

The Accuracy of Adults' Long-Term Memory for Child Sexual Abuse



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As more and more adults come forward to allege the past experience of child sexual abuse, society is grappling with how to respond to these “historic” cases (Connolly, Chong, Coburn, & Lutgens, 2015; Howe & Knott, 2015; Wells, Morrison, & Conway, 2014). The dilemmas are reflected in civil suits and criminal prosecutions against Catholic priests, civil suits against the Michael Jackson estate, and criminal cases against such noted individuals as child psychiatrist William Ayer, Penn State University coach Jerry Sandusky, and U.S. House of Representatives Speaker Dennis Hastert. Historic child sexual abuse cases raise important questions for the legal system, psychology, and society. These questions include whether adults accurately remember childhood experiences of sexual abuse given the passage of years if not decades, and whether children who initially denied that sexual experiences occurred are then able to accurately come forward as adults. Previously, few published studies had analyzed the accuracy of adults’ memories for verified abuse-related childhood events that include documented genital contact (Goldfarb, Goodman, Larson, Eisen, & Qin, 2019). Thus, questions about how accurately adults remember such experiences went largely unanswered. Also unstudied was the language adults use to describe childhood experiences.

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In this chapter, we review legal arguments, theoretical ideas, and empirical studies both in support of and against people's abilities to remember and testify about abusive events that occurred years prior. We argue that, although there are reasons to question the ability to accurately remember events after the passage of years, degradation of memory alone is insufficient to support an argument for a strict application of the statute of limitations. Indeed, both children and adults are able to accurately remember (and thus testify about) events that occurred years prior, although they might experience some degradation in memory and increased suggestibility, especially for details. We also argue that utilization of adult (vs. child-like) language to describe decades-old trauma might not be a predictor of the accuracy of such events. False allegations do, of course, occur and avoiding wrongful convictions resulting from such statements must be one of the issues at the forefront of legal reform. We contend, however, that evaluation of the individual testimony and case facts, rather than a general "timeliness bar," is the best way to assess the veracity of historic child sexual abuse claims.

Specifically, this chapter provides an overview of research conducted thus far (including our own longitudinal project) regarding adults' ability to remember and describe stressful and traumatizing childhood events years, even decades, after the events occurred. First, we review research on children's hesitancy to disclose sexual abuse, which can lead to disclosure only after adulthood is reached ("delayed disclosure"), potentially prompting a historic child sexual abuse legal case; we also review the legal system's preference for timely legal actions. Second, using case examples, we consider the legal system's past and more current reactions to delayed disclosures. Third, we discuss psychological research on adults' long-term memory for autobiographical events, in relation to non-traumatic experiences and in relation to traumatic but non-sexual incidents. Fourth, the topic of children's long-term memory for emotional or traumatizing autobiographical events is of clear relevance, and thus is tackled. Fifth, we consider the role that trauma, in particular maltreatment, plays in a person's ability to be an accurate historian of one's life experiences. Sixth, we discuss our study on adults' ability to accurately recall genital touch documented in childhood, including the language used to describe such experiences. Seventh, we describe research on two important individual difference predictors of long-term memory, specifically the roles of attachment orientations and psychopathology symptoms. Eighth, we address the issue of false memory for historic child sexual abuse. Finally, we end by mentioning several relevant topics in need of empirical study that have crucial implications for psychological theory and the legal system in "historic abuse" cases.

It should be noted that our review is not inclusive of all relevant research. For instance, we are not concerned here with "repressed memory" cases, in which victims claim that their memory for an event was "inaccessible for conscious inspection due to an active process called repression" (Otgaar et al., 2019), *per se*. Instead, we focus here on cases in which the victims' failure to disclose decades prior (when the events first occurred) was not due to a blockage in the ability to remember the event but, instead, a conscious or pressured choice not to bring the case to the attention of the authorities. Indeed, although these victims might state that they chose not

to remember the event, these are cases where memories of the event may have been accessible had the victims wished or tried to think about them.

Children's Hesitancy to Disclose Child Sexual Abuse and the Statute of Limitations

Numerous forces underlie children's frequent delays in disclosure of sexual trauma or touch (Goodman et al., 2003; McElvaney, 2015). For example, young victims might be afraid of the lack of support or even the eruption of violence they could face in response to disclosure (Paine & Hansen, 2002; Staller & Nelson-Gardell, 2005; Tashjian, Goldfarb, Goodman, Quas, & Edelstein, 2016). Case studies provide stark examples of children's reluctance to discuss prior maltreatment or abuse. In one example, investigators had forensic evidence verifying that eight children had been sexually assaulted by a stranger (Leander, Christianson, & Granhag, 2007). Even after law enforcement interviewed them, only approximately 7% of the children's comments referred to sexual acts. Thus, children are often (if not consistently) reluctant to disclose or discuss sexual abuse. In a review paper, London, Bruck, Ceci, and Shuman (2005) concluded that only around 33% of sexually abused children initially disclose the assaults.

One should not assume that a failure to disclose is the same as a failure to remember the event. There are a number of reasons that children hesitate to disclose child sexual abuse. Children might worry that parents will abandon, not believe, or retaliate against them if abuse is disclosed, a fear which can keep children from coming forward (Summit, 1983). Children could feel loyalty to the perpetrator, self-blame, or embarrassment (e.g., Bidrose & Goodman, 2000; Quas, Goodman, & Jones, 2003). In a study of 218 alleged child sexual abuse victims, Goodman-Brown, Edelstein, Goodman, Jones, and Gordon (2003) found that several key variables were associated with delayed disclosure of abuse in their prosecution sample: (1) older age; (2) experience of intra- versus extra-familial sexual abuse; (3) perception that they were responsible for the abuse; and (4) fear of retribution from a parent or family member. Although younger children often disclosed sooner than their older counterparts, suggesting that younger children are less aware of the consequences of disclosure, the age findings on delayed disclosure are mixed (e.g., Hershkowitz, Horowitz, & Lamb, 2005; Leach, Powell, Sharman, & Anglim, 2017; Lippert, Cross, Jones, & Walsh, 2009; London et al., 2005). In any case, across a wide age range, children less frequently disclose when they are experiencing physical and emotional abuse at home, potentially out of fear that the abuse will only be compounded upon disclosure (Tashjian et al., 2016).

At odds with this reluctance to report is the law's preference for a timely resolution of legal matters. Indeed, the statute of limitations, establishing the maximum amount of time within which a case might be brought, was formulated in part out of fears that evidence quality, including the accuracy of memory, degrades with time.

As stated by the United States Supreme Court, statutes of limitations “protect defendants and the courts from having to deal with cases in which the search for truth could be seriously impaired by the loss of evidence, whether by death or disappearance of witnesses, *fading memories*, disappearance of documents, or otherwise” (U.S. v. Kubrick, 1979 [emphasis added]).

Yet partially out of awareness that children often hesitate to timely divulge sexual abuse, in recent years many states enacted statutes either tolling (holding in abeyance) or retroactively applying extended statutes of limitations for cases of child sexual abuse (see California Code of Civil Procedure section 340.1(r), 1991). By tolling the statute of limitations in these (and other such) cases, the courts are now admitting testimony about events that occurred years prior. Courts and researchers have fairly raised concerns about such testimony (Connolly & Read, 2007; Conway, 2013; Howe, 2013; Loftus, 1996). Memories fade over time for both children and adults (Hirst et al., 2015; La Rooy, Pipe, & Murray, 2007). Despite this degradation in memory for some events, there is also growing research supporting people’s ability to remember traumatizing childhood experiences years after their occurrence (Bauer et al., 2016; Fivush, McDermott Sales, Goldberg, Bahrnick, & Parker, 2004; Peterson, 2015; Van Abbema & Bauer, 2005). For example, child sexual abuse survivors can accurately recall the alleged event at least 13 years later and often much longer (e.g., Goldfarb et al., 2019; Goodman et al., 2003).

