor told the children to keep the incidents secret, six of the eight children either failed to provide any information about the sexual assault itself or provided very little sexual information.³¹ Only two of the eight children

24. *Id.*

25. Linda Leander, *What Sexually Abused Children Remember and Report: Minding the Gap 14* (2007) (Ph.D. dissertation, Goteborg University) (on file with author) [hereinafter Leander, *Dissertation*]; see generally Pedro M. Paz-Alonzo, Christin M. Ogle & Gail S. Goodman, *Children’s Memory in “Scientific Case Studies” of Child Sexual Abuse: A Review*, in APPLIED ISSUES IN INVESTIGATIVE INTERVIEWING, EYEWITNESS MEMORY, AND CREDIBILITY ASSESSMENT 143, 143–64 (Barry S. Cooper, Dorothee Griesel & Marguerite Ternes eds., 2013).

26. See Yael Orbach & Michael E. Lamb, *Assessing the Accuracy of a Child’s Account of Sexual Abuse: A Case Study*, 23 CHILD ABUSE & NEGLECT 91, 95–96 (1999).

27. *Id.*

28. Lina Leander, Sven A. Christianson & Par Anders Granhag, *A Sexual Abuse Case Study: Children’s Memories and Reports*, 14 PSYCHIATRY, PSYCHOL. & L. 120, 121–22 (2007) [hereinafter Leander et al., *Children’s Memories*].

29. *Id.* at 122.

30. *Id.* at 123.

31. *Id.* at 124.

gave detailed reports of the sexual acts.³² The children did, however, provide considerable detail about what preceded the sexual assaults, indicating they remembered the incident.³³ These results suggest that children may be reluctant to report sexual abuse not only in cases of intra-familial abuse, as one might expect, but also in cases of extra-familial abuse.³⁴

Leander studied other cases involving sexually abused children and adolescents (twenty-two girls, five- to seventeen-year-olds) in which there was again documentation (e.g., film, photographs) of the sexual abuse.³⁵ The abusive experiences included genital touch, masturbation, and sexual intercourse.³⁶ In the first interview with the police, many of the children denied the abusive acts.³⁷ However, with repeated interviews, the children disclosed sexual information, providing twice as much new sexually related information at the second and third interviews relative to the first interview.³⁸ These results suggest that being interviewed more than once may help reluctant children disclose more information about their sexual experiences.³⁹

Overall, these studies indicate that children generally show a relatively high number of omission errors, or failures to disclose, about sexual acts.⁴⁰ As found in Leander's research, this was at times true even in the face of leading questions and accusatory statements made by interviewers.⁴¹ Some children deny abuse despite being shown the photographs of themselves being assaulted.⁴² Socio-emotional factors associated with child victims'

32. *Id.*

33. *Id.* at 125.

34. *Id.* at 126.

35. Linda Leander, *Police Interviews with Child Sexual Abuse Victims: Patterns of Reporting, Avoidance and Denial*, 34 CHILD ABUSE & NEGLECT 192, 193 (2010) [hereinafter Leander, *Police Interviews*].

36. *Id.* at 194–95.

37. *Id.* at 196.

38. *Id.* at 202.

39. See generally David La Rooy et al., *Do We Need to Rethink Guidance on Repeated Interviews?*, 16 PSYCHOL. PUB. POL'Y & L. 373, 373–87 (2010); but see MARGARET ELLEN PIPE, MICHAEL LAMB, YAEL ORBACH & ANN-CHRISTIN CEDERBORG, CHILD SEXUAL ABUSE: DISCLOSURE, DELAY, AND DENIAL 689–90 (2007).

40. See Leander et al., *Children's Memories*, *supra* note 28; see also Leander, *Police Interviews*, *supra* note 35.

41. See Leander, *Police Interviews*, *supra* note 35, at 195–96.

42. PIPE ET AL., *supra* note 39, at 159–74.

shame and embarrassment, fear of negative consequences of disclosure, and/or guilt, likely account for children's lack of disclosure and omissions of sexual information when recounting sexual acts.⁴³ Such factors can even reverse the typical age advantage in memory performance when reports of genital and anal touch are at issue.⁴⁴ That is, older children at times report less about genital touch than do younger children, even though older children typically report more information, as would be expected given older children's advanced memory development.⁴⁵ Thus, not only cognitive but also socio-emotional factors, such as the interpersonal context at disclosure, must be taken into consideration to understand children's disclosures of sexual abuse, a topic we address next.

III. MATERNAL SUPPORT AND DISCLOSURE OF SEXUAL ABUSE

Children and adults do not disclose prior sexual abuse in a vacuum. There are a number of contextual factors that influence the decision to disclose, both cultural and interpersonal. One such factor is the level of emotional support that child victims receive from significant others in the children's lives. For children, the most significant people are most often their non-offending family members. Research shows that most children disclose sexual abuse to parents.⁴⁶ Whereas adolescents are more likely than school-aged children to disclose to peers, a significant portion of adolescents still disclose to a family member.⁴⁷ Whether children choose to disclose sexual abuse to their families may depend in part on how the children perceive their families will react to the disclosure.

Indeed, familial support predicts disclosure in individuals

43. Tina B. Goodman-Brown et al., *Why Children Tell: A Model of Children's Disclosure of Sexual Abuse*, 27 *CHILD ABUSE & NEGLECT* 525, 526 (2003).

44. Karen Saywitz et al., *Children's Memories of a Physical Examination Involving Genital Touch: Implications for Reports of Child Sexual Abuse*, 59 *J. CONSULTING & CLINICAL PSYCHOL.* 682, 689 (1991).

45. *See id.*

46. Irit Hershkowitz, Omer Lanes & Michael Lamb, *Exploring the Disclosure of Child Sexual Abuse with Alleged Victims and their Parents*, 31 *CHILD ABUSE & NEGLECT* 111, 113 (2007).

47. Rochelle Hanson et al., *Correlates of Adolescent Reports of Sexual Assault: Findings from the National Survey of Adolescents*, 8 *CHILD MALTREATMENT* 261, 266 (2003); *see* Hershkowitz et al., *supra* note 46.

who were sexually abused as children.⁴⁸ Prior to discussing familial support, there are two concepts that need to be defined. First, familial support is discussed here primarily as maternal support. Although children do at times disclose to family members other than their mothers, most of children's disclosures regarding sexual abuse are to their mothers; this is especially true for young children. Additionally, much of the research on disclosure has focused on maternal support in response to disclosure.⁴⁹ Reference to maternal support is not meant to downplay the import of support from all family members but instead to reflect the current state of the research. At times, however, researchers have examined parental support, rather than maternal support specifically.

The second definitional difficulty in discussing support is conceptualizing support and determining what support includes (e.g., belief in the child's statements, comforting the child while not over-reacting, reporting to authorities, protecting the child from further assault, and reassuring the child during prosecution). For purposes of this article, support can and does include all these things.

Parental reactions to information other than sexual abuse disclosures generally predict whether children are likely to disclose sexual abuse.⁵⁰ Hershkowitz found that children who reported that their parents normally reacted to stressful situations in a calm manner were the same children who reported that they had not delayed their disclosures (defined here as waiting a week to report the abuse).⁵¹ None of the children whose parents normally reacted with a calm demeanor delayed disclosure.⁵² Children of calmly reacting parents were also more

48. Gail Goodman, et al, *A Prospective Study of Memory for Child Sexual Abuse: New Findings Relevant to the Repressed Memory Controversy*, 14 PSYCHOL. SCI. 113, 117 (2003) [hereinafter Goodman et al., *A Prospective Study*]; see Hershkowitz et al., *supra* note 46; Louanne Lawson & Mark Chaffin, *False Negatives in Sexual Abuse Interviews*, 7 J. INTERPERSONAL VIOLENCE 532, 538 (1992); Mary Paine & David Hansen, *Factors Influencing Children to Self-Disclose Sexual Abuse*, 22 CLINICAL PSYCHOL. REV. 271, 278 (2002).

49. See, e.g., Goodman et al., *A Prospective Study*, *supra* note 48, at 114.

50. Hershkowitz et al., *supra* note 46, at 118.

51. *Id.* at 111, 118.

52. *Id.* at 118.

likely to disclose to their parents as opposed to a non-parent, to have disclosed spontaneously, and to report that their parents reacted positively.⁵³ In a study of over 4,000 Swedish high school students, both girls and boys who reported that they had not previously disclosed sexual abuse also reported that they perceived their parents as less caring than the adolescents who had disclosed sexual abuse.⁵⁴ Parental support thus plays a large role in whether children choose to disclose ongoing abuse generally.

Caregiver support also plays a role in whether children disclose sexual abuse later, for example, to a forensic interviewer.⁵⁵ In a study of child advocacy centers, children who had a supportive non-offending caregiver were more likely to disclose than those who did not have a supportive non-offending caregiver relationship.⁵⁶ Additionally, particular actions by the caregivers, such as removing the suspect or restricting suspect contact, related to whether children disclosed.⁵⁷ In interviewing adults and older adolescents about prior childhood abuse experiences, a 2003 study by Goodman found that individuals whose mothers were supportive later disclosed sexual abuse at a higher rate (80%) than participants whose mothers were not supportive (68%).⁵⁸

Correspondingly, lack of familial support also predicts recantation of sexual abuse allegations.⁵⁹ After reviewing hundreds of dependency proceeding files, the researchers discovered that approximately 23.1% of children recanted their allegations of child sexual abuse.⁶⁰ One factor in determining whether children recanted their allegations was the level of supportiveness of children's caregivers: a lower level of support

53. *Id.* at 118–19.

