

Report for the Royal Commission into
Institutional Responses to Child Sexual Abuse

JULY 2017

EMPIRICAL GUIDANCE
ON THE EFFECTS
OF CHILD SEXUAL
ABUSE ON MEMORY
AND COMPLAINANTS'
EVIDENCE

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The Royal Commission into Institutional Responses to Child Sexual Abuse commissioned and funded this research project. The following researchers carried it out:

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Disclaimer

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Royal Commission into Institutional Responses to Child

Sexual Abuse

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THE EFFECTS OF CHILD SEXUAL ABUSE
ON MEMORY AND
COMPLAINANTS' EVIDENCE**

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Preface

On Friday, 11 January 2013, the Governor-General appointed the six-member Royal Commission into Institutional Responses to Child Sexual Abuse (the Royal Commission) to inquire into how institutions with a responsibility for children have managed and responded to allegations and instances of child sexual abuse.

The Royal Commission's role is to investigate where systems have failed to protect children, and make recommendations on how to improve laws, policies and practices to prevent and better respond to child sexual abuse in institutions.

The Royal Commission has developed a comprehensive research program to support its work and inform its findings and recommendations. The program focuses on eight themes:

1. Why does child sexual abuse occur in institutions?
2. How can child sexual abuse in institutions be prevented?
3. How can child sexual abuse be better identified?
4. How should institutions respond when child sexual abuse has occurred?
5. How should government and statutory authorities respond?
6. What are the treatment and support needs of victims and their families?
7. What is the history of particular institutions of interest?
8. How do we ensure the Royal Commission has a positive impact?

This research report falls within theme eight.

The research program means the Royal Commission can:

- obtain relevant background information
- fill key evidence gaps
- explore what is known and what works
- develop recommendations that are informed by evidence, can be implemented and respond to contemporary issues.

For more on this program visit www.childabuseroyalcommission.gov.au/research.

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Table of contents

Executive summary	1
Chapter 1 Aims and objectives of the report	7
1.1 The memory of victims of child sexual abuse.....	7
1.2 Aims of the report.....	9
1.3 Contemporary guidance on memory and the law.....	11
1.4 Methodology.....	13
Chapter 2 Misconceptions about memory.....	18
2.1 Misconceptions about the nature of human memory	20
2.2 Misconceptions about delay and memory accuracy	25
2.3 Misconceptions about the effects of trauma and emotion on memory.....	28
2.4 Misconceptions about memory for recurring events.....	29
2.5 Misconceptions about investigative interviewing	30
Chapter 3 Overview of forensic memory research	33
3.1 The research context	33
3.2 The dominance of eyewitness memory research.....	34
3.3 Methods to study memory	37
3.4 Assessing the generalisability of the research.....	42
Chapter 4 The nature of human memory.....	46
4.1 General memory processes	46
4.2 Factors that preserve memory	51
4.3 Autobiographical memory	53
4.4 Memory development and suggestibility.....	57

Chapter 5 Effects of delay on memory.....	63
5.1 Delay between the time of abuse and reporting.....	64
5.2 Delay between abuse and the investigative interview.....	65
5.3 Delay between investigative interview and trial	68
5.4 The effects of delay on adult memories	71
5.5 Historical cases of child sexual abuse	72
5.6 False memories of child sexual abuse	75
Chapter 6 Effects of emotion and trauma on memory	78
6.1 Types of trauma	79
6.2 Individual differences and trauma.....	81
6.3 Effects of trauma on non-abuse memories	83
6.4 Effects of trauma on encoding of child sexual abuse memories.....	88
6.5 Effects of trauma on retention of child sexual abuse memories	90
6.6 Effects of trauma on retrieval of child sexual abuse memories	91
Chapter 7 Memory for recurring events	97
7.1 Memory for recurring events of abuse.....	97
7.2 Memory for details of a particular event in a series	99
7.3 Memory for temporal location in recurring events.....	104
7.4 Estimates of the frequency and duration of recurring events	107
7.5 Memory for the first and the most recent event in a series	108
Chapter 8 Eliciting memory reports	110
8.1 Best-practice features of interviews to enhance memory	111
8.2 Eliciting a full account of events	115
8.3 Eliciting reliable information.....	122
8.4 Accommodating individual differences	127