In addition to questions regarding the general ability to testify accurately about trauma that occurred decades before, researchers and practitioners have also become increasingly focused on the predictors of such accuracy. This issue is perhaps best framed by the recent testimony of Dr. Christine Blasey Ford in front of the United States Senate’s Judiciary Committee. In discussing the alleged sexual assault by (now) Justice Brett Kavanaugh when she was a teenager, questions arose about the details that Dr. Ford could and could not remember and the language she used to discuss her alleged trauma. This focus mirrors some of the debate surrounding historic child sexual assault (at least for some states): Not whether victims can testify but how triers of fact (e.g., courts and jurors) determine if they are accurately testifying, including what language they utilize when describing sexual trauma that actually took place.

The Legal System’s Reaction to Long-Term Memory for Events

Examples help set the stage for understanding the legal system’s past and present reactions to historic child sexual abuse cases. The examples reflect the legal system’s former hesitancy to admit adults’ testimony about experiences of child sexual assault, as well as the law’s current trend to toll statutes of limitation, permitting cases to move forward.

As one example, take the case of Horace Mann School in New York City. For decades, a handful of the teachers there sexually abused a number of students entrusted to their care. Due, perhaps, in part to adults coming forward regarding childhood victimization in other well-publicized cases, such as the 2012 Sandusky trials, former Horace Mann students came forward (in a 2012 *New York Times* article) and detailed the criminal conduct by their prior teachers (Flanagan, 2016). Decades after the abuse occurred, numerous students who were enrolled during the 1960s to the 1990s reported that teachers would engage in inappropriate sexual conduct with the students (Glaberson, 2012).

Although the victims had their voices heard by the major media outlets, they never received their day in court. Despite many students reporting similar conduct and some teachers even admitting improper conduct (some going so far as to say that that was just what happened in the school at that time), many victims' claims were barred by the statute of limitations (Glaberson, 2012). In 2012, when the Horace Mann stories first made the national news, New York had one of the strictest applications of the statute of limitations for sexual abuse cases; claims were only tolled until the putative victim reached 23 years of age. This deadline had passed for many alleged victims who often did not feel comfortable revealing their victimization until years after it had occurred.

Prior to 2019, attempts to extend New York's statute of limitations were unsuccessful. However, in January of 2019, partially due to rising awareness of how frequently child victims delay prosecution of sexual assaults, the state legislature passed the Child Victims Act extending the statute of limitations for sex crimes against children; victims now have until they turn 55 to bring civil suits and until they turn 28 for criminal prosecutions. Additionally, it gave victims a "look-back period." Starting on August 14th of 2019, victims had a one-year limited period in which they could sue for prior abuse, irrespective of when the abuse occurred. In February of 2019, the Governor of New York signed the act into law (US News and World Report, 2019).

Another example concerns the California prosecution of Dr. William Ayres, a noted child psychiatrist in the Bay Area, who allegedly violated the trust of the young patients he saw in his practice (Kinney, 2016). For 40 years, starting around 1960, Dr. Ayres was alleged to have molested a number of boys, claiming that he was examining the patients' genitals as part of psychiatric evaluation and counseling. In 2012, the same year that the Horace Mann scandal broke, a San Mateo County Superior court judge held that Dr. Ayres was competent to stand trial and ordered the prosecution to proceed. Although many of the doctor's victims' cases were barred by the statute of limitations, California's more liberal deadline for instituting legal actions permitted criminal sanctions that were not then available to the Horace Mann victims.

California has gradually been extending the deadline to prosecute child sexual abuse cases over the past few decades. In 2014, then Governor Jerry Brown signed legislation extending the deadline to file charges to the victims' 40th birthday (from their 26th birthday; California SB 926, 2014). Two years later, in 2016, the State of

California enacted legislation abolishing the statute of limitations for sexual assault cases, with some limitations, for both child and adult victims (California SB 813, 2016; Ulloa, 2016). As some of the cases remained timely in this matter, in the end, Dr. Ayres was sentenced to eight years in prison (Kinney, 2016). He died three years into his sentence at the age of 84.

Initially, California and New York highlighted two different approaches to defining the statute of limitations for child sexual abuse cases. Their approaches have since come closer together in joining a growing number of states (and countries) that have expanded or completely abolished the statute of limitations; consequently, adults' testimony regarding events that occurred in childhood is being increasingly heard by these courts (Connolly, Coburn, & Chong, 2017; Connolly & Read, 2007). In other states, there is less movement to expand the statute of limitations. Indeed, some of these states are still concerned with the issue the Supreme Court raised 40 years ago in the *Kendrick* matter; the effect of the degradation in quality of eyewitness testimony. Which state and approach is most "just" depends in part on the research regarding the accuracy of adults' memories for abusive or traumatizing events that occurred in childhood.

Research on Adults' Long-Term Memory for Autobiographical Events

Researchers have conducted studies on children's and adults' ability to remember events and the potential influence of trauma on memory; prior reviews describe this body of work (Goldfarb, Goodman, Larson, Gonzalez, & Eisen, 2017; Goodman et al., 2016; Goodman, Goldfarb, Chong, & Goodman-Shaver, 2014; Goodman, Ogle, McWilliams, Narr, & Paz-Alonso, 2014; Howe & Knott, 2015). As our focus here is on adults' ability to remember a traumatic experience decades after the target event occurred, we review the literature relevant *to long-term memory for events experienced in childhood*. In particular, we focus on whether memories can persist over the years and what predicts the ability of these memories to endure and not to completely fade away with time.

Perhaps the classic study on adults' ability to retain information over long periods of time is Ebbinghaus' (1913) work on the forgetting curve. Ebbinghaus taught himself lists of nonsense words and then tested his retention of the "words" after a delay (his index of forgetting). The rate of forgetting in this study generally followed an exponential decline with large levels of memory degradation in the beginning that eventually leveled out and subsided. Other researchers replicated these studies and found similar patterns of results, even when the topic of recall changed, such as number lists or details of a campus. Rubin and Wenzel (1996) reviewed these studies and discussed the shape of the retention function or forgetting curve (see also Murre & Dros, 2015; Roediger & DeSoto, 2014; Wixted, 2004).

The rate of decline for the retention function has also been considered over intervening decades. Bahrnick (1984) tested participants' memory for Spanish words that they had learned as high school or college students anywhere from a year to 50 years prior. This permitted Bahrnick to examine the rate of forgetting as the time between encoding and recall increased. Forgetting was steepest in the first 3–6 years, stabilized for the next 30 years, and then showed some declines over the next 20 years. Similar findings were reported on adults' memory for other high school concepts (e.g., mathematics; Bahrnick & Hall, 1991). Bahrnick posited that certain memories moved into long-term storage and that these memories were maintained over decades, what he termed the "permastore."