54. Gisela Priebe & Carl Goran Svedin, *Child Sexual Abuse is Largely Hidden From Adult Society*, 32 CHILD ABUSE & NEGLECT 1095, 1100 (2008).

55. Tonya Lippert Theodore P. Cross, Lisa Jones & Wendy Walsh, *Telling Interviewers About Sexual Abuse*, 14 CHILD MALTREATMENT 100, 110 (2009).

56. *Id.*

57. *Id.*

58. Goodman et al., *A Prospective Study*, *supra* note 48, at 116.

59. Lindsay C. Malloy, Thomas D. Lyon & Jodi A. Quas, *Filial Dependency and Recantation of Child Sexual Abuse Allegations*, 46 AMERICAN ACADEMY OF CHILD & ADOLESCENT PSYCHIATRY 162, 167 (2007).

60. *Id.* at 162.

was associated with a greater likelihood of recantation.⁶¹ Thus, caregiver support not only affects whether the initial disclosure occurs but whether that disclosure is eventually recanted.

Another socio-emotional factor that affects both children's decisions to disclose and maternal reactions to disclosure is the relationship between the perpetrator, the mother, and the child.⁶² Children who are related to the perpetrator may have fears and concerns regarding disclosure, such as loss of the relationship that is not shared by children who are unrelated to the perpetrator.⁶³ When the abuse occurs in the family, children may be afraid of punishment by the offending parent, feel personally responsible, or be concerned about harm to the familial unit that results from the disclosure.⁶⁴ This may explain why children who are sexually abused by family members are more likely to delay disclosure.⁶⁵ Mothers who consistently believe their children's disclosures of sexual abuse are less likely to be in a relationship with the perpetrator.⁶⁶ In contrast, a subset of mothers who are in dependent relationships with perpetrators will punish their children for disclosing, accusing the children of being liars or blaming the children for somehow instigating the abuse.⁶⁷

Children's relationships with non-offending caregivers may also work against children's disclosure of sexual abuse, as children may feel the need to protect those who they love. As noted by Goodman-Brown et al., children may delay disclosure out of fear of the negative consequences for others, including non-offending parents.⁶⁸ In a qualitative study of children's disclosures of sexual

61. *Id.* at 167.

62. See Carol Coohy & Patrick O'Leary, *Mothers' Protection of their Children after Discovering they have been Abused: An Information-Processing Perspective*, 32 CHILD ABUSE & NEGLECT, 245, 248 (2008); Ann N. Elliot, & Connie N. Carnes, *Reactions of Non-Offending Parents to the Sexual Abuse of the Children: A Review of the Literature*, 6 CHILD MALTREATMENT 314, 327 (2001).

63. Goodman-Brown et al., *supra* note 43, at 537.

64. Hershkowitz et al., *supra* note 46, at 113.

65. Goodman-Brown et al., *supra* note 43, at 527.

66. Coohy & O'Leary, *supra* note 62, at 255.

67. Gail S. Goodman, Elizabeth Pyle Taub, David P.H. Jones, Patricia England, Linda K. Port, Lesile Rudy & Lydia Prado, *Testifying in Criminal Court: Emotional Effects on Child Sexual Assault Victims*, 57 MONOGRAPHS OF THE SOC'Y FOR RES. IN CHILD DEV. 69, 117 (1992).

68. Goodman-Brown et al., *supra* note 43, at 537; see also Micaela

abuse, researchers found that one factor in children's hesitation to disclose was their fear of the negative implications for their mothers.⁶⁹ The children were concerned that disclosure might lead to divorce or be too much for their mothers to handle emotionally.⁷⁰ In a review of children's interviews regarding the alleged sexual abuse, approximately a third of the children stated that they expected consequences to individuals other than the perpetrator or themselves, usually mothers or siblings.⁷¹ Children who expected negative consequences for others were also more likely to delay disclosure.⁷²

However, it is unclear from the current state of research whether the level of support children receive from their families relates to their expectations of negative consequences for their families upon disclosure. For instance, children from more supportive families may be closer to family members and thus more likely to fear negatively affecting them through disclosure.⁷³ Conversely, children from more supportive families may feel more confident that their family can withstand and will unconditionally love them regardless of any negative consequences of disclosure.⁷⁴ Additionally, children's expectations of parents' reactions may be shaped in part by the victims' culture and the culture's views of disclosure and sexuality.⁷⁵ Thus, this may confound what negative consequences they expect from disclosure.

Familial support not only affects whether children disclose

Crisma et al., *Adolescents Who Experienced Sexual Abuse: Fears, Needs and Impediments to Disclosure*, 28 *CHILD ABUSE & NEGLECT* 1035, 1042 (2004).

69. Tine K. Jensen et al., *Reporting Possible Sexual Abuse: A Qualitative Study on Children's Perspectives and the Context for Disclosure*, 29 *CHILD ABUSE & NEGLECT* 1395, 1404 (2005).

70. *Id.*

71. Lindsay C. Malloy, Sonja P. Brubacher & Michael E. Lamb, *Expected Consequences of Disclosure Revealed in Investigative Interviews with Suspected Victims of Child Sexual Abuse*, 15 *APPLIED DEVELOPMENTAL SCI.* 8, 13 (2011).

72. *Id.* at 9, 15.

73. See Yuk-Chung Chan, Gladys L.T. Lam & Wan-Chaw Shae, *Children's Views on Child Abuse and Neglect: Findings from an Exploratory Study with Chinese Children in Hong Kong*, 35 *CHILD ABUSE & NEGLECT* 162, 169 (2011); Lisa Aronson Fontes & Carol Plummer, *Cultural Issues in Disclosures of Child Sexual Abuse*, 19 *J. CHILD SEXUAL ABUSE* 491, 506 (2010).

74. See Fontes & Plummer, *supra* note 73, at 507.

75. See Chan et al., *supra* note 73, at 167; Fontes & Plummer, *supra* note 73, at 513.

sexual abuse but also predicts outcomes for children who have experienced sexual abuse.⁷⁶ In fact, some researchers predict that maternal support may play a larger role in determining disclosure than the abuse factors.⁷⁷ However, child sexual abuse factors are clearly of substantial importance in predicting children's outcomes.⁷⁸ The question, however, arises whether the relation between maternal support and outcomes is due to the fact that mothers who provide more maternal support provide a more nurturing environment for children, separate from the sexual abuse, or whether there is something specific about the mothers' reaction to the sexual abuse that helps children. Most likely, both factors play a role.

IV. CHILDREN'S EYEWITNESS MEMORY DEVELOPMENT

Once children have disclosed abuse, the children's memory for the assaults becomes crucial if the case is to be prosecuted.⁷⁹ Developmental scientists know a great deal about normal memory development, at least in non-maltreated children. There is a plethora of scientific studies on the development of basic memory abilities from birth on.⁸⁰ In these studies, children are exposed to stimuli (e.g., pictures, stories, videotapes, real life events) and then their memory is tested after various delays. Because the researchers know exactly what the children saw, the children's memory accuracy can be scientifically examined with precision. Many of these studies are geared toward testing theoretical issues about mechanisms that underlie developmental change, involve memory for mundane to-be-remembered information, expose children to briefly seen one-time events and unfamiliar people,

76. Elliot & Carnes, *supra* note 62, at 327.

77. Goodman et al., *A Prospective Study*, *supra* note 49, at 114.

78. David M. Fergusson, Geraldine F.H. McLeod & L. John Horwood, *Childhood Sexual Abuse and Adult Developmental Outcomes: Findings from a 30-Year Longitudinal Study in New Zealand*, 37 CHILD ABUSE & NEGLECT 644, 672 (2013).

79. C.J. Brainerd, *Developmental Reversals in False Memory: A New Look at the Reliability of Children's Evidence*, 22 CURRENT DIRECTIONS IN PSYCHOL. SCI. 335, 335 (2013).

80. See generally PATRICIA J. BAUER & ROBYN FIVUSH, THE WILEY BLACKWELL HANDBOOK ON THE DEVELOPMENT OF CHILDREN'S MEMORY (2013) (providing a review of scholarly articles regarding the development of memory in infants and children).

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and lack any personal significance to the children's lives.⁸¹

Fortunately, a growing body of research is now devoted to children's eyewitness memory.⁸² In many of these studies, children's memory accuracy and resistance to false suggestions is examined about events of negative emotional impact, employing questioning techniques that mimic those used in forensic situations.⁸³ Still, in these "analogue" studies, it is difficult to capture the emotion and consequence involved in actual child sexual abuse experiences and investigations. That said, a subset of studies examine memory accuracy in child victims concerning their sexual victimization. These studies reveal that, similar to disclosure, both cognitive and socio-emotional factors play a role in children's eyewitness memory.