8.5 Interview training and operational implementation	128
Chapter 9 Education on memory	131
9.1 Guidance on memory and the law.....	131
9.2 Education and training on memory	135
9.3 Educative expert witness evidence.....	136
9.4 Judicial directions on memory	138
9.5 Recommendations for future research on educative interventions.....	141
Chapter 10 Conclusion	142
Glossary	147
List of appendices.....	161
Appendix 1.1 Draft report feedback form	162
Appendix 1.2 Attendees at the Royal Commission’s Public Roundtable	164
Appendix 1.3 True/false memory items	166
Appendix 8.1 Empirical sources for Table 8.1.....	169
Appendix 8.2 Empirical sources for Table 8.2.....	173
Appendix 10.1 Empirical guidance summary of the effects of childhood sexual abuse on memory and complainants’ evidence.....	178

Executive summary

Aims and objectives of the report

This transdisciplinary report reviews contemporary scientific psychological research on the memory of child sexual abuse as evidence. This report is particularly relevant for police officers, legal practitioners, judges and juries who must assess child sexual abuse victims' memory capabilities and the reliability of their memories. The purpose of the report is to summarise what is known about how victims remember experiences of abuse, how victims optimally remember their experiences, and how this affects their reporting and the evidence given at trial.

In its consultation paper on criminal justice, the Royal Commission highlighted 10 areas where legal expectations seem at odds with victims' memory capabilities. These topics form the focus of this report: (1) misconceptions about memory; (2) victims' ability to provide details and core memories of events; (3) inconsistencies in memory and reminiscence; (4) the reliability of child victims' memory; (5) suggestibility and false memories; (6) the impact of delay on memory recall; (7) memory for traumatic events; (8) victims' memory for persistent sexual abuse offences; (9) children's memory during cross-examination and (10) educative interventions about memory.

This report provides a comprehensive summary of empirical studies on how these factors affect memory. The report was compiled in four phases. First, the results of more than 650 recent empirical studies were summarised in a preliminary draft report. To refine the findings, 23 Australian and New Zealand academics and clinical practitioners with expertise in these matters were invited to provide feedback on the draft report. Third, the key issues were discussed at a public roundtable convened by the Royal Commission. Fourth, the authors consulted the written submissions, feedback forms and transcript of the roundtable proceedings when finalising the report. The language used throughout the report is accessible to an audience untrained in psychology. Technical terms are defined in the glossary.

Misconceptions about memory

Research has shown that police officers, legal professionals, judges, juries and laypersons hold misconceptions about memory that can influence outcomes in cases of child sexual abuse. Misconceptions about fundamental aspects of memory – such as the formation of memory gaps, rates of forgetting and the significance of self-contradictions, inconsistencies and errors – can lead juries to doubt the reliability of evidence given by child and adult victims. Many legal professionals and juries are unaware that these memory features are common and do not indicate memory impairment or dishonesty. Recent research distinguished between a

'common-sense memory belief system', which is made up of constellations of misconceptions about memory, and a 'scientific memory belief system', which is made up of constellations of accurate beliefs about memory. Research on common misconceptions has also revealed that erroneous beliefs are commonly held about each of the 10 topics that are the focus of this report. This report summarises widespread common-sense misconceptions most relevant to child sexual abuse cases, including those about the nature of memory, the effects of delay on memory, memory for traumatic events, memory for recurring events and the impact of interviewing strategies on memory. This report also explains how the criminal justice system relies on inaccurate assumptions about the value of memory inconsistencies, self-contradictions, reminiscence and memory for details as indicators of a reliable or unreliable memory. These empirical foundations establish the need for educative guidance on memory.

Overview of forensic memory research methods

Five research methods applied to memory in forensic contexts are described to review their contributions to assessments of memories of child sexual abuse victims. Controlled laboratory experiments explore causal relationships between variables of interest. Forensic memory research has been dominated by eyewitness research. Eyewitness studies test memory for a staged crime committed by an unknown perpetrator. False memory studies examine how susceptible individuals are to suggestion following exposure to wordlists, post-event misinformation or implanted 'memories'. Child sexual abuse analogue studies assess memories for analogous negative experiences in natural or real-world settings. Field studies are conducted with trauma and child sexual abuse victims. These studies differ in their internal, external and ecological validity. In addition to studies on event memory, research on autobiographical memory is essential to understanding how people form memories of child sexual abuse.