However, not all information showed this movement into permastore (Bahrnick, 1983; Squire, 1989). There was some evidence that the rate of forgetting was influenced by the amount of time one spent learning the materials. In other words, Spanish and mathematics were better retained over the decades when the students spent more (vs. less) time on learning the relevant subject. That said, and in what might be an utter surprise to anyone who has attempted to recall what they learned in calculus, once material crossed that boundary into the permastore, it was retained for years (Bahrnick & Hall, 1991). The boundary might also reflect, however, how well the individuals understand the information or curiosity of the subject matter rather than just the time spent learning the material.

This research was foundational in sparking interest in the degradation of memory over long time periods. From a legal perspective, however, rare is the case in which an eyewitness is called to accurately remember a long set of nonsense words, perform math calculations, or ask for something in a foreign language. Thus, from an applied perspective, our ability to recall lists of words or numbers could be limited in its extrapolation to actual witness memory as the target information is typically removed from a sense of self and deprived of an autobiographical context or personal significance. Thus, studies that consider long-term memory beyond list recall or other such laboratory tasks, including whether individuals can remember people who were previously familiar individuals in their lives, are of particular import to the legal system.

Bahrnick, Bahrnick, and Wittlinger (1975) utilized another naturally occurring phenomenon from high school, seeing classmates and teaching staff's faces every day. Here, in a cross-sectional study, 392 participants (who had graduated from high school between 2 weeks and 57 years prior) tried to identify pictures from randomly selected yearbook photos. For approximately the first 15 years after graduation, participants correctly identified around 90% of the photos. This rate declined in the intervening time period until approximately 60% of photos were remembered around 50 years later. This study provided further evidence supporting the eventual relative stability of memory for particular types of information, especially information that is familiar, personal, or central to individuals. One can only wonder whether this effect would be even stronger today when social media, such as Facebook, permit people to continually reinstate both past and present memories for faces of prior friends and acquaintances.

Although eyewitness identification (such as identifying a perpetrator or a victim in a photograph) plays an important role in the legal system, identification is only one of the many types of memory that are tapped in forensically relevant cases. Many times, crimes are committed by individuals with whom the victim either has a close relationship (a loved one or caregiver) or someone who commits ongoing abuse (such as an individual in a position of authority) and identification is not an issue, especially as typically studied in psychology laboratories. Further, victims who are asked to recall prior traumas are bringing forth highly emotional events and, as others and we have argued, memories for these events are often particularly strong (Christianson, 1992; Goldfarb et al., 2017; Goodman et al., 2016). Thus, we next consider not witnesses' ability to remember someone's (e.g., a stranger's) face but individuals' ability to remember an emotional event that happened to them, thus better mimicking the victim's perspective in a legal prosecution.

Adults' Long-Term Memory of Emotional or Traumatizing Autobiographical Events

To empirically analyze memory for traumatizing events and information, researchers take advantage of the unfortunate tragedies that occur in people's ordinary lives. Assessing accuracy with precision, however, requires that there is a record of the event at issue. Some events are of such significance and consequentiality that nearly every person within a particular geographic area will have some memory for when they first learned of the news (e.g., the attacks on September 11th, President Kennedy's assassination), and there are recorded details of the occurrence. These events are also of theoretical and applied significance, as they are often important or consequential and contain a strong emotional component (e.g., shock, surprise, sadness), as well as rehearsal of the memory. A large and impressive body of research has formed around individuals' ability to recall these events, termed "flashbulb memories" (Brown & Kulik, 1977). Overall, the research reveals that individuals are fairly good at recalling that the event itself occurred but less accurate in remembering the details surrounding the event (Conway, 2013), to a level that might be surprising given how salient these memories often feel to the collective conscience.

A subset of flashbulb memory studies analyzes the accuracy of such memories decades later. In one such study, Berntsen and Thomsen (2005) examined 72- to 89-year-old Danish individuals' ability to remember both the German invasion and the liberation approximately 60 years after they occurred. As with prior flashbulb memory studies, participants showed degradation in their memory for the event. That being said, they also retained certain details six decades after the occurrence. Individuals generally recalled the event better than chance, where chance was derived from the percentage of younger participants who were not old enough to remember the event ("controls") but correctly "guessed" or correctly knew the

information. Elderly participants often revealed high levels of accuracy regarding the details of the events (including 86% of the participants accurately recalling whether the invasion occurred on a Sunday or a weekday vs. 26.2% of the controls).

In flashbulb memory studies, asymptotic results similar to those found by Bahrick (1984) have been reported for memories of the September 11th attacks, where forgetting increased in the first 3 years but was generally stable when tested 10 years later (Hirst et al., 2015). Thus, although there is the expected level of memory degradation, particularly for details about the event, with intervening years, stability of certain facets of the memories occurs such that those portions of the event are retained even decades later.

There are limitations in extrapolating from flashbulb memories to experiences of victimization. Flashbulb memories, as traditionally studied, do not necessarily involve an individual recalling a trauma that occurred directly or within close proximity to the self (but see Rubin & Kozin, 1984, and Sharot, Martorella, Delgado, & Phelps, 2007). Instead, individuals recall hearing about or learning about an event of national (or even international) consequence and significance. That is not to downplay the emotional gravitas people collectively feel when other human beings suffer a tragedy or when our national security is threatened, but these events inherently involve memory for learning about something rather than experiencing something.

Indeed, both children and adults have better recall for events that they personally experienced than ones that they did not (e.g., Neisser et al., 1996; Tobey & Goodman, 1992). In Berntsen and Thomsen's (2005) study, individuals were more likely to remember details that were salient to their own learning about the incident (e.g., what the weather was like that day, whether it was a weekend or a workday) as opposed to details about the event (e.g., historical details). Further, individuals who were passengers on a near-death plane crash in 2001 could accurately recall more details 5 years later for that personally experienced event than they could for the September 11th attacks (McKinnon et al., 2015). There are theoretical and empirical reasons to believe that directly experiencing an event could lead to stronger retention than secondarily experiencing it (such as learning about it via the media).

Flashbulb memories, compared to memory for directly experienced events, could also have a different application in the courtroom context, as recall of learning about a negative event that occurred to someone else often falls under the hearsay exclusionary rule (Fed. Rules of Evid., Rule 801, n.d.). If the testimony did not conform to any exceptions to the rule (e.g., an excited utterance), it would thus be inadmissible (Clark v Ohio, 2015; Crawford v. Washington, 2004; Idaho v. Wright, 1990). Victim evidence, however, is direct testimony about something experienced by an individual and, as such, less likely to be subject to exclusion under the hearsay rule.

One way that researchers ethically study people's ability to remember emotional or traumatizing events decades later is by interviewing or surveying victims of crimes or persecution and attempting to assess the accuracy and qualities of their memories (e.g., Tromp, Koss, Figueredo, & Tharan, 1995). One such unthinkable event that has been considered in the memory literature is Holocaust survivors'

memory for their experiences in concentration camps. In one study, five survivors were asked to freely recall and then answer specific questions regarding a particular concentration camp experience (Schelach & Nachson, 2001). After comparing these reports to documentation from the camps, the researchers found that the survivors could accurately recall their stay at the camps over 50 years later, but that the participants' recall for emotional events, such as Allied bombings or deaths, was better than for neutral events, such as the layout of the camp or the daily routine (with a mean score of approximately 71% correct for emotional events and 52% correct for neutral events).

Emotionality is not, however, a perfect barrier against memory degradation and sometimes does not predict later recall. In another study comparing the testimony of concentration camp survivors taken shortly after the war ended to that taken 40 years later, researchers found that omission errors can and did occur (Wagenaar & Groeneweg, 1990). In their later recall, participants had forgotten about instances of victimization and the identity of their victimizers. Thus, these studies reveal that details of even the most horrific events do fade with time. But, they also provide support that many individuals who have experienced traumatizing events can accurately recall important components of their traumatic experiences over half a lifetime later.