V. COGNITIVE FACTORS IN CHILDREN'S EYEWITNESS MEMORY AND SUGGESTIBILITY

Regarding normal memory development, it is well known that, on average, children's memory reports become increasingly accurate and complete with age. For example, when two-and-a-half- or three-year-olds' performance is compared to four- to five-year-olds' performance and when both age groups' performance is compared to that of adults, the younger children recall less information on their own (e.g., when asked free recall questions, such as "Tell me what happened?"), answer yes-no and option-posing questions less accurately (e.g., when asked "Did she have blue eyes?" and "Were her eyes blue, brown, or green?," respectively), and show greater suggestibility when asked falsely leading tag questions (e.g., "He touched your leg, didn't he?" when in fact, he did not) or falsely leading questions that presuppose inaccurate information (e.g., "What did he do after he touched your leg?", when he had not touched the child's leg).⁸⁴ Children,

81. See, e.g., Patricia H. Miller, *The History of Memory Development Research: Remembering our Roots*, in *THE WILEY-BLACKWELL HANDBOOK ON THE DEVELOPMENT OF CHILDREN'S MEMORY* 19, 31 (Patricia J. Bauer & Robyn Fivush eds., 2013).

82. See, e.g., Debra Ann Poole & D. Stephen Lindsay, *Children's Eyewitness Reports after Exposure to Misinformation from Parents*, 7 *J. EXPERIMENTAL PSYCHOL.: APPLIED* 27, 49 (2001).

83. *Id.*

84. See David F. Bjorklund et al., *Social Demand Characteristics in Children's and Adult's Eyewitness Memory and Suggestibility: The Effect of*

especially young ones, often need more prompting and cuing to retrieve information that they have in memory but fail to retrieve on their own.⁸⁵ However, in the forensic context, such prompting and cuing is criticized as leading.⁸⁶ And although prompting and cuing typically result in increased accuracy, they can also contribute to suggestibility and memory errors, particularly in young children.⁸⁷ Many studies show that younger children, on average, are significantly more vulnerable to leading and misleading questions, and misinformation effects generally, than are older children.⁸⁸ Still, children as young as four- or five-years of age can often resist leading questions about negative, taboo acts, such as being hit or having their clothes removed.⁸⁹

There are several cognitive factors that contribute to improvements of memory and reduced suggestibility with age. These cognitive factors include advances in biological maturation (e.g., hippocampal and prefrontal cortex development), language development, knowledge base, recollective processes, source monitoring, and memory strategies.⁹⁰ A number of cognitive theories specifically attempt to account for children's memory

Different Interviewers on Free Recall and Recognition, 14 APPLIED COGNITIVE PSYCHOL. 421, 422 (2000); Peter A. Orenstein, Lynne Baker-Ward, Betty N. Gordon & Kathy Ann Merritt, *Children's Memory for Medical Experiences: Implications for Testimony*, 11 APPLIED COGNITIVE PSYCHOL. S98, S99–S100 (1997); Derek W.W. Price & Gail S. Goodman, *Visiting the Wizard: Children's Memory for a Recurring Event*, 61 CHILD DEVELOPMENT 664, 676 (1990); Gail S. Goodman & Rebecca S. Reed, *Age Differences in Eyewitness Testimony*, 10 L. & HUM. BEHAV. 317, 327–28 (1986).

85. Price & Goodman, *supra* note 84, at 676.

86. Stephen J. Ceci & Maggie Bruck, *Suggestibility of the Child Witness: A Historical Review and Synthesis*, 113 PSYCHOL. BULL. 403, 408 (1993).

87. *Id.* at 410.

88. *But see* Brainerd, *supra* note 79, at 340; Stephen J. Ceci, Paul B. Papierno & Sarah Kulkofsky, *Representational Constraints on Children's Suggestibility*, 18 PSYCHOL. SCI. 503, 508 (2007).

89. *See, e.g.*, Leslie Rudy & Gail S. Goodman, *Effects of Participation on Children's Reports: Implications for Children's Testimony*, 27 DEVELOPMENTAL PSYCHOL. 527, 535 (1991).

90. *See, e.g.*, Bjorklund et al., *supra* note 84, at 429–30; Mark L. Howe, *The Adaptive Nature of Memory and its Illusions*, 20 CURRENT DIRECTIONS IN PSYCHOL. SCI. 312, 312 (2011); Pedro M. Paz-Alonso et al., *Neurodevelopmental Correlates of True and False Recognition*, 18 CEREBRAL CORTEX 2008, 2215 (2008); Robyn Fivush & Katherine Nelson, *Culture and Language in the Emergence of Autobiographical Memory*, 15 PSYCHOL. SCI. 573, 574 (2004).

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errors and suggestibility, which are of considerable importance in legal cases. The Source Monitoring Framework, proposed by Marcia Johnson and her colleagues, concerns the ability to differentiate the sources of information in memory.⁹¹ For example, when a child witnesses an event but then is told something else happened (misinformation), the child needs to monitor what information is in memory based on actually witnessing the event versus later being told about it.⁹² To the extent that children have greater difficulty than adults in monitoring the sources of their memories, they may mistake information suggested to them for information obtained from actual experience.⁹³ Weak memory traces also contribute to increased suggestibility, because weak memory traces may be easier to overwrite and because people have less confidence in weak memories.⁹⁴ According to Brainerd and Reyna's Fuzzy Trace Theory ("FTT"), two distinct types of memory exist in parallel with each other: verbatim (a literal, surface-level memory trace) and gist (a memory trace concerning the meaning of an event).⁹⁵ Verbatim memories fade or disintegrate relatively quickly, whereas gist memories are very durable.⁹⁶ According to FTT, false memories occur primarily because gist memories are falsely ascribed to experience (verbatim memory is needed but the person relies on gist).⁹⁷ False memories can also occur due to retrieval of the wrong verbatim memory (sources, smells, images, emotions, etc. become disassociated over time and re-associated erroneously, especially if selectively rehearsed).⁹⁸

Of particular importance to the study of child witnesses is children's memory and suggestibility about stressful, negative events. One approach to investigating children's memory and suggestibility for stressful, negative experiences has been to take

91. Marcia K. Johnson, Shahin Hashtroudi & D. Stephen Lindsay, *Source Monitoring*, 114 *PSYCHOL. BULL.* 3, 3 (1993).

92. *See, e.g.*, Poole & Lindsay, *supra* note 82.

93. *See id.*

94. Ceci & Bruck, *supra* note 86, at 412.

95. C.J. Brainerd, V.F. Reyna & S.J. Ceci, *Developmental Reversals in False Memory: A Review of Data and Theory*, 134 *PSYCHOL. BULL.* 343, 347 (2008).

96. *Id.* at 348.

97. *Id.*

98. *Id.*

advantage of doctor-ordered medical procedures, using such experiences as the to-be-remembered events (these are stressful events children take part in for medical purposes regardless of the eyewitness memory research), and then later conducting forensic-style memory interviews.⁹⁹ The medical procedures studied have included highly stressful experiences (e.g., emergency room visits, surgery, cancer treatments, and urethral catheterization).¹⁰⁰ These doctor-ordered stressful medical experiences involve body touch, pain, and distress. The later memory interviews permit researchers to determine children's abilities to recount such events and resist misleading questioning about stressful experiences.

The findings from basic memory research regarding age differences often replicate in such studies, although memory for stressful experiences is typically more robust and long lasting than is memory for less stressful ones,¹⁰¹ and children's resistance to suggestion is often stronger for central compared to peripheral features of such events.¹⁰² These findings are important in regard to legal cases and can influence decisions regarding the veracity and suggestibility of children's testimony. However, whereas

99. See, e.g., Elain Burgwyn-Bailes et al., *Children's Memory for Emergency Medical Treatment after One Year: The Impact of Individual Difference Variables on Recall and Suggestibility*, 15 APPLIED COGNITIVE PSYCHOL. S25, S28-S30 (2001) (looking at children's memory of surgeries); Edith Chen et al., *Children's Memories for Painful Cancer Treatment Procedures: Implications for Distress*, 71 CHILD DEV. 933, 935 (2000) (looking at children's memory of cancer treatments); Gail S. Goodman et al., *Children's Reactions to and Memory for a Stressful Event: Influences of Age, Anatomical Dolls, Knowledge, and Parental Attachment*, 1 APPLIED DEVELOPMENTAL SCI. 54, 57 (1997) (looking at children's memories of urethral catheterization) [hereinafter Goodman et al., *Children's Reactions*]; Carol Peterson & Michael Bell, *Children's Memory for Traumatic Injury*, 67 CHILD DEV. 3045, 3048 (1996) (looking at children's memory of emergency room visits).

100. See, e.g., Burgwyn-Bailes et al., *supra* note 99; Chen et al., *supra* note 99; Goodman et al., *Children's Reactions*, *supra* note 99; Peterson & Bell, *supra* note 99.

101. See, e.g., Deirdre A. Brown et al., *Children's Recall of Medical Experiences: The Impact of Stress*, 23 CHILD ABUSE & NEGLECT 209, 214 (1999); see Orenstein et al., *supra* note 84, at S93.