The nature of human memory

Memory is dynamic, reconstructive and subject to many influences. Memories can be adapted each time they are retrieved, so they change over time and minor contradictions are to be expected. Rehearsing a memory (by thinking about it or talking about it) facilitates memory retention and retrieval. Gaps in memory are normal, but central, distinctive and personally significant aspects are likely to be encoded and retained. Distinctiveness may involve novelty, stress, trauma or pain. Recurring events result in the development of a schematic memory, which means that details of peripheral aspects may not be encoded. People report the gist of what happened for similar and recurring events, but do not clearly remember details specific to one instance. Memory for the gist of an event tends to be accurate and long-lasting, but all memories fade over time. Reports given soon after an event are more likely to be detailed. People often remember more information each time they recall an event or experience. Children can provide competent memory reports from an early age,

their ability to tell a coherent narrative about an experience increases with age and varies depending on individual cognitive and social factors. Children and adolescents may be able to recall events that occurred before they reached five to seven years of age, but most adults cannot. Children may require support to retrieve and report what they know. Adults can help children to remember by structuring discussions around key event features. However, what is significant to an adult about an event may not be significant to a child, so memory support should acknowledge and follow the child's contribution. Children report fewer spontaneous false memories than adults, but like adults, they are susceptible to misreporting if asked leading questions.

The effects of delay on memory

Children can remember a remarkable amount of information in response to free-recall questions, even after long delays. The quantity of information recalled decreases over time. Generally, children have been found to make few errors when remembering, and errors that occur after long delays are intrusion errors. Young children tend to forget more rapidly than older children. A child may only acknowledge abuse they experienced at a very young age when they are older, due to their lack of knowledge or awareness at the time of the abuse that the offenders' behaviour was inappropriate. Older children may have memories of sexual abuse but may be hesitant to disclose it, as they are aware of social taboos. As the delay between the investigative interview and the case reaching court increases, children may experience external and internal pressures to recant or they may be exposed to misinformation. Autobiographical memories of abusive events are subject to ordinary forgetting. They can also be modified, strengthened or weakened by reconstructive processes upon retrieval and reconsolidation. Discontinuous memories of unreported sexual abuse elicited during therapy through hypnosis, guided imagery and other techniques have a high propensity for being false, whereas spontaneously recovered memories are associated with forgetting.

The effects of emotion and trauma on memory

It is difficult to draw generic conclusions about the effect of child sexual abuse on children's and adults' memory. Instead, an individualised approach to understanding each complainant is key. It is important to evaluate their interpretation of the incident at the time it occurred, the history since the incident, the nature of their experience, their reaction to the incident and how they have been interviewed and supported since then. General developmental research indicates that the ways in which children respond to child sexual abuse will depend on multiple factors, including those related to the child, their family or caregiving context, the abusive experience, the intervening events, and subsequent retrieval contexts. Although research on memory involving sexually abused individuals is still in its infancy, child sexual abuse can be well retained in memory, but it may be vulnerable to 'normal' memory processes such as forgetting. At times, apparent forgetting can be difficult to distinguish from

intentional non-reporting. In some cases, reactions to traumatic experiences can involve diagnosable mental disorders and fragmentation of autobiographical memory. The presence of mental disorders and the extent of fragmentation are often determined by the coping strategies of the victim during and after a traumatic experience, including how they manage resulting clinical conditions. Cross-examination can be a further source of stress upon memory retrieval.

Memories for recurring events

Recurring incidents of abuse, as opposed to a single, one-off incident, account for around half of the reported cases of child sexual abuse. Children's memories for details that recur across numerous events tend to be strengthened and their reports of gist information and invariant features of repeated events are highly accurate. Memories for the gist and invariant features of recurring events are also resistant to error and misinformation. However, errors about specific occasions when variable or unique features of repeated events occurred are common. Children can indicate whether abuse took place more than once, but children and adults underestimate the frequency of repeated events. When using landmark events, such as birthdays or holidays, children typically interpret them prospectively not retrospectively. Young children lack the skill to specify the time of an event but can link it to a familiar action pattern. Most research on children's memories of recurring events has applied an eyewitness paradigm or has examined activities for which the external or ecological validity might be low. Few field and analogue studies have analysed children's reports of recurring personally salient events.