Indeed, the distinctiveness of these events (in the context of everyday life) could lead to their durability in long-term memory (Howe, 2011). Diary studies reveal that mundane events are more easily forgotten than those that are unique or distinct (Linton, 1975). The same is true for events that are important to the individual and to one's sense of self or survival. However, even after controlling for distinctiveness, one study found that the two participants were able to remember some detail for a vast majority of life events that occurred approximately 20 years before (around 80%; Catal & Fitzgerald, 2004; see also Burt, Kemp, & Conway, 2001).

However, in a survey study of former rape victims' subjective reports of their memories (not an objective measure of their accuracy), Koss, Tromp, and Tharan (1995) found that the victims did not believe that their own rape memories were remembered well (Tromp et al., 1995). In fact, rape memories (compared to other unpleasant memories) were reported as less well-remembered, less clear and vivid, and less visually detailed; these memories were talked and thought about less, and were less likely to occur in a meaningful order. There are several possible interpretations of these findings, including that some of the conditions under which rape can occur (e.g., in darkness) and greater avoidance of memory of rape compared to many other unpleasant events could affect the self-rated quality of rape memories. It is also of note that when the actual objective accuracy of sexual assault memories was examined, victims who reported holes in their memory, that is, lost but then recovered memory of the assaults, actually had more accurate memories than other victims (Ghetti et al., 2006). Thus, subjective descriptions that tap phenomenology of memory could conflict with objective measures that index actual memory accuracy.

Children's Long-Term Memory for Emotional or Traumatizing Autobiographical Events

For events experienced in childhood, the accuracy of memories over the long-term is generally dependent on the age at which the children encoded the event (e.g., Quas et al., 1999; Schulster, 1996). Age typically predicts children's memory accuracy with older, compared to younger, children generally showing decreased suggestibility, more complex and detailed responding, and better reporting of central details (Eisen, Goodman, Qin, Davis, & Crayton, 2007; Goodman, Bottoms, Rudy, Davis, & Schwartz-Kenny, 2001; McWilliams, Harris, & Goodman, 2014). That said, some children and adults can, years later, recall emotional events that occurred when they were as young as 2 years of age (Fivush, 2002; McWilliams, Narr, Goodman, Mendoza, & Ruiz, 2013; Peterson, 2011; Usher & Neisser, 1993). Further, not all studies find developmental differences for negative emotional information (Chae et al., 2018; Cordon, Melinder, Goodman, & Edelstein, 2013). The question thus becomes whether memory for these events can then persist into adulthood.

The research thus far supports the retention of highly negative, emotional memories for many children (at least by 2 or 3 years of age), even years later (Bauer & Larkina, 2014; Fivush et al., 2004; Peterson, 2015; Quas et al., 1999). One consideration about these studies, however, is that often (but not always), the children were interviewed close in time to the event and then again over the years. The act of testing could itself help keep the memories alive.

In research by Peterson and Whalen (2001) and Peterson (2015), adolescents and elementary school-aged children recalled a medical emergency that occurred approximately 5–10 years prior (when the participants were between 2 and 5 years of age). Participants showed excellent memory for the injury that they sustained (necessitating emergency room medical treatment) over a decade later. There was, however, degradation in their memories for details of the hospital experience itself, which was possibly not as unexpected, frightening, novel, or life-threatening as the injury. Even participants who had been only 2-years-old at the time of their injury recalled a considerable amount of detail, although less than their older counterparts, thereby violating the predictions of infantile amnesia that children so young would have no memory for the events later (Peterson, 2015).

Not all details were equally remembered over time. High stress levels at the time of the event had minimal effect on memory for the injury, which arguably would be more comparable to the memory of childhood sexual assault. High stress levels did, however, mediate children's recall for central components of the hospital event. The more stressed the child, the more likely he or she was to have more complete recall of hospital central details (Peterson, 2015; Peterson & Whalen, 2001). Similar results emerge in Fivush et al.'s (2004) study in which children, 3–4 years old when Hurricane Andrew occurred, were able to remember it approximately 6 years later. Children in that study had richer memory for details regarding the aftermath of the

hurricane than they did for the hurricane itself and more for the hurricane than the preparations before the hurricane arrived.

These findings, that children can remember an event but often not the associated details years later, highlight an important question in studying memory for forensically relevant memories: individuals might be able to remember that an event occurred but are they able to remember sufficient charging information? In other words, with time, as the details of the event might fade, does enough remain such that a prosecution may fairly proceed?

What is also surprising about some of these studies is that children who were quite young at the time of encoding were able to accurately recall their experiences years later, if not in full, at least in part. Partial memories and memory fragments could be forensically important if they contain legally relevant information. Prior research generally reveals that older children and adults can recall few, if any, events that occurred prior to 3–4 years of age (Bauer, 2015; Quas et al., 1999), again with a few participants able to recall events from around 2.8 years of age (McWilliams et al., 2013; Usher & Neisser, 1993). However, in the Fivush et al. (2004) study, children were as young as 3 and 4 when they experienced the storm and still were able to recall the event 6 years later.

Bauer (2015) suggests that infantile amnesia mimics the forgetting curve that we previously discussed. That is, with time, forgetting initially occurs with a steep and fast decline but this curve stabilizes (or flatlines) such that individuals retain a small (but perhaps important) subset of their early memories. And, as the research by others reviewed above suggests, these memories encoded in childhood might persist for a decade later or more (Fivush et al., 2004; Peterson, 2015).

Further, to the extent that children have aged by the time of recall, they could also benefit from developmental changes, such as improved language and narrative abilities, metamemory strategies, and source monitoring abilities (Goodman, Ogle, et al., 2014) that can aid in improving their memory accuracy. One would thus predict that delays in recall could, on some measures, improve children's memory performance. There is support for such an idea in that Peterson (2015) found that participants who were in their adolescence at the time of recall provided more correct details a decade after the original event than they did previously. Fivush et al. (2004) also found that children's memory for Hurricane Andrew was more complete years later when the children were 9- to 10-years-old than initially when the children were preschoolers. This type of finding could be used to justify the legal system's rule that competence of child witnesses is determined at the time of testimony rather than at the time of the event, even if the child was quite young (and deemed by the court as incompetent to testify) at the time of the criminal act. That said, participants who were closer to 5 at the time of the event were able to recall more details than those who were 3 (Peterson, 2015).

One potential rationale for young children remembering information years later is that they have had subsequent discussions (formal and informal) regarding the target information. Interviews are thought to have both beneficial and detrimental effects on memory. Although discussions with others regarding the event in question allow for rehearsal, it also introduces opportunity for suggestive comments or

misleading questions to taint memory (Fivush & Saunders, 2015). Research thus far, however, calls into question whether intervening interviews help or hurt later memory accuracy (Goodman, Goldfarb, Quas, & Lyon, 2017; Quas et al., 2007). The number of interviews between encoding and recall does not always predict overall memory performance (Peterson, 2015). Strength of the original memory trace could be an important factor, as repeated misleading questioning can improve children's and adults' memory performance if the original memory is strong (Goodman & Quas, 2008; Peterson, Parsons, & Dean, 2004; Putnam, Sungkhasettee, & Roediger III, 2017). Future work, however, should consider what questions were asked at these interviews, which points were raised, and whether memory for those specific points improves. As forensic interviews are likely to focus on key details of the case, an important question is if these interviews help improve memory (or also increase suggestibility) for those key issues.