102. See, e.g., Sven-Ake Christianson, *Emotional Stress and Eyewitness Memory: A Critical Review*, 112 PSYCHOL. BULL. 284, 287 (1992); Gail S. Goodman et al., *Children's Memory for Stressful Events*, 37 MERRILL-PALMER Q. 109, 145 (1991).

these studies report children's performance on average, judges and juries must make decisions about individual children before them. Potentially important individual differences exist in understanding of stressful events and willingness to think about and discuss traumatic material, which can affect the degree to which the event is encoded, stored, and/or retrieved.¹⁰³ Similarly, in child sexual abuse cases, there are also individual differences in children's understanding of the significance of the abuse as well as in their willingness to think about or talk about the sexual incidents.¹⁰⁴

Nevertheless, although most children, at least by the age of three or four years old, are cognitively able to recall negative past events with considerable accuracy and some detail, other children, at times, are quite suggestible and vulnerable to misinformation.¹⁰⁵ For example, false affirmations from young children can result when they are asked misleading questions, such as "All the other children said he kissed them. Didn't he kiss you?" when in fact the child was not kissed.¹⁰⁶ Debate ensues about whether misinformation actually alters children's memory or only their reports of events through social influence and acquiescence. If autobiographical memory itself has changed and there is no chance for the child to recover an accurate memory, the courts would be concerned about permanent taint. Although actual memory change may occur in some children, for other children, misinformation and suggestibility effects appear to largely dissolve over time.¹⁰⁷ In fact, surprisingly, several studies

103. See Goodman et al., *Children's Reactions*, *supra* note 99, at 73.

104. Robin S. Edelstein et al., *Individual Differences in Emotional Memory: Adult Attachment and Long-Term Memory for Child Sex Abuse*, 31 *PERSONALITY & SOC. PSYCHOL. BULL.* 1537, 1539 (2005); see Richard J. McNally & Elke Geraerts, *A New Solution to the Recovered Memory Debate*, 4 *PERSPECTIVES ON PSYCHOL. SCI.* 126, 132 (2009).

105. Stephen J. Ceci et al., *The Possible Role of Source Misattributions in the Creation of False Beliefs Among Preschoolers*, 42 *THE INT'L J. OF CLINICAL & EXPERIMENTAL HYPNOSIS* 304, 315 (1994); Poole & Lindsay, *supra* note 82, at 46; Sena Garven et al., *More Than Suggestion: The Effect of Interviewing Techniques From the McMartin Preschool Case*, 83 *J. APPLIED PSYCHOL.* 347, 354 (1998).

106. See Poole & Lindsay, *supra* note 82.

107. Mary Lyn Huffman et al., "Are False Memories Permanent?": *An Investigation of Long-Term Effects of Source Misattributions*, 6 *CONSCIOUSNESS & COGNITION* 482, 488 (1997).

reveal greater accuracy in later interviews (e.g., after a week or even a year delay) for children exposed to misinformation in an early interview.¹⁰⁸ This effect is particularly likely if the misinformation was provided relatively soon after the event, when the children's memory was still relatively strong.¹⁰⁹ However, there are substantial individual differences at any age in terms of susceptibility to suggestion that also need to be considered.¹¹⁰ Moreover, suggestibility is typically not a trait, and thus can vary with the specifics of a situation.¹¹¹

Although susceptibility to misleading information is not considered a trait and can vary from one situation to the next, children's own characteristics can have a robust influence on suggestibility.¹¹² When three- to seven-year-old children were interviewed in a free question format instead of with a scripted interview, the best predictor of children's future responses were the information they provided earlier in the interview.¹¹³ In other words, one could predict whether a child would acquiesce or deny in response to an interviewer's question by examining the child's previous response, and ignoring all interviewer input.¹¹⁴ Thus, it is possible that, even more than the interviewers' biases, leading questions, or false suggestions, the children's characteristics,

108. See, e.g., Gail S. Goodman et al., *Children's Testimony About a Stressful Event: Improving Children's Reports*, 1 J. NARRATIVE & LIFE HISTORY 69, 91 (1991) [hereinafter Goodman et al., *Children's Testimony*]; Carole Peterson et al., *Providing Misleading and Reinstatement Information a Year After it Happened: Effects on Long-Term Memory*, 12 MEMORY 1, 9 (2004); Jodi A. Quas et al., *Developmental Differences in the Effects of Repeated Interviews and Interviewer Bias on Young Children's Event Memory and False Reports*, 43 DEVELOPMENTAL PSYCHOL. 823, 833 (2007) [hereinafter Quas et al., *Developmental Differences*].

109. Quas et al., *Developmental Differences*, *supra* note 108, at 834.

110. Maggie Bruck & Laura Melnyk, *Individual Differences in Children's Suggestibility: A Review and Synthesis*, 18 APPLIED COGNITIVE PSYCHOL. 947, 989 (2004).

111. But see Matthew H. Scullin et al., *Measurement of Individual Differences in Children's Suggestibility Across Situations*, 8 J. EXPERIMENTAL PSYCHOL.: APPLIED 233, 235 (2002).

112. Livia L. Gilstrap & Stephen J. Ceci, *Reconceptualizing Children's Suggestibility: Bidirectional Temporal Properties*, 76 CHILD DEV. 40, 49 (2005); Annika Melinder et al., *Children's Eyewitness Memory: A Comparison of Two Interviewing Strategies as Realized by Forensic Professionals*, 105 J. OF EXPERIMENTAL CHILD PSYCHOL. 156, 49 (2010).

113. See, e.g., Gilstrap & Ceci, *supra* note 112, at 49.

114. *Id.*

molded by cognitive and socio-emotional factors, often drive the interviewer's questioning and the children's responses.¹¹⁵

A. *Children's False Memory*

Children's "false memory" for entire events is often a concern in child sexual abuse cases. Classically, the term "false memory" refers to false reports of entire events (e.g., being lost in a mall as a child) that were not experienced.¹¹⁶ Both children and adults can have false memories, although false memories are less likely for distinctive, personally significant, taboo events, such as obtaining an enema, than for more mundane events such as being lost in a mall as a child.¹¹⁷

In one false memory study with children, conducted within a single interview session, three- and five-year-old children were repeatedly questioned about several experienced and several non-experienced events, using a leading interview style such that the interviewers would not take "No" for an answer.¹¹⁸ For example, if a girl in the study was asked if a boy had ever taken her pants down in front of a store (a false event according to the girl's mother), and the child said "No," the interviewer then asked "Who was with you when the boy took your pants down in front of that store?"¹¹⁹ Thus, even though the child had denied experiencing the event initially, the interviewer pressed on to ask more about the event as if it had happened. On average, it took approximately three such questions before the youngest children affirmed the false event; for five-year-olds, it took six questions on average.¹²⁰ Overall, children were less susceptible to suggestion

115. *See id.*

116. Elizabeth F. Loftus & Jacqueline E. Pickrell, *The Formation of False Memories*, 25 *PSYCHIATRIC ANNALS* 720, 720 (1995).

117. Katyh Pezdek et al., *Planting False Childhood Memoires: The Role of Event Plausibility*, 8 *PSYCHOL. SCI.* 437, 441 (1997); Kathy Pezdek & Danelle Hodge, *Planting False Childhood Memories in Children: The Role of Event Plausibility*, 70 *CHILD DEV.* 887, 894 (1999); *but see* Bette L. Bottoms et al., *An Analysis of Ritualistic and Religion-Related Child Abuse Allegations*, 20 *L. & HUM. BEHAV.* 1, 31 (1996).

118. Stephanie D. Block, Donna Shestowsky, Daisy A. Segovia, Gail S. Goodman, Jennifer M. Schaaf & Kristin W. Alexander, *"That Never Happened": Adults' Discernment of Children's True and False Memory Reports*, 36 *L. & HUM. BEHAV.*, 365 (2012).

119. *Id.*

120. *Id.*

about negative than positive events.¹²¹ Because most forensic interviews concern negative events, it should be noted that the children showed less “false memory” about such incidents. This is consistent with earlier findings that children, at least by the age of four years if not before, were particularly resistant to negative abuse-related suggestions, such as being hit or having their clothes removed when that had not occurred.¹²² This is not to say that children are immune to suggestion about such acts, however, especially when they are very young.¹²³ Interviewers need to consider children’s possible false memory formation in conducting their interviews.

B. Socio-emotional factors and children’s eyewitness memory, suggestibility, and false memory

Like most complex psychological processes, the accuracy and completeness of children’s eyewitness reports are multiply determined. Socio-emotional factors play an important role in children’s and adults’ memory reports, including in their memory errors, suggestibility, and false memory. Some children (and some adults) are particularly likely—more so under certain conditions—to comply with leading questioning.¹²⁴ For example, regardless of age, some individuals want to please the interviewer, whereas others may be overly suspicious of an interviewer’s implications and leading questions. There can be substantial rewards—including parents’ approval, therapists’ “cures,” or interviewers’ cessation of prolonged questioning—for children to accept parents’, therapists’, or interviewers’ versions of the truth, an acceptance that could lead to a false memory.

An important socio-emotional factor affecting children’s eyewitness memory performance is the social support they receive after a negative event and during an interview. Children who experience stressful events later evince better memory for what

121. *Id.*

122. *See, e.g.,* Goodman et al., *Children’s Testimony*, *supra* note 108, at 93–94; Rudy & Goodman, *supra* note 89.

123. *See, e.g.,* Gail S. Goodman & Christine Aman, *Children’s Use of Anatomically Detailed Dolls to Recount an Event*, 61 *CHILD DEV.* 1859, 1869 (1990) (young three-year-olds were more susceptible to misleading suggestions).