Eliciting memory reports

Best-practice interviewing aimed at facilitating memory contains a number of recognised and empirically supported components, established ground rules and practice narrative reports, including rapport-based support, age-appropriate open questioning and accommodation of individual differences. Although best-practice interviewing benefits victims, the key reason for using psychological approaches in interviews is to improve memory retrieval. For example, cognitive interview mnemonics were based on psychological understanding of memory processes; developmental narrative elaboration techniques are founded on theories about category-based retrieval cues. Some interviewing frameworks emphasise the benefits of using evidence-based best-practice components. Others focus on the type of evidence of child sexual abuse that should be elicited. Training, ongoing assessment and evaluation of investigative interviewing should focus on evidence-based components. Research on the impact questions can have on memory can guide choices during narrative evidence gathering, which Australian courts often allow instead of traditional examination and cross-examination. Conducting multiple interviews with appropriate questioning shortly after an event, with short gaps between each interview, can aid memory. Research on using intermediaries in

investigative interviews and in court examined whether this innovation facilitates memory and the communication challenges that exist in both contexts.

Education on memory

Law reform commissions, tribunals, and judicial and psychological professional associations have published guidance on memory with a view to educating decision-makers, enabling them to take judicial notice of such matters, and potentially reducing the need for expert witnesses. However, these educative efforts share shortcomings, either because they omit topics relevant to child sexual abuse, or because the research they rely on does not reflect scientific consensus or is outdated. Traditional educational methods related to legal procedures cover expert witness evidence and judicial directions. Expert witness evidence admitted in cases of child sexual abuse in New Zealand has included counterintuitive evidence. This report reviews research evaluating the effectiveness of expert evidence in sensitising juries to factors that affect memory and the timing of this evidence. It also outlines research on trial simulations conducted on innovative judicial directions about memory and on the timing of these directions. Appropriate circumstances for using expert witness testimony and judicial directions to educate juries about memory are yet to be determined. The findings of this report can be used in educational programs on memory in cases of child sexual abuse for law enforcement officers, legal professionals, courts and juries. Future research is recommended to test the effectiveness of educative interventions on memory for these groups.

Conclusion

This report aimed to gather contemporary psychological scientific research evidence that police, lawyers and juries should be aware of when responding to victims of child sexual abuse, in general, and to victims of child sexual abuse in institutional contexts, in particular. The report summarises what victims can be expected to remember about experiences of child sexual abuse, how they can be assisted to optimally remember those experiences, and how these experiences affect their reporting to police and their evidence in legal proceedings. This empirical guidance on memory in cases of child sexual abuse applied a transdisciplinary approach to optimise the way in which the scientific psychological research was translated for use by police, legal practitioners, judges, juries and law reformers. Based on this empirical review, a standalone summary of key guidance on the effects of child sexual abuse on memory and complainants' evidence was prepared, presenting the main findings derived from the report. This guidance was fully cross-referenced to evidence-based sources in each of the substantive chapters of the report.

Empirical guidance summary

The report concludes with a standalone summary of empirical guidance on the effects of child sexual abuse on memory and complainants' evidence, presenting the main findings derived from the report (Appendix 10.1).

Chapter 1

Aims and objectives of the report

The absence of an accessible evidence-based resource that provides a cogent summary of contemporary scientific research on human memory relevant to cases of child sexual abuse has been widely acknowledged. The guidance available for legal professionals on memory of child sexual abuse is often limited in scope, out of date and based on research that does not take into account known features of most cases of child sexual abuse. This report aims to provide a succinct summary of scientific research relevant to cases of child sexual abuse in language accessible to police officers, legal professionals, courts and juries. It will summarise what is known about how victims remember experiences of abuse, how victims optimally remember their experiences, and how this affects their reporting and evidence given at trial. The report was ultimately prepared in four phases. First, the results of more than 650 recent empirical studies were summarised in a preliminary draft report. Second, to refine the findings, 23 Australian and New Zealand academics and clinical practitioners with expertise in these matters were invited to provide feedback on the draft report. Third, the key issues were discussed at a public roundtable convened by the Royal Commission. Fourth, the authors consulted the written submissions, feedback forms and transcript of the roundtable proceedings in finalising the report. The language used throughout the report is accessible to non-psychologists. Technical terms are defined in the glossary.