Adults' Memory for Childhood Maltreatment

As memories sometimes can and do persist beyond the boundaries of childhood, the question then becomes: Which of the memories are retained? Which memories show the resilience that allows them to be remembered over the long haul? In addition to the childhood traumas discussed above (e.g., substantial injury, natural disasters), another category of traumatic memories that might be particularly resistant to forgetting over time is memory for childhood maltreatment. There are, however, a number of ethical and empirical limitations inherent in the study of abuse and neglect, including lack of random assignment, difficulty in obtaining confirmatory information, and the confounding effects of trauma. Despite these limitations, a handful of studies thus far have examined adults' ability to accurately remember documented abuse-related events decades later, as described next.

Seminal research on adults' memory for child sexual assault was conducted by Linda Williams (1994). In her study, women with documented childhood sexual abuse histories were interviewed about whether they had previously experienced maltreatment. Despite prior documentation of the sexual abuse having occurred, a substantial proportion of the women (approximately 38%) did not disclose this trauma in the interview. Other studies similarly find that adults often fail to report sexual abuse. Widom and Morris (1997) interviewed a similar sample of men and women as Williams (1994) and found that around 37% of participants with a substantiated history of abuse did not report having experienced any such trauma. In the Williams (1994) study, there were a number of predictors of disclosure as an adult of the experience of child sexual abuse. First, individuals who were older (as compared to younger) at the time of the sexual abuse were more likely to disclose. Second, the relationship to the perpetrator predicted disclosure, with those who did not know the perpetrator being more likely to disclose than those who did.

Not all studies find such a high rate of adults' failure to disclose or remember child sexual abuse. In one such study, researchers analyzed whether adults could

accurately remember child sexual abuse up to 21 years after the alleged assault. Over the course of a phone interview, participants were asked about their prior trauma histories, including child sexual abuse. A substantial proportion of the adults recalled the event that was the focus of the earlier prosecution that had taken place a decade earlier (around 81%; Goodman et al., 2003).

Adult disclosure rates could be influenced by the sample studied, such as whether the individuals interviewed were from a sample of participants whose allegations were all part of criminal prosecutions. This is a concern because cases are likely to be prosecuted if the children had disclosed, and it is also possible that the prosecution itself affected memory (Freyd, 2003). In any case, in the Goodman et al. project, as details of the alleged assault were documented in childhood, the researchers could also analyze predictors of accuracy of recall. Participants who experienced more severe abuse and those who stated that the sexual abuse was the most traumatic event in their lives were more likely to accurately recall the abuse decades later (Alexander et al., 2005; Goodman, Quas, Goldfarb, Gonzalves, & Gonzalez, 2018; Quas et al., 2010).

In a longitudinal study of adolescents' recollections of family violence (not concerning child sexual abuse but still relevant) by Greenhoot, McCloskey, and Glisky (2005), 20% of the adolescents failed to remember or report the child abuse or punishment documented 6 years prior. Although few participants exposed to escalated violence reported it, this could represent their continued fearfulness or discomfort with disclosure. Of interest, having a stronger negative attitude toward the abuser was a predictor of disclosure/remembering.

In addition to questioning adults about child maltreatment experiences, studies have also examined children's and adults' memories for abuse-related events, including for genital touch as part of a forensic medical examination. In recent research conducted by Goldfarb et al. (2019), adults were questioned about being previously involved in a child maltreatment investigation that took place in the 1990s. As children, 3- to 17-years-old, the participants had resided briefly in a forensic medical unit (Eisen et al., 2007; Eisen, Qin, Goodman, & Davis, 2002). During their stay at the unit, almost all of the children experienced a forensic medical examination that included swabbing of the genital and anal areas to check for venereal disease and other signs of assault. Twenty years later, these same individuals, as adults, were interviewed as to their memory for their stay at the hospital unit, including the genital examination.

Approximately half of the adult sample was able to recall the prior genital touch (Goldfarb et al., 2019). Of those who recalled it, individuals who had experienced child sexual abuse were more likely to report the genital examination touch decades later. This finding parallels other research showing that maltreated children exhibit increased memory for abuse-related materials (Otgaar, Howe, & Muris, 2017). Within a large sample of children with maltreatment histories, Eisen et al. (2007) interviewed 3- to 16-year olds about an anogenital exam and clinical assessment that they experienced. In this sample, those with sexual or physical abuse histories, often even the youngest participants, made relatively fewer omission errors for abuse-related questions in comparison to their counterparts without such histories.

Thus, adults can remember maltreatment or traumatizing events decades later, and for some adults, there is correlational support that having previously experienced trauma improves one's ability to remember the stressful childhood event.

Given this literature, a fair argument can be made that degradation of memory quality alone is an insufficient reason to bar historic child sexual abuse cases from being legally heard. Many adults appear able to accurately recall such events. In many instances in which these cases are moving forward or such evidence is being admitted in hearings or proceedings, the question appears to have shifted from whether such evidence should be admitted to what predicts the veracity of the evidence once it is permitted. In other words, what are the determinants of the accuracy of these memories? Utilizing the data from one of our longitudinal studies, we consider one often presumed indicator of accuracy, specifically, the language used to describe the event at issue.

How Adults Describe Childhood Sexual Abuse: The Language Used

Important theoretical and applied questions have been raised about how developmental growth, between encoding and recall, changes the ways in which individuals describe early life-incidents, especially those of a traumatic nature (Goodman et al., 2018; Howe & Knott, 2015). As applied to historic child sexual abuse cases, the core of this debate revolves around the following question: When adults disclose childhood trauma, what language do they use? As the memories were encoded in childhood, one might expect individuals to employ more child-like concepts or frameworks. Indeed, some researchers have noted that utilization of more sophisticated language (e.g., adult sexual terms) to discuss events encoded in childhood could indicate that the adult memories are false (Howe & Knott, 2015)

For example, in a recent criminal historic child sexual abuse case, a defense expert described what he considered to be a factor indicating that the victim likely had irrevocably distorted memories. Specifically, the expert noted that adults and adolescents who testify as victims of earlier childhood sexual abuse frequently recall information that young children simply do not encode. He posited that when adults and adolescents recall childhood events in an adult-like or highly detailed fashion, this is likely diagnostic of a memory distortion rather than a genuine report.

However, there is another point of view on this matter, supported by empirical research: Adult language might not signal change to the memory itself but, instead, could reflect victims' ability to describe their memories in adult terms. This might also reflect improvements in vocabulary, narrative skill, knowledge base, and use of "conversational rules," often called Gricean (1975) maxims. These four maxims, as applied to adult conversations, are the following: *Quantity*, one tries to be as informative as one possibly can, and provide as much information as is needed, but not more; *Quality*, one tries to be truthful and does not provide information that is false;

Relation/Relevance, one tries to be relevant and pertinent to the topic of discussion (“on point,” as attorneys might say); and *Manner*, being clear and orderly, and avoiding ambiguous, vague, and obscure expressions. Note, however, that the maxim of *manner* includes lack of vagueness, which can be difficult to achieve when talking about sexual experiences, such as criminal sexual activity experienced by children.