124. *See, e.g.,* Leander, *Police Interviews*, *supra* note 35, at 195–96.

happened when they have supportive parents who help comfort the children and talk to the children about the incident (assuming the parent is not trying to mislead or “brainwash” them), that is, when the children have familial support.¹²⁵

During a memory interview, social support is also vital. To determine the role of social support, researchers have manipulated whether the interviewer is a high-support interviewer, who does such things as builds rapport, maintains eye contact, and provides positive feedback, or a low-support interviewer, who questions children in a serious, cold manner, does not build sufficient rapport, talks in a monotone voice, and does not smile.¹²⁶ Children typically provide more information and make fewer errors to yes-no, short-answer, and misleading questions when they are interviewed in a supportive as opposed to an unsupportive manner.¹²⁷ Thus, children show more accurate memory and greater resistance to false suggestion when the interviewer is warm and friendly.¹²⁸ Fortunately, rapport building and a child-friendly, yet neutral, demeanor have been incorporated into child forensic interview protocols, such as the National Institute of Child Health and Human Development (NICHD) Investigative Interview Protocol.¹²⁹

A warm, friendly interviewer who can build sufficient rapport, and possibly meet with the child multiple times, may be particularly important for children who are reluctant to

125. Goodman et al., *Children's Reactions*, *supra* note 99, at 71.

126. Suzanne L. Davis & Bette L. Bottoms, *Effects of Social Support on Children's Eyewitness Reports: A Test of the Underlying Mechanism*, 26 L. & HUM. BEHAV. 185, 208 (2002).

127. Jodi A. Quas et al., *Physiological Reactivity, Social Support, and Memory in Early Childhood*, 75 CHILD DEV. 797, 800 (2004) [hereinafter Quas et al., *Physiological Reactivity*].

128. Cathleen A. Carter et al., *Linguistic and Socioemotional Influences on the Accuracy of Children's Reports*, 20 LAW & HUM. BEHAV. 335, 350 (1996); Davis & Bottoms, *supra* note 126; Goodman et al., *Children's Testimony*, *supra* note 108, at 91–92; Quas et al., *Physiological Reactivity*, *supra* note 127, at 807-08; Jodi A. Quas et al., *Suggestibility, Social Support, and Memory for a Novel Experience in Young Children*, 91 J. EXPERIMENTAL PSYCHOL. 315, 319 (2005).

129. See, e.g., Michael E. Lamb et al., *A Structured Forensic Interview Protocol Improves the Quality and Informativeness of Investigative Interviews with Children: A Review of Research Using the NICHD Investigative Interview Protocol*, 31 CHILD ABUSE & NEGLECT 1201, 1204 (2007).

disclose.¹³⁰ Children who are reluctant to disclose (e.g., try to hide a parental transgression) may resist saying what happened even in the face of leading questions, and thus rapport building may be key.¹³¹ Social factors such as these can affect children's memory and suggestibility, overlaying the basic cognitive abilities that are advancing with development.

In fact, while at the same time that memory development supports more complete and accurate accounts, advances in social understanding may dampen children's willingness to report, because the children increasingly realize the social implications of their disclosures and testimony, for example, about genital touch and sexual acts.¹³² Moreover, although age trends based on cognitive factors may be strong on average, individual differences in social development (as well as in memory development) mean that at any age, there is considerable variability in performance.

C. Conclusion

The complex interaction between cognitive and socio-emotional development (better memory along with better understanding of the ramifications of disclosure and the individual differences between children) makes it difficult to predict, in an actual legal case, a specific child's eyewitness memory accuracy with precision.¹³³ To add to the complexity, there are situations in which the typical age trends are reversed; in such situations younger children are actually more accurate than older children and adults.¹³⁴ As a result of this complexity, psychological science is not currently such that we can determine

130. *Id.* at 1211.

131. Bette L. Bottoms et al., *Understanding Children's Use of Secrecy in the Context of Eyewitness Reports*, 26 L. & HUM. BEHAV. 285, 307 (2002).

132. Leander, *Dissertation*, *supra* note 25, at 39; Karen J. Saywitz et al., *supra* note 44, at 689.

133. *Cf.* Gail S. Goodman et al., *Children's Concerns and Memory: Issues of Ecological Validity in the Study of Children's Eyewitness Memory*, in KNOWING AND REMEMBERING IN YOUNG CHILDREN 249, 256–57 (Robyn Fivush & Judith A. Hudson eds., 1990) [hereinafter Goodman et al., *Issues of Ecological Validity*]; Kelly McWilliams et al., *Children's Memory for Their Mother's Murder: Accuracy, Suggestibility, and Resistance to Suggestion*, 21 MEMORY 591, 596–97 (2013); Miller, *supra* note 81, at 19, 24–25, 28–29, 35–37.

134. *See, e.g.*, Brainerd, *supra* note 79, at 335, 338 table 2, 340.

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the “ultimate issue” as to whether a specific witness is right or wrong in a legal case.¹³⁵

However, research on children’s eyewitness memory development makes it clear that both cognitive and social factors influence performance.¹³⁶ As a result, although memory and suggestibility have some predictable features with age, a significant amount of variation is also evident.¹³⁷ As Miller put it: “Children have poor memory abilities. Children have very good memory abilities . . . both of these assertions about memory, even in adults, are true.”¹³⁸ This paradox is also true about memory for events that are highly emotional, shocking, and distressing.¹³⁹ Nevertheless, when an event has high personal significance, is distinctive, or is traumatic (e.g., witnessing a murder), children, like adults, are more likely to remember it than if the event has little or no life importance.¹⁴⁰ However, social factors, in addition to cognitive factors alone, may play a particularly important role in memory for such events.¹⁴¹

Although eyewitness memory in non-maltreated samples is of great interest, memory in maltreated children is particularly on point. We thus turn to a review of some of the key extant studies concerning eyewitness memory in maltreated children.

VI. MALTREATMENT AND MEMORY

Given the importance of children’s reports in abuse investigations, researchers have examined eyewitness memory in children with histories of exposure to family violence or childhood assaults, including exposure to child sexual abuse. In many ways,

135. Cf. Goodman et al., *Issues of Ecological Validity*, *supra* note 133, at 256–57; McWilliams et al., *supra* note 133, at 596–97; Miller, *supra* note 81, at 35–37.

136. See, e.g., Miller, *supra* note 81, at 19, 24–25, 28–29, 35–37.

137. *Id.* at 19, 24–25, 35–37.

138. *Id.* at 19.

139. *Id.* at 35–37.

140. See Goodman et al., *A Prospective Study*, *supra* note 48; Goodman et al., *Issues of Ecological Validity*, *supra* note 133, at 249–56; McWilliams et al., *supra* note 133, at 593–94; Carole Peterson, *Children’s Autobiographical Memories Across the Years: Forensic Implications of Childhood Amnesia and Eyewitness Memory for Stressful Events*, 32 *DEVELOPMENTAL REV.* 287, 304 (2012).

141. Miller, *supra* note 81, at 19, 24–25, 35–37; Peterson, *supra* note 140, at 287–94.

normal memory functioning is evident in such children.¹⁴² For example, maltreated children can remember prior experiences quite well, including those that were stressful.¹⁴³ In fact, children and adults with maltreatment histories seem to attend to and remember trauma-related information with, if anything, particular clarity.¹⁴⁴ Yet individual differences, again influenced by cognitive and socio-emotional factors, play important roles in maltreated children's memory.¹⁴⁵

Note that, as far as we know, there are no published scientific studies of "false memory" for entire events in children with maltreatment histories. Research on maltreated children's "false memories" for semantic associates of word lists exists, but the generalizability of such findings to memory for criminal events is arguably limited.¹⁴⁶ Regarding the extant eyewitness memory studies that involve children with maltreatment histories, as would be expected, again both cognitive and socio-emotional factors are operative.¹⁴⁷

A. *Cognitive Factors in Maltreated Children's Eyewitness Memory and Suggestibility*

Bidrose and Goodman took advantage of a legal case in which the main perpetrator documented child sexual abuse and

142. Mark L. Howe, Dante Cicchetti & Sheree L. Toth, *Children's Basic Memory Processes, Stress and Maltreatment*, 18 DEV. & PSYCHOPATHOLOGY 759, 759–760, 764, 766 (2006).

143. See generally *id.*

144. Goodman et al., *A Perspective Study*, *supra* note 48, at 117; RICHARD J. McNALLY, REMEMBERING TRAUMA 48–62 (2003); see also Allison E. Dubner & Robert W. Motta, *Sexually and Physically Abused Foster Care Children and Posttraumatic Stress Disorder*, 67 J. CONSULTING & CLINICAL PSYCHOLOGY, 367, 367 (1999); Scott R. Vrana, Allison Roodman & Jean C. Beckham, *Selective Processing of Trauma-Relevant Words in Posttraumatic Stress Disorder*, 9 J. ANXIETY DISORDERS 515, 515–16, 526–29 (1995) (finding that Vietnam veterans with posttraumatic stress disorder responded slower to, and thus may have attended more to, trauma-related words than veterans without the same diagnosis).