1.1 The memory of victims of child sexual abuse

The oral testimony of the victim, which is typically unsupported by medical and forensic evidence or eyewitness accounts, is often the only source of direct evidence of child sexual abuse for the prosecution¹, especially in historical cases.² When a vulnerable victim – such as a child – gives oral evidence, it heightens the scrutiny applied to the reliability and veracity of their memory. The evidence of the victim is often met with disbelief³ and subjected to vigorous challenges by police officers and defence counsel that imply that it is not valid, in

¹ Suzanne Blackwell and Fred Seymour, 'Prediction of Jury Verdicts in Child Sexual Assault Trials' (2014) 21(4) *Psychiatry, Psychology, and Law* 567–576; Tiffany Lewis, Bianca Klettke and Andrew Day, 'The Influence of Medical and Behavioural Evidence on Conviction Rates in Cases of Child Sexual Abuse' (2014) 23(4) *Journal of Child Sexual Abuse* 431.

² Precisely what comprises an historical offence varies by jurisdiction and by researcher. Some researchers define an historical case as one brought by an adult relating to abuse experienced as a child; others focus on the duration of the delay between the last abusive event and the reporting of the abuse to authorities, relying on an arbitrary cut-off, such as any delay exceeding 12 months.

³ John Ellis and Nicola Ellis, 'A New Model Seeking Meaningful Redress for Survivors of Church-Related Sexual Assault' (2014) 26(1) *Current Issues in Criminal Justice* 31.

part because the alleged abuser is an older, trusted or high-status adult.⁴ In turn, this generates more intensive scrutiny of the investigative interview procedures conducted after the victim reported their abuse to the police.

Child witnesses have to meet many complex demands when giving evidence in legal proceedings.⁵ These include (1) recalling the event in issue; (2) communicating their recollection orally; (3) understanding questions put to them; (4) giving intelligent answers to those questions; and (5) speaking the truth.⁶ To do this, a child witness must have the ability and cognitive skills to (1) adequately comprehend what they experienced; (2) organise that experience cognitively; (3) differentiate the memory in question from other memories or fantasies; and (4) maintain and demonstrate these skills under stressful conditions.⁷

In its consultation paper on criminal justice, the Royal Commission identified a number of issues pertaining to the memory of victims in cases of child sexual abuse. These issues emerged in case studies, in accounts provided by more than 5,000 victims of child sexual abuse in institutional contexts, and in empirical research funded by the Royal Commission. Several of these issues suggest that the criminal justice system's expectations about, and understanding of, the operation of human memory, and of children's memory in particular, are at odds with contemporary scientific psychological research. Even in contexts that do not involve child sexual abuse, memory researchers have questioned whether the evidentiary demands of the criminal justice system are fundamentally incompatible with the nature of human memory.⁸

Efforts by judges who are sensitive to disparities between legal assumptions and memory processes in cases of child sexual abuse and who may seek to adapt the legal procedures to conform to realistic memory accounts have faced some challenges. One illustrative example comes from case law in California, which showed that as early as 1901, courts were concerned about the disjuncture between (1) the requirement to provide precise details of specific abusive events in legal pleadings and (2) the generic descriptions of multiple events of recurring child sexual abuse given by child victims who were unable to provide further

⁴ Karl A Roberts and Victoria L Herrington, 'Police Interviews with Suspects: International Perspectives' in Jack Kitaeff (ed), *Handbook of Police Psychology* (Routledge, 2011) 383.

⁵ Louise Sas, *The Interaction between Children's Developmental Capabilities and the Courtroom Environment: The Impact of Testimonial Competency* (Ottawa: Department of Justice Canada 2002) 8, 1.5.

⁶ Anne G Walker, 'Questioning Young Children in Court: A Linguistic Study' (1993) 17(1) *Law and Human Behavior* 59.