A simple thought experiment is relevant to the point of using adult language to recall information encoded in childhood. Many adults can likely think back to the house they lived in as a young child of say 3, 4, or 5 years of age, which is especially relevant to this example if one moved shortly thereafter and has not been back. Although one would have encoded the layout of the house as a child, in describing it now as an adult, the person would likely use adult language and understanding to do so, including for the salient or special parts of the house, which might remain detailed and accurate in one’s memory. If the adult had the opportunity to go back to the house, the adult could verify the veridical versus non-accurate components of the memory compared to the reality.

As applied to historic cases of child sexual abuse, more convincing than a thought experiment are actual data on adults’ language to describe past genital touch. Our unique dataset allows us to consider the language adults actually use when discussing a legally relevant verified event that transpired in childhood. Specifically, when adults describe genital touch that occurred during a forensic anogenital examination in childhood, does the language reflect more adult- or child-like concepts, phrasing, or syntax?

In our research, we asked adults to answer free-recall and open-ended questions regarding a medical examination involving genital touch (e.g., “Where did the doctor touch you?”), and their answers were transcribed. We then reviewed responses that were de-identified of all information other than the ages of the participants at encoding in the mid-1990s (Time 1) and their gender. We compared, on the one hand, what the individuals had said about the anogenital touch when asked within a few days of the experience while they were still children to, on the other hand, the adults’ language about the anogenital medical examination when questioned 20 years later. We could therefore examine, at least anecdotally, if the participants’ use of adult-like language reflected error or phrasing that was not available, or at least not used, in childhood.

Variability and Nonspecific Language

Overall, our transcripts reflected considerable diversity in the description of genital touch; the nature of this language varied at both time points. Many of the participants used ambiguous or nonspecific language in childhood and adulthood, violating the Gricean maxim of *Manner*, likely because genital touch is a taboo, embarrassing act that is not typically the topic of polite adult conversation and that even children try to avoid talking about in detail (Leander et al., 2007). For instance,

a male who was 5-years-old at Time 1 was asked shortly after the forensic examination, "Where did the doctor touch you?" and he responded, "On my arm." When asked more directly "Did the doctor put anything inside you when she checked you?," he responded "No" leaving out all mention of the genital swabbing and touch. Of importance, his response, approximately 20 years later, makes it clear that he had in fact encoded the genital part of the examination, because as an adult being questioned by us about the event, he stated: "They check your private part...I remember like they checked us—like they checked our private parts...they was lifting our private parts up and like checking around it with gloves and stuff. I don't know what they were doing that for, but they did that, like they had gloves and stuff on..."

Even participants who were 3-years-old at Time 1 and who often failed to disclose the anogenital part of the examination when questioned initially, were able 20 years later to provide the core information. For example, one adult (a non-disclosing 3-years-old at Time 1) stated, "Um well, you know, they were examining me for molestation, so they were putting things inside of me... I remember feeling lots of pain and things going inside me... and just a lot of people hovering in that area." (There were four people in the room: the doctor, two nurses, and a research assistant.)

Some adults utilized child-like language at both Time 1 and Time 2. For instance, at Time 1, an 8-year-old girl who was asked what happened at the medical examination described first a few body parts that had been examined, specifically "my stomach, my legs..." and then she went on to say "everywhere else," avoiding as a child direct mention of genital touch. Twenty years later, she was also vague, describing it as "...I just know that they were examining me down there." One 11-year-old participant described at Time 1 that the female doctor "... checked my privates. She asked me if someone felt your privacy or had been in my privacy." As an adult, the same participant also described the procedure in somewhat oblique terms. Specifically, she stated, "Like they was asking me a lot of questions like they was, they actually examined my body ... And so they focused on, examined us to make sure that we weren't getting hurt, like our body parts, legs, you know. Stuff like that. And making sure no one touched us and stuff." And some children who had avoided disclosing genital touch at Time 1 then, as adults at Time 2, used words that might be considered child-like. The adult male mentioned previously who was only 5-years-old at Time 1, referred to the wooden sticks used in the examination arguably in childhood terms, saying, "They had popsicle sticks, lifting our penises up and stuff, and looking around." (That said, it is not clear what to call a tongue depressor used in that fashion.)

Adult Terms and Understanding

A number of female participants at Time 2 called the swabbing with a Q-tip a "pap smear," showing an adult-level of knowledge about the nature of the medical procedure that was conducted in childhood, albeit reflecting a common misunderstanding

that the term “pap smear” applies to all pelvic exams (Blake, Weber, & Fletcher, 2004). One participant, who was 12 at the time of the examination, described it at Time 1 as “he got a Q-tip and touched me on my bottom.” Approximately 20 years later, that same participant used more clinical terms to describe the event and also placed it in the larger forensic context. Specifically, she stated that “...because of my age and because of um what I had [went] through they had to do you know...uhh...the pap smear, all of that different stuff to make sure how I was doing physically.”

Many individuals showed meta-cognitive awareness that they had reframed the memory into a more adult-like understanding of the event. When one participant was 11, she stated, as did others, that “[the doctor] touched me down there, my vagina, when she was examining me with the Q-tips.” As an adult, she noted that she had gained further clarity on the event. “All I remember was that they gave me a pap smear. And now I know it’s a pap smear because you know as an adult”

Some of the participants, even older than 3 years of age at Time 1, did not describe the genital touch at all during the childhood memory interview. It was not until adulthood that they recounted the event both in context and in language. One individual, who did not say anything when asked as a 9-year-old about the forensic genital touch, clearly articulated the event as an adult. She explained, “I remember they had like a Q-tip, cotton swab ... And I remember they swiped it down there.” She then elaborated on the purpose of the examination: “And also I remember, um, they also would—they would also check us to—to see if we’ve been molested or whatnot.”

Surprisingly, some children were more direct or utilized more adult-like language in childhood than they did as adults. One 10-year-old stated at Time 1 that they were “checking my penis out and she told me to bend over and she checked out my behind.” As an adult, that same individual stated that “[i]t’s not your normal physical exam, it like, it was more—more personal dealing with my private parts.” Another 15-year-old described at Time 1 the doctors as examining his “penis” and “behind” but said as an adult that they “did a full body exam I believe. Um, checking us to see if we [were] molested or touched or anything.”

Does Adult Language Mean the Memory Is False?

Thus, from our preliminary review of the statements made by the participants at both Time 1 and Time 2, the maturity of the language varied widely among participants, arguing against the notion that use of adult language or adult concepts about a childhood experience indicates falsehood. Some participants utilized increasingly complex or adult-like terms or language at Time 2 than they did at Time 1, some utilized similarly simple or vague language in childhood and adulthood, and others became increasingly indirect with time. It could be that differences in the utilization of this language relate to individual predictors, such as verbal fluency or comfort level in discussing intimate or traumatizing topics.

In the end, our preliminary review of the data reveals that, when discussing a sensitive event involving genital touch that occurred during childhood, the developmental complexity of the language varies widely. This makes us doubt whether the maturity level of the language utilized is strongly indicative of whether the events in question actually occurred. Future research could elaborate on predictors of the language utilized. Of key interest in the future concerns the best way to elicit accurate recall of genital touch or other embarrassing or taboo topics with a level of specificity and detail sufficient for legal action.

However, there appear to be important individual differences at play in how accurately adults remember early traumatic events. We next turn to individual difference predictors of long-term memory for child sexual abuse. Specifically, we consider two predictors that relate to adults' memories for trauma-related childhood experiences: attachment and psychopathology.