145. Miller, *supra* note 81, at 19, 24–25, 35–37; Peterson, *supra* note 140, at 287–94.

146. See, e.g., Gail S. Goodman et al., *False Memory for Trauma-Related Deese-Roediger-McDermott Lists in Adolescents and Adults with Histories of Child Sexual Abuse*, 23 DEV. & PSYCHOPATHOLOGY 423, 423 (2011); Howe, *supra* note 142, at 765.

147. Goodman et al., *A Perspective Study*, *supra* note 48, at 117.

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transcripts existed of the children's statements to the police and courts.¹⁴⁸ The researchers examined eight- to fifteen-year-old children's memory for the sexual abuse they suffered at the hands of a "sex ring" of men, among them an aging paraplegic man confined to a wheel chair who had organized the ring (the main perpetrator), a man in his eighties, and younger men.¹⁴⁹ The children were photographed and audiotaped while being sexually molested, raped, and prostituted; for several of the children, the abuse occurred repeatedly over many weeks.¹⁵⁰ The photographs and audio-recordings, confiscated by the police, were compared to statements made by the girls in police interviews and legal depositions.¹⁵¹ The children reported 85.6% of the alleged sexual acts and 82.5% of the alleged preparatory acts accurately.¹⁵² Of interest, there were no significant age differences associated with the children's accuracy about the sexual acts.¹⁵³ With respect to memory errors, victims showed a relatively high number of omissions (i.e., 39%).¹⁵⁴ It is unclear if these omission errors reflected forgetting, temporary inability of retrieval, or conscious decisions not to report certain information for motivational reasons (e.g., embarrassment).¹⁵⁵ The proportion of unsupported allegations (i.e., 21.1%) was relatively low compared to omission errors, and over half of the former were of acts considered by the researchers as highly likely to have occurred, but not documented by perpetrator's recordings.¹⁵⁶ These findings indicate that maltreated children can provide largely accurate, detailed, and reliable testimony about their victimization.¹⁵⁷

Studies of maltreated children's memory in legal cases where

148. Sue Bidrose & Gail S. Goodman, *Testimony and Evidence: A Scientific Case Study of Memory for Child Sexual Abuse*, 14 APPLIED COGNITIVE PSYCHOL. 197, 197–202 (2000).

149. *Id.*

150. *Id.*

151. *Id.*

152. *Id.*

153. *Id.*

154. *Id.* at 209.

155. *See id.*

156. *Id.* at 205, 208.

157. Bidrose & Goodman, *supra* note 148, at 211–12; *see also* David P.H. Jones & Richard D. Krugman, *Can A Three-Year-Old Child Bear Witness to Her Sexual Assault and Attempted Murder?*, 10 CHILD ABUSE & NEGLECT 253, 257 (1986).

documentation of the abuse exists are relatively rare.¹⁵⁸ A more common approach to research on eyewitness memory in children with maltreatment histories is to examine the children's memory for events documented by researchers, rather than perpetrators.¹⁵⁹ Again, doctor-ordered medical examinations provide researchers with an opportunity to study maltreated children's memory for stressful events, including genital touch, as well as to study their suggestibility and tendency to make false reports.¹⁶⁰ An advantage of this approach is that both cognitive and socio-emotional factors can be examined.¹⁶¹

In one study concerning maltreated children's memory, three- to seventeen-year-olds (about 70% of whom were African American) were interviewed about details of a medical examination that included anogenital touch.¹⁶² The examination took place within the context of a child abuse assessment program, wherein the doctors conducted the medical examination to collect evidence of possible child sexual abuse.¹⁶³ Because the anogenital examinations were standardized and documented by research assistants, the accuracy of children's memory could be verified.¹⁶⁴ Typical age-patterns emerged: older children provided more details and answered specific questions more accurately compared to younger children.¹⁶⁵ Children rarely erred when asked abuse-related misleading questions (e.g., whether the doctor had undressed the child when in fact the doctor had not), as is often observed with non-maltreated children, at least when they are asked one-time abuse-related misleading questions.¹⁶⁶ Still, the younger maltreated children (e.g., three-year-olds) were more

158. See generally Paz-Alonzo et al., *supra* note 25; see also MCNALLY, *supra* note 144, at 58–62.

159. See *id.*

160. See *id.*

161. See *id.*

162. Mitchell L. Eisen et al., *Memory and Suggestibility in Maltreated Children: Age, Stress Arousal, Dissociation, and Psychopathology*, 83 J. EXPERIMENTAL CHILD PSYCHOL. 167, 167, 176 (2002) [hereinafter Eisen et al. 2002].

163. *Id.* at 174–75.

164. See *id.* at 184.

165. *Id.* at 186–88.

166. See Eisen et al. 2002, *supra* note 162, at 186–87; see also Rudy & Goodman, *supra* note 89, at 527, 533.

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susceptible to such errors than were the older children.¹⁶⁷ The relatively low error rates may reflect children's relatively stronger memory for what actually occurred and greater resistance to suggestions involving unpleasant (e.g., embarrassing, taboo) rather than neutral or positive acts.¹⁶⁸ Regarding type of maltreatment, generally, children with different forms of substantiated abuse performed comparably (e.g., sexual abuse victims compared with physical abuse victims) and similarly to a control group of children with no known history of child maltreatment.¹⁶⁹ Eisen and colleagues also examined relations between children's eyewitness memory accuracy and intelligence scores.¹⁷⁰ With age controlled, lower intelligence scores predicted less accurate memory.¹⁷¹ Such relations often emerge when children who score quite low in intelligence are included in studies, as they were in the 2002 Eisen project.¹⁷²

Eisen et al. conducted a second study of maltreated children's eyewitness memory with a new cohort of children from the child maltreatment assessment program tapped earlier.¹⁷³ The age and intelligence score trends replicated.¹⁷⁴ Of particular interest, in this new study, child sexual abuse victims answered questions about the anogenital examination more accurately than did the other maltreated children or children with no known abuse histories.¹⁷⁵ This finding joined that of previous research indicating a heightened focus on trauma-related information by

167. See Eisen et al. 2002, *supra* note 162, at 186–88, 197–200.

168. See Eisen et al. 2002, *supra* note 162, at 190, 200; see also Maggie Bruck & Stephen J. Ceci, *The Suggestibility of Children's Memory*, 50 ANN. REV. PSYCHOL. 419, 431 (1999); Karen J. Saywitz et al., *supra* note 44, at 682; Jennifer M. Schaaf, Kristen Weede Alexander & Gail S. Goodman, *Children's False Memory and True Disclosure in the Face of Repeated Questions*, 100 J. EXPERIMENTAL CHILD PSYCHOL. 157, 176–77 (2008); but see Henry Otgaar, Ingrid Candell & Harald Merckelbach, *Children's False Memories: Easier to Elicit for a Negative than for a Neutral Event*, 128 ACTA PSYCHOLOGICA 350, 350 (2008).

169. See Eisen et al. 2002, *supra* note 162, at 205.

170. *Id.* at 194–95, 203.

171. *Id.*

172. *Id.*

173. Mitchell L. Eisen et al., *Maltreated Children's Memory: Accuracy, Suggestibility, and Psychopathology*, 43 DEVELOPMENTAL PSYCHOL. 1275, 1278 (2007) [hereinafter Eisen et al. 2007].

174. See *id.* at 1282, 1289–90, 1292.

175. See *id.* at 1289, 1292.

children exposed to maltreatment.¹⁷⁶ This heightened focus may reflect greater knowledge about trauma-related information.¹⁷⁷ However, it may also reflect socio-emotional factors associated with traumatization.¹⁷⁸

B. Socio-Emotional Factors in Maltreated Children's Eyewitness Memory and Suggestibility

An important socio-emotional factor potentially affecting maltreated (and otherwise traumatized) children's eyewitness memory and suggestibility is trauma-related psychopathology.¹⁷⁹ It is concerning that, at times, trauma symptoms that are likely caused by child abuse are then used to try to discredit the children's accuracy as witnesses.¹⁸⁰ For example, it might be claimed that memory is less accurate in victims with post-traumatic stress disorder (PTSD) or high dissociative tendencies.¹⁸¹ In fact, findings on this topic are mixed with trauma reactions associated with greater memory errors and with fewer memory errors, depending on the study.¹⁸²

Global measures of maltreated children's mental health problems have been associated with greater eyewitness memory error in several studies.¹⁸³ For example, in 2002 Eisen reported that poor "global adaptive functioning" as rated by clinicians was associated with greater suggestibility in response to misleading questions about an anogenital examination.¹⁸⁴ McWilliams, Harris, and Goodman reported that, in a sample of nine- to

176. Eisen et al. 2007, *supra* note 173, at 1276–77; *see also* Sharon M. Katz et al., *The Accuracy of Children's Reports with Anatomically Correct Dolls*, 16 DEVELOPMENTAL & BEHAV. PEDIATRICS 71, 75 (1995); Seth D. Pollak et al., *Physically Abused Children's Regulation of Attention in Response to Hostility*, 76 CHILD DEV. 968, 969, 974–76 (2005).

177. *See* Eisen et al. 2007, *supra* note 173, at 1289; Pollak et al., *supra* note 176, at 974–76.

178. *See* Eisen et al. 2007, *supra* note 173, at 1276.

179. *Id.* at 1277.

180. *See* MCNALLY, *supra* note 144, at 18 (quoting psychologist Laura Brown's observation that "the tactics of the false memory movement have shown remarkable parallels to those of sexual abusers who attempt to silence their victims").