⁷ Gary B Melton, 'Children's Competency to Testify' (1981) 5(1) *Law and Human Behavior*, 73.

⁸ Katrin Hohl and Martin A Conway, 'Memory as Evidence: How Normal Features of Victim Memory Lead to the Attrition of Rape Complaints' (2016) *Criminology & Criminal Justice* 1, DOI: 10.1177/1748895816668937.

particulars.⁹ Another 88 years passed before California legislators enacted legal provisions that allowed generic descriptions by child victims to satisfy legal pleading requirements.¹⁰

1.2 Aims of the report

The aim of this report is to inform readers outside of the discipline of psychology about contemporary psychological scientific research on memory relevant to the work of the Royal Commission. It will do this by addressing three key questions:

1. What is known about what victims of child sexual abuse can be expected to remember about their experiences of such abuse?
2. How do victims optimally remember experiences of child sexual abuse?
3. How does this affect their reporting to police and the evidence they should be expected to be able to give in the criminal justice system?

In reviewing the memory research, we examined empirical studies and professional opinions on the following specific issues and questions posed by the Royal Commission in its consultation paper on criminal justice:

- **Misconceptions about memory:** The issue of erroneous assumptions about memory held by police, judicial officers, legal professionals and juries was identified by the Royal Commission as a source of difficulty for victims of child sexual abuse.¹¹
- **Memories for details and core memories of events:** This issue arose because the Royal Commission observed police questioning of victims that sought specific details about the scene of the offence, which few victims were able to provide.¹²
- **Inconsistencies in memory and reminiscence:** This issue arose because it was observed that the details victims provided in statements to police often differed from the details they provided at a later date, such as when they gave evidence in court at trial.¹³

⁹ *People v Castro*, 11 [65 P. 13] [51 Cal.3d.306] (Cal, 1901).

¹⁰ *People v Jones*, 51 (Cal 3d, 294, 1990). To qualify as 'continuous sexual abuse of a child', the California Penal Code at section 28.5 requires that the prosecution prove the following elements: (a) the accused resided in the same home with the minor child or had 'recurring access' to the child; (b) the accused engaged in three or more acts of 'substantial sexual conduct' with the child or engaged in three or more acts of 'lewd or lascivious conduct' with the child; (c) those three or more acts occurred over a period of time of not less than three months in duration; and (d) the child was under the age of 14 at the time the acts were completed.

¹¹ Royal Commission into Institutional Responses to Child Sexual Abuse, *Criminal Justice Consultation Paper*, (Commonwealth of Australia, 2016), Chapter 11, 452.

¹² *Ibid*, Chapter 3, 129; Chapter 9, 362.

¹³ *Ibid*, Chapter 9, 367.

- **Reliability of children’s memory:** This question was prompted by the content of traditional judicial directions to juries about ‘word against word’ evidence and about children’s evidence in particular.¹⁴
- **Suggestibility and false memories:** This issue derived from the Royal Commission’s question about whether issues of concoction, contamination or collusion should be left to the jury.¹⁵
- **The impact of delay on memory recall:** This issue arose in relation to observations that many victims of child sexual abuse waited as long as 15, 20 or 30 years after the abusive events to report these experiences to police.¹⁶
- **Memory for traumatic events:** This issue arose in relation to memory for specific details, core memories and gaps in memory, and the need for police interviewers, legal professionals and courts to better understand that psychological responses to trauma may affect memory.¹⁷
- **Memories for recurring events:** This issue was identified because of observed difficulties in achieving the minimum level of particulars required in cases of persistent child sexual abuse offences, as opposed to cases of one-off episodes of abuse, where victims tended to fare better. A related question was whether the requirement for particulars could be further restricted without causing unfairness to the accused, which involves considering the minimum level of particulars required for persistent child sexual abuse offences.¹⁸
- **Impact of cross-examination on children’s memory:** This issue arose based on reports of juries’ perceptions about the reliability and credibility of victims when they responded to leading questions, or showed signs of stress, during cross-examination. A related question was whether other reforms should be considered to improve courtroom questioning for complainants, particularly during cross-examination.¹⁹
- **Educative interventions about memory:** This issue was prompted by the Royal Commission’s question about effective education or training to ensure that police, judges – including appellate judges – and lawyers are better informed about child sexual abuse, including from up-to-date research about human memory.²⁰ Traditional legal procedural methods to improve jury understanding of child sexual abuse have included expert witness evidence and judicial directions.²¹

¹⁴ Ibid, Chapter 11, 449.