Attachment and Memory

A growing body of research examines the association between adult attachment and long-term memory for attachment-related events, including child sexual abuse. Many child sexual abuse cases, including historic ones, qualify as attachment-related because close relationships are often involved (e.g., between the victim and perpetrator or between the child and the disclosure recipient). A core part of attachment theory deals with individual differences in the processing of experiences that involve safety, distress, and intimate relationships, especially in regard to negative life events (Bowlby, 1969). These individual differences in processing can be expected to affect memory.

Much of the relevant adult attachment research has utilized the Experiences in Close Relationships (ECR) questionnaire, a self-report measure of adult attachment (Hazan & Shaver, 1987). The ECR contains two main scales: anxiety and avoidance. Anxiety refers to hyperactivation of the attachment system, such that the individual is needy, clingy, hypervigilant, and often worried about close relationships. Avoidance refers to attempts to deactivate the attachment system, seeking to avoid being needy or vulnerable in intimate relationships, not communicating about attachment-related negative events, and not help-seeking (Mikulincer & Shaver, 2017). In terms of long-term memory for stressful and traumatic childhood events, the avoidance dimension has proven the most useful to understanding memory accuracy to date (e.g., Alexander, Quas, & Goodman, 2002; Edelman et al., 2005).

Adult avoidant attachment is related to long-term memory for emotional events that occurred in childhood. Avoidant adults are less likely to remember emotional events from childhood, especially if the events were negative (Mikulincer & Orbach, 1995). According to attachment theory, avoidant adults likely evince a greater degree of defensiveness and anxiety when recalling childhood memories compared to anxious and secure adults who have greater mental access to this information. Avoidance of negative memory could be a deactivating strategy, in which the

avoidant individual limits attention to material that could activate the attachment system, a process known as defensive exclusion (Bowlby, 1980; Edelman, 2006). In the face of remembering childhood sexual abuse, avoidant individuals might have restricted reports of these memories because of defensive processes that limit encoding, storage, and/or retrieval of the maltreatment.

Edelman et al. (2005) investigated whether attachment-related individual differences are associated with adult long-term memory accuracy of child sexual abuse experiences that resulted in criminal court prosecutions. As attachment theory would predict, memory accuracy was characterized by an interaction between child sexual abuse severity and attachment avoidance. Specifically, non-avoidant (i.e., more attachment secure) adults demonstrated greater memory accuracy about central details for severe cases of sexual abuse. In contrast, avoidant adults who had experienced severe child sexual abuse demonstrated relatively poor recall of central details about their childhood abuse experience (Edelman et al., 2005). The poor recall could reflect defensive exclusion, resulting in loss of detailed memory, or at least a less complete memory report, through avoidance of a negative memory that would activate their attachment system (e.g., make them feel vulnerable and needy) and/or not wanting to talk about the severe abuse (including with researchers) or not wanting to think about it. Thus, although victims can and do show accuracy in recalling traumatizing events, including child maltreatment, decades later, there is evidence that the detail of memory or report might be partially related to attachment security.

Currently, few studies exist examining the relation between adult attachment security and long-term memory for child maltreatment. What has been empirically established is that differences in how emotional information is later recalled appear in adulthood.

Psychopathology, Trauma, and Memory

Another potential influence on the accuracy of long-term memory is psychopathology. It is well documented that exposure to childhood traumas, including maltreatment, increases the risk of adult mental health problems (e.g., Finkelhor, 1984; Widom, Dumont, & Czaja, 2007). Psychopathology also plays a role in individuals' abilities to remember traumatizing events years later (Goldfarb et al., 2019). For the purpose of this chapter, we briefly review two dimensions of psychopathology symptoms that relate to the aftermath of child sexual abuse and also to individuals' ability to recall traumatizing events decades later: post-traumatic stress and depression. After briefly defining each type of psychopathology, we discuss research on the role these two psychopathology symptoms appear to play in long-term memory for a forensically relevant event. We should state at the start, however, that we do not review here studies on individuals with psychosis or thought disorders that are documented to involve confabulation.

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), post-traumatic stress disorder (PTSD) results from exposure to a traumatic event that then is persistently re-experienced through flashbacks, nightmares, or intrusive thoughts. Hypervigilance and/or avoidance of trauma-related feelings, experiences, and reminders (i.e., triggers) also characterize PTSD symptomatology. Individuals with PTSD experience negative thoughts and/or feelings (e.g., self-blame, feeling isolated) and increased arousal (e.g., heightened startle reaction, irritability). Around a third of all people who have experienced maltreatment are diagnosed with PTSD during their lifetime (Browne & Finkelhor, 1986), and many others with adverse childhoods exhibit PTSD symptomatology (Berntsen et al., 2012; Finkelhor, Turner, Hamby, & Ormrod, 2011; Finkelhor, Oromon, & Turner, 2009; Perry & Azad, 1999; Silva et al., 2000; Vranceanu, Hobfoll, & Johnson, 2007; Widom et al., 2007).

There are concerns that PTSD symptoms could have a detrimental effect on memory for negatively related events. However, in one of the few studies analyzing the relation between psychopathology, maltreatment, and long-term memory for child sexual abuse, PTSD symptoms predicted the accuracy of long-term memory for the sexual assaults. Utilizing real-world prosecution cases, Alexander et al. (2005) examined predictors of victims' memory accuracy and errors 12–21 years after the documented child sexual abuse had ended. Severity of PTSD symptoms in adulthood was positively associated with memory accuracy. Moreover, participants who reported the child sexual abuse as their most traumatic life event exhibited memory accuracy regardless of their level of PTSD symptoms. These findings could point to the reinforcement of memories by re-experiencing the trauma through intrusive thoughts, reminders, or discussing it with close others (e.g., therapists, partners). Moreover, this evidence shows that memory for emotional events often endures and that trauma-related information is generally retained well, perhaps especially among victims with PTSD (Paunovic, Lundh, & Öst, 2002).

Childhood maltreatment also increases the chances of symptoms of depression (Jaffee et al., 2002; Kaplow & Widom, 2007; Toth, Manly, & Cicchetti, 1992; Widom et al., 2007). In fact, depression is often co-morbid with PTSD. Depression (in general) is associated with negative affectivity, loss of interest, changes in sleep, feelings of hopelessness, and/or lack of pleasure in activities once formerly enjoyed (American Psychiatric Association, 2013).

Studies of long-term memory for traumatizing childhood events reveal that increased psychopathology might at times be associated with increments in the ability to recall such events. In our longitudinal study analyzing adults' abilities to remember a genital examination that occurred decades prior as part of a forensic medical check-up, participants who had increased depressive symptoms were more accurate in their memory for the event (Goldfarb et al., 2019). It could be that the participants with increased depressive symptoms frequently rehearsed the event (Kuyken & Howell, 2006), thereby increasing reinstatement of what happened. Past studies have shown that depression severity is associated with intrusive thoughts of past traumatic events, including child sexual abuse (Kuyken & Brewin, 1994), and this might lead to greater accuracy.

Thus, studies so far reveal that certain psychopathology symptoms could have a buffering effect on memory (Goodman et al., 2018). These findings are quite the opposite of what one would expect from studies of memory for neutral materials. Although considerable past research has largely focused on PTSD or depression and memory deficits (e.g., PTSD and memory for semantically related word lists and over general memory and depression; Bremner, Shobe, & Kihlstron, 2000; van Vreeswijk & de Wilde, 2004; Williams, 2006), more recent findings allude to the differential impact that mental health symptoms might have on traumatic memory specifically (Goldfarb et al., 2019).