181. *See* Eisen et al. 2007, *supra* note 173, at 1277.

182. *Id.* at 1276–77.

183. *See, e.g., id.* at 1290–91.

184. *Id.*

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fifteen-year olds, high levels of psychopathology were significantly related to higher levels of commission errors regarding a previously viewed video clip.¹⁸⁵ These results suggest that children's history of maltreatment per se may not lead to greater memory problems or suggestibility.¹⁸⁶ In fact, it can be related to better memory of legal relevance, as indicated in the 2007 Eisen study.¹⁸⁷ However, when certain forms of psychopathology exist, children with maltreatment histories may be at heightened risk of erring in their memory reports.¹⁸⁸

That said, some forms of trauma-related psychopathology (e.g., PTSD) are related to especially accurate memory for trauma.¹⁸⁹ For example, Alexander reported that victims who indicated that their childhood sexual abuse was the most traumatic event of their lives and those who had the most PTSD symptoms (regardless of the traumatic event resulting in the PTSD symptoms) evinced the greatest accuracy in recalling their documented childhood abuse, with no increase in error.¹⁹⁰ In the 2007 Eisen study, dissociative symptoms were not significant predictors of memory performance, except in adolescence, where greater dissociation predicted more accurate memory.¹⁹¹ Nevertheless, dissociation predicted increased errors when it was comorbid with other trauma symptoms and with a large physiological stress response to the medical examination.¹⁹² This finding, however, was not specific to memory for a stressful event.¹⁹³

In examining the children's memory for a relatively neutral

185. Kelly McWilliams, Latonya S. Harris & Gail S. Goodman, Presentation at American Psychology-Law Society Conference in San-Juan, Puerto Rico: Child Maltreatment and Eyewitness Memory (Mar. 17, 2012).

186. See generally Gail S. Goodman et al., *Effects of Past Abuse Experiences on Children's Eyewitness Memory*, 25 L. & HUM. BEHAV. 269, 272-73 (2001).

187. See Eisen et al. 2007, *supra* note 173, at 1292.

188. Gail S. Goodman, Jodi A. Quas & Christin M. Ogle, *Child Maltreatment and Memory*, 61 ANN. REV. PSYCHOL. 325, 325, 342 (2009).

189. See, e.g., Kristen Weede Alexander et al., *Traumatic Impact Predicts Long-Term Memory for Documented Child Sexual Abuse*, 16 PSYCHOL. SCI. 33, 33 (2005).

190. *Id.*

191. Eisen et al. 2007, *supra* note 173, at 1291.

192. *Id.*

193. *Id.*

experience (e.g., playing games with a research assistant), dissociation predicted increased errors if the children also suffered from other trauma symptoms.¹⁹⁴ Although this may indicate greater memory error in traumatized children who use dissociation as an emotion-regulation strategy, another possible explanation concerns what many researchers call “response bias,” that is, how readily a person is to agree with the interviewer (which technically differs from memory accuracy and likely represents more of a socio-emotional factor). Children who are more dissociative and have more trauma symptoms may be more willing to go along with misleading questions at the time of the interview, possibly due to anxiety-related attentional problems during the questioning, pressure to please the interviewer, or desire to end the interview quickly.¹⁹⁵ However, given that dissociation was correlated with, if anything, better memory in the previous study by Eisen in 2002, it would be premature to conclude with confidence relations of memory and dissociation from this series of studies.¹⁹⁶

Some of the memory errors committed by maltreated children, particularly those with symptoms of psychopathology, may be attributable to their reactions to the interview context, not simply to their memory per se. Maltreated children are at risk for socio-emotional problems, such as low self-esteem.¹⁹⁷ Maltreated children are also more likely than non-maltreated children to be classified as having insecure attachment representations,¹⁹⁸ and

194. See generally Yoojin Chae et al., *Event Memory and Suggestibility in Abused and Neglected Children: Trauma-Related Psychopathology and Cognitive Functioning*, 110 J. EXPERIMENTAL CHILD PSYCHOL. 520, 520 (2011).

195. Eisen et al. 2007, *supra* note 173, at 1291.

196. Eisen et al. 2002, *supra* note 162, at 202-03.

197. See Kerry E. Bolger, Charlotte J. Patterson & Janis B. Kupersmidt, *Peer Relationships and Self-Esteem among Children Who Have Been Maltreated*, 69 CHILD. DEV. 4, 1171, 1171 (1998); see also Jungmeen Kim & Dante Cicchetti, *Longitudinal Trajectories of Self-System Processes and Depressive Symptoms Among Maltreated and Nonmaltreated Children*, 77 CHILD. DEV. 3, 624, 625 (2006); see also Sheree L. Toth et al., *Symposium, Influence of Violence and Aggression on Children's Psychological Development: Trauma, Attachment, and Memory 2-3* (2009) (unpublished manuscript from the Second Herzliya Symposium on Personality and Social Psychology: Understanding and Reducing Aggression, Violence and their Consequences) (on file with author).

198. See Vicki Carlson et al., *Disorganized/Disoriented Attachment Relationships in Maltreated Infants*, 25 DEV. PSYCHOL. 525, 528 (1989).

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they tend to have lower levels of trust in others.¹⁹⁹ In both maltreated and non-maltreated samples, insecure attachment (particularly avoidant attachment) has been linked to poorer memory and increased suggestibility for stressful events.²⁰⁰ The latter pattern has been observed most consistently when children are questioned about prior negative experiences, perhaps because discussing those experiences activates internal working models and attachment-related emotion-regulation strategies. Because maltreated children are at risk for insecure attachment representations and socio-emotional problems, they may be especially sensitive to an interviewer's demeanor. Such socio-emotional problems may influence children's ability to answer questions in legal contexts, particularly stressful contexts such as cross-examination, regardless of how well the children actually remember a prior event.²⁰¹

Given that children are typically more accurate when questioned by a supportive, warm interviewer rather than an emotionally neutral, hostile, or distant interviewer,²⁰² especially when the children are asked to recount a stressful event,²⁰³ emotion regulation during a forensic interview or in other legal contexts, such as court, may be especially important for

199. See generally Patricia M. Crittenden, *Relationships at Risk*, in CLINICAL IMPLICATIONS OF ATTACHMENT 136, 136 (Jay Belsky & Teresa Nezworski eds., 1988); see also Byron Egeland & L. Alan Sroufe, *Attachment and Early Maltreatment*, 52 CHILD DEV. 44, 49 (1981).

200. See, e.g. Robin S. Edelstein, et al., *Individual Differences in Emotional Memory: Adult Attachment and Long-Term Memory for Child Sexual Abuse*, 31 PERSONALITY & SOC. PSYCHOL. BULL. 1537, 1544 (2005); Gail S. Goodman et al., *Children's Reactions*, *supra* note 99, at 71–72; see generally Kristen Weede Alexander, Jodi A. Quas & Gail S. Goodman, *Theoretical Advances in Understanding Children's Memory for Distressing Events: The Role of Attachment*, 22 DEV. REV. 490 (2002).

201. See Rachel Zajac, Sarah O'Neill & Harlene Hayne, *Disorder in the Courtroom? Child Witnesses under Cross-Examination*, 32 DEV. REV. 181, 191 (2012).

202. See Carter et al., *supra* note 128; see also Goodman et al., *Children's Testimony*, *supra* note 108, at 92; see also Jodi A. Quas & Heather C. Lench, *Arousal at Encoding, Arousal at Retrieval, Interviewer Support and Children's Memory for a Mild Stressor*, 21 APPLIED COGNITIVE PSYCHOL. 289, 300–01 (2007); see also Quas et al., *supra* note 128, at 337.

203. Elizabeth B. Rush et al., *Stress, Interviewer Support, and Children's Eyewitness Identification Accuracy*, CHILD DEV. 3 (forthcoming) (electronic publication Oct. 16, 2013), available at, <http://onlinelibrary.wiley.com/doi/10.1111/cdev.12177/abstract>.

maltreated children. Supportive interviewers are needed who, while maintaining neutrality, can help maltreated children regulate anxieties, insecurities, and emotions, so that the interviewer can obtain the most accurate memory reports possible. Again, here we see the role of both memory development and socio-emotional factors.

To the extent such errors are due to response bias and socio-emotional factors, interview strategies that best take maltreatment victims' needs into consideration might be especially successful in heightening accuracy and reducing errors. Interview style and context are important influences on children's memory performance and suggestibility. This may be especially true for maltreated children, who may lack trust and self-confidence as well as suffer from trauma-related symptoms, such as symptoms of PTSD, dissociation, or depression. The level of rapport, warmth, and social support provided by an interviewer are important considerations to bolster the quality of maltreated children's reports of child sexual abuse.²⁰⁴ One might wonder, then, how children with trauma histories might fare when put on the stand in an intimidating courtroom and subjected to cross-examination, as well as how children even without maltreatment histories perform in such contexts.

C. *Cross-Examination and Children's Eyewitness Memory*

After children's initial disclosures and subsequent forensic interviews, if the legal case proceeds to trial on the sexual abuse allegations, children may need to tell their story yet again, but this time in court. Although even young children have the cognitive capability to recount personally experienced negative events accurately, courts are intimidating social contexts for children.²⁰⁵ Even children who have sufficiently accurate memories to recount what happened may find the social context too stressful to optimally, or even adequately, describe what happened and resist false suggestions.²⁰⁶ Children are likely to

204. See Lamb et al., *supra* note 129.

205. See Goodman, et al., *Testifying in Criminal Court: Emotional Effects on Child Sexual Assault Victims*, 57 MONOGRAPHS OF THE SOC'Y FOR RES. IN CHILD. DEV. 5, 12 (1992) [hereinafter Goodman et al., *Testifying in Criminal Court*].

206. See Goodman et al., *Testifying in Criminal Court*, *supra* note 205.

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take the stand without the presence of a supportive, non-offending parent(s), who may also be called as witnesses.²⁰⁷ Fortunately, a court or district attorney-appointed support person (typically called a “victim advocate”) may be permitted to stand behind testifying children for at least a modicum of emotional support.²⁰⁸

Like adult witnesses in United States criminal courts, child witnesses typically must take the stand and be subjected to direct and cross-examination.²⁰⁹ In child sexual abuse trials, the child victim is called to the stand by the prosecution. First, the prosecutor will question the child to establish the case-in-chief. Then the child will be cross-examined by the defense attorney regarding the child’s current testimony and any prior statements or testimony by the child. Although the prosecutor’s direct examination carries the risk of adult-like questions, which have been shown to be confusing to children given their level of cognitive development, generally prosecutors try to rely on free recall questions and strive to support child victims called to the stand.²¹⁰ In contrast, cross-examination by defense attorneys raises additional complications and greater intimidation, including leading questions that attempt to discredit the child.²¹¹ The interplay between cognitive and socio-emotional factors during cross-examination of children can combine to greatly disadvantage child witnesses.

Researchers have previously detailed the numerous ways in which cross-examination may be deleterious to children’s testimony.²¹² For instance, leading questions and complex questions, both of which are frequently used in cross-examining child witnesses, are confusing and may lead children to give

207. *Id.* at 11.

208. See Goodman et al., *Testifying in Criminal Court*, *supra* note 205, at 11; See also Bradley D. McAuliff et al., *Supporting Children in U.S. Legal Proceedings: Descriptive and Attitudinal Data from a National Survey of Victim/Witness Assistants*, 19 *PSYCHOL. PUB. POL’Y & L.* 98, 99 (2013).

209. Goodman et al., *Testifying in Criminal Court*, *supra* note 205, at 11.

210. Zajac et al., *supra* note 201, at 184.

211. See Fed. R. Evid. 611(c); See also Zajac et al., *supra* note 201, at 190–91.

212. See generally Sarah O’Neill & Rachel Zajac, *The Role of Repeated Interviewing in Children’s Responses to Cross-Examination-Style Questioning*, 104 *BRIT. J. OF PSYCHOL.* 14, 27–29 (2013); see also Zajac et al., *supra* note 201.

inaccurate testimony.²¹³ The negative effects of testifying at trial may be compounded by the intimidating courtroom setting and, in turn, this intimidation may lead to decreased reliability in testimony.²¹⁴ Thus, again, both cognitive and socio-emotional factors affect children's abilities to provide accurate eyewitness testimony—albeit now in the courtroom before the trier of fact.

Of interest, and perhaps not surprisingly, to many practitioners, juries often are critical about how attorneys question child witnesses.²¹⁵ Prior research on jurors' perceptions of the style of questioning used when interviewing child witnesses, including how leading questions are, has shown that mock jurors are particularly critical of highly leading questions.²¹⁶ Practitioners should be aware that using highly leading questions with children may result in the jurors questioning children's credibility generally and the resulting testimony specifically.²¹⁷ However, use of more complex questions by defense attorneys predicts greater likelihood of conviction rather than acquittal.²¹⁸

The effect of aggressive questioning clearly has ramifications outside of jurors' perceptions of the case. Indeed, testifying in criminal court can have negative effects on children's mental health (e.g., if children have to testify repeatedly about severe intra-familial sexual abuse, if children lack maternal support) and perceptions of the legal system.²¹⁹ Older children seem to have worse outcomes than younger children in relation to testifying in court.²²⁰ This may be due, in part, to the fact that older children

213. See Zajac et al., *supra* note 201, at 184, 191.

214. See Gail S. Goodman et al., *Face-to-Face Confrontation: Effects of Closed Circuit Technology on Children's Eyewitness Testimony and Jurors' Decisions*, 22 LAW & HUM. BEHAV. 165, 168 (1988); see also Rebecca Nathanson & Karen Saywitz, *The Effects of the Courtroom Context on Children's Memory and Anxiety*, 31 J. PSYCHIATRY & L. 67, 71 (2003).

215. See Zajac et al., *supra* note 201, at 192.

216. See Paola Castelli, Gail S. Goodman & Simona Ghetti, *Effects of Interview Style and Witness Age on Perceptions of Children's Credibility in Sexual Abuse Cases*, 35 J. APPLIED SOC. PSYCHOL. 297, 311 (2005).

217. *Id.*

218. See Angela D. Evans, Kang Lee & Thomas D. Lyon, *Complex Questions Asked by Defense Lawyers But Not Prosecutors Predicts Convictions in Child Abuse Trials*, 33 L. & HUM. BEHAV. 258, 262 (2009).

219. See Jodi A. Quas & Gail S. Goodman, *Consequences of Criminal Court Involvement for Child Victims*, 18 PSYCHOL. PUB. POL'Y & L. 392, 398 (2012).

220. See *id.* at 402.

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may face more rigorous cross-examination or that older children are more aware that their credibility is being called into question.²²¹ Furthermore, older children may realize the effect their testimony has on the overarching case and the defendant's future.²²²

This review of the potential negative effects of cross-examination is not meant to undermine the hard work that judges, the prosecution, and the defense do every day in ensuring that all parties have their day in court. Instead, it is meant to raise discussion on the unintended effects of cross-examination, undermining truthful testimony by children and negatively impacting children's mental health.²²³ It is also meant to highlight the remedial actions that the legal system can take to ensure the veracity of testimony. For instance, prior research has shown that truth induction, such as a developmentally appropriate approach to the testimonial oath, can increase children's truthful testimony.²²⁴ Additionally, interventions preparing child witnesses for cross-examination specifically, rather than testimony generally, may help decrease the negative effects of cross-examination.²²⁵

As recognized by Federal Rule of Evidence 611(a)(1) and its ancillary rule in other states, judges can and should exercise reasonable control "over the mode and order of examining witnesses and presenting evidence so as to . . . make those procedures effective for determining the truth."²²⁶ Understanding how development interacts with our current legal procedure can help aid the judiciary in meeting this requirement. Thus, going forward, the meeting of the psychological community together with both the bench and the bar can ensure that the legal

221. *Id.*

222. *Id.*

223. *Id.*

224. See Angela D. Evans & Kang Lee, *Promising to Tell the Truth Makes 8- to 16-year-olds More Honest*, 28 BEHAV. SCI. & L. 801, 808–10 (2010); see also Thomas D. Lyon, et al., *Coaching, Truth Induction, and Young Maltreated Children's False Allegations and False Denials*, 79 CHILD DEV. 914, 915 (2008).

225. See Saskia Righarts, Sarah O'Neill & Rachel Zajac, *Addressing the Negative Effect of Cross-Examination Questioning on Children's Accuracy: Can We Intervene?*, 37 L. & HUM. BEHAV. 354, 360 (2013); see also Zajac et al., *supra* note 201, at 196–97.

226. See Fed. R. Evid. 611(a)(1).

community has access to the training, including training on developmental issues pertinent to the courtroom, necessary to meet that goal.

VII. CONCLUSION

In conclusion, through an awareness of the many cognitive and socio-emotional factors that influence children's eyewitness memory, the legal community can play a role in ensuring the accurate disclosure and recall of sexual abuse by children. Many of these factors necessitate that the legal system balance counteracting developmental considerations. For instance, whereas children's memory abilities generally increase with age, so do their awareness of the potential ramifications of disclosure.²²⁷ Thus, although older compared to younger children may have better memory capabilities, older children may at the same time be particularly hesitant to disclose.²²⁸ Correspondingly, caretakers and interviewers can promote true disclosure by taking an emotionally supportive approach to developmentally appropriate questioning, or squelch true disclosure via a socially unsupportive stance, one that also may increase false reports in the context of misleading questions, especially for young children.²²⁹

The legal system also needs to balance children's cognitive and socio-emotional needs in the courtroom, for example, during cross-examination, so that the truth can be known.²³⁰ The law seeks to recompense those who have suffered wrongs at the hands of another, but the very wrongs that can result from sexual abuse, such as certain forms of trauma-related psychopathology, can make it harder for maltreated children to accurately disclose and present their case.

Thus, the legal system must walk a careful line in providing a developmentally appropriate path for obtaining and considering children's reports. This path must include a roadmap of children's cognitive abilities and socio-emotional needs along the way to ensure that child witnesses provide truthful testimony and

227. See Quas & Goodman, *supra* note 219, at 402.

228. See *id.*

229. See Quas et al., *Physiological Reactivity*, *supra* note 127.

230. See Zajac et al., *supra* note 201.

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evidence. In doing so, the legal system can take an appropriate route to optimizing disclosure, investigation, and trial in child sexual abuse cases.