False Memory for Child Sexual Abuse

This chapter would not be complete without a discussion of false memory for child sexual assault. False reports of child sexual abuse do occur, and false memory might be behind some of them (Bottoms, Shaver, & Goodman, 1996). Although laboratory studies abound in which researchers implant false memories, the events fall short of child sexual abuse on a number of dimensions that affect memory (e.g., personal significance, taboo and secretive nature of the act, shame and embarrassment, and repetition), as it is typically considered unethical to try to implant a false memory of falling victim to a traumatic childhood criminal act, at least using what researchers usually consider to be the paradigm for implanting a false memory.

Anecdotally, we can be confident that reports of child sexual abuse by insects from Mars, cults of non-human satanic worshippers, and space aliens are false. Thus it is of interest that some retractors of claims of satanic ritual abuse explain that they had a false memory, or at least a false belief, brought on by egregious clinical techniques (e.g., hypnosis and sodium pentothal use) or religious practices (e.g., churches promoting the idea that Satan is behind all wrongdoing including rampant child sexual abuse). In our own research on Satanic ritual abuse, we detected such patterns in the reports we received (Bottoms et al., 1996).

Demonstrating false memory of child sexual abuse in the laboratory context presents challenges. Arguably, the closest to attempting that was in a study conducted by Kathy Pezdek and colleagues: They were able to implant in adults a “false memory” of being lost in a mall as a child but in using the same implantation techniques, found there were zero false memories for a childhood enema (Pezdek, Finger, & Hodge, 1997). When switching to another index of false memory, the Life Events Scale (LES; 1 = definitely did not happen to me prior to age 10, 8 = definitely did happen to me prior to age 10), and providing greater contextual and knowledge information, Pezdek, Blandon-Gitlin, Lam, Hart, and Schooler (2006) still found that the majority of adults provided exactly the same 8-point rating for the enema across time points (before and after the false information was presented). Even in the most falsely suggestive manipulation in the study, the mean change was only 1 point on the 8-point scale. Pezdek and colleagues concluded that beliefs about the occurrence of salient or taboo childhood events are fairly stable, not highly malleable.

Others have written about the methodological and statistical problems with false memory research that uses the implantation or LES methodology (Brewin & Andrews, 2017; Koss et al., 1995), especially as applied to memory for personally significant, traumatic, and/or highly negative childhood events. In addition to those problems, these researchers claim that the ecological validity of most of these laboratory studies can be questioned. As the present review suggests, generalizations from laboratory studies using word lists, stories, videos, and the like, might not be fully applicable to historic cases of child sexual abuse. That being said, false allegations and wrongful convictions do occur. Every such wrongful conviction is a stain on the legal system that can and must be addressed through further research and reform.

Conclusion, Future Directions, and Proposed Legal Reforms

The literature thus far suggests that adults often can and do remember emotional or traumatizing events from childhood, including child sexual abuse, years and decades after they occurred. Time appears to predict degradation of many memories, but there are certain types of memories, including traumatic ones, that show substantial resilience to this effect. This is not to say that memory is perfect or like a video recording. It is not. This is not to say infantile amnesia does not exist for older children and adults. Apparently, it does. And it is not to say that false reports or false memories never occur. They do. But it is to say that, at present, there is support for the argument that degradation in memory alone should not stand as a barrier to extending or terminating the statute of limitations for crimes of violence perpetrated against children. That said, there are, however, a number of areas where additional research is needed before firm conclusions are drawn. Of note, most of the research to date on adults who suffered childhood trauma has focused on individuals who have experienced child sexual abuse. There is pragmatic sense to this approach, as child sexual abuse is more frequently prosecuted in the criminal courts than other forms of maltreatment (Cross & Whitcomb, 2017; Goodman, Quas, Bulkley, & Shapiro, 1999). However, without sufficient research on other crimes that children experience or witness, it is unclear whether these memory phenomena are unique to child sexual abuse or more generalizable to other forensically relevant acts, such as domestic violence and physical abuse (Greenhoot et al., 2005) or having witnessed a murder (McWilliams et al., 2013). In such cases, the child is a witness rather than a direct victim, and there could be less shame (but possibly more horror) associated with the event. Moreover, memory after even longer delays than the retention intervals studied here should be examined.

We look forward to further research on the language used by adults in describing childhood traumatic events. The language used in our longitudinal study makes clear that events experienced (encoded) in early childhood, at least down to 3 years of age, can be described in adult terms 20 years after the childhood experience. Some of our participants not only provided more detail in adulthood than they did

in childhood, but also the language used was more complex and adult-like. Others did not reveal any change and stayed vague in their language across both time points. It appears that the developmental complexity of language does not, in and of itself, predict accuracy or inaccuracy of memory for the underlying event. That said, identification of clear developmental patterns and unique predictors of the language used awaits further research.

Further research is also necessary to understand the role that individual differences play in the accurate retention of memory from childhood into adulthood. Research to date indicates that attachment security predicts long-term memory completeness for emotional events. The evidence thus far suggests that avoidantly attached adults might report or remember less information than more securely attached adults about severe childhood sexual assaults. If the issue, as we suspect, is discomfort in reporting rather than absence of memory, greater rapport building or other supports during interviews might be needed especially for such individuals (Milojević & Quas, 2017). Future research will help us better understand how attachment-related information is processed, stored, and recounted, and if there exist differential pathways to long-term memory based on attachment orientations in combination with factors such as the severity, unpredictability, and valence of the attachment-related event.

There is also reason to believe that some types of psychopathology symptoms (e.g., depression, PTSD) might bolster retention of core childhood events. Whether trauma-related psychopathology symptoms, short of psychosis at least, facilitate the moving of childhood trauma memories into the permastore is a possibility particularly worthy of greater research. Although substantial research on psychopathology exists showing deficits in memory for such neutral material as word lists (Bremner et al., 2000), less research has examined the relation between trauma-related psychopathology and adults' long-term memory accuracy for documented childhood trauma. Additional work could first determine the replicability of our findings and, if replicable, elucidate underlying mechanisms.

The legal implications of this literature on decisions regarding the statute of limitations are substantial. The studies we reviewed here argue against restrictive statutes of limitations. This is also the conclusion reached by the Attorney General of Pennsylvania after a grand jury investigation into child sexual abuse by Catholic priests. The 23-member grand jury reported that over more than six decades, 301 priests in six dioceses abused more than 1000 children whose identities it found in church records. The grand jury concluded, "priests were raping little boys and girls, and the men of God who were responsible for them not only did nothing; they hid it all. For decades." Furthermore, the grand jury stated, "First, we ask the Pennsylvania legislature to stop shielding child sexual predators behind the criminal statute of limitations." Referring to alleged victims who testified before the grand jury, who were in their 50s to 80s, "We saw these victims; they are marked for life... Many of them wind up addicted, or impaired, or dead before their time ... These victims ran out of time to sue before they even knew they had a case; the church was still successfully hiding its complicity" (PA Grand Jury Report Interim, 2019, pp. 7–8; see also Johnson, 2018).

We contend that determinations of the veracity of child sexual abuse allegations in historic cases are best addressed through the evaluation of individual testimony and case facts. Our suggestion is opposed to a general barring of such claims based on a timeline that fails to respect the fact of delayed disclosure into adulthood of the experience of child sexual abuse. Willingness to come forward and disclose abusive childhood incidents remains an important barrier to litigation of these cases. Although false reports must also be guarded against with fearless effort, the cost of assuming falsehood is also great. More than ever, we must address not only statutes of limitations but also the need for community, family, and government supports for people who bravely and truthfully choose to disclose sexual victimization experienced as children.

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