¹⁵ Ibid, Chapter 10.

¹⁶ Ibid, Chapter 3, 134, Chapter 10.

¹⁷ Ibid, Chapter 3, 134.

¹⁸ Ibid, Chapter 5, 175–178.

¹⁹ Ibid, Chapter 9.

²⁰ Ibid, Chapter 11.

²¹ Ibid, Chapter 11.

The report does not provide an exhaustive review of the scientific literature on the above topics, as in-depth scholarly reviews on those topics have been compiled by memory researchers in those fields. The purpose of this report was to collate scientific findings from different research domains relevant to memories of child sexual abuse, based on issues arising in legal settings, and to draw out their implications for police, legal practitioners and courts.

1.3 Contemporary guidance on memory and the law

The need for legal guidance on human memory performance, including guidance about memories of child sexual abuse²², is a topic that has received considerable attention from both psychologists and lawyers. Psychological research to inform police, prosecutors, judges and juries on aspects of human memory is prolific.

Courts often become familiar with research on human memory through expert evidence provided in key legal cases. For example, in one North American case on eyewitness identification²³, the court appointed a ‘special master’ to evaluate scientific evidence on memory given by seven psychological experts, and to collate more than 2,000 pages of transcripts and hundreds of studies into coherent legal recommendations. No comparable procedure has been conducted in a high-profile case on memory for child sexual abuse.

Treatises for lawyers on specialised knowledge about memory do not always distinguish adults’ from children’s memories. For example, in a widely used Australian treatise on expert evidence, there is a chapter devoted to eyewitness testimony that includes no ‘separate review for adult and child witnesses because, in most part, the factors that we discuss affect adults and children in similar ways’.²⁴ This report places special emphasis on children’s memory and adults’ memory of childhood, as detailed in Chapters 4, 5 and 7.

A five-volume legal treatise on expert evidence that cites North American case law, and is co-authored by developmental psychologists, has been published in the United States.²⁵ That treatise includes a chapter titled ‘Children’s Eyewitness Memory’.²⁶ While the case law is updated annually, the research summarised by psychologists does not incorporate current

²² See, for example, Australian Law Reform Commission, NSW Law Reform Commission and Victorian Law Reform Commission (2006) *Uniform Evidence Law Report (ALRC Report 102; NSWLRC Report 112; VLRC Final Report)*, Australian Law Reform Commission: Sydney, 253.

²³ *State v Henderson*, 27 A.3d 872 (NJ, 2011).

²⁴ Martine Powell, Maryanne Garry and Neil Brewer, ‘Eyewitness Testimony’ in Ian Freckelton and Hugh Selby (eds), *Expert Evidence* (Thomson Reuters, 2013) 65-1-65-570, 65–5.

²⁵ David L Faigman et al, *Modern Scientific Evidence: The Law and Science of Expert Testimony* (Thomson Reuters, 2016–2017 eds, 2016).

²⁶ Stephen J Ceci et al, ‘Children’s Memory and Testimony: Scientific Status’ in David L Faigman et al (eds), *Modern Scientific Evidence: The Law and Science of Expert Testimony* (Thomson Reuters, 2016-2017).

findings on the topic.²⁷ Moreover, the treatise does not address most of the Royal Commission's questions because, similar to other guidance, it focuses on eyewitness memory, and draws primarily on findings derived from laboratory studies that use an eyewitness memory research paradigm rather than features common to most cases of child sexual abuse and most relevant to memories of child sexual abuse. This report gathers research on child sexual abuse in one place.

Several attempts to educate fact finders and legal professionals about memory in legal settings have been made in Australia. Major interventions prepared by lawyers include the joint Law Reform Commission reports²⁸, the Australasian Institute of Judicial Administration's Bench Book for Children Giving Evidence in Australian Courts²⁹ and the Administrative Appeals Tribunal guidelines.³⁰ The British Psychological Society's Research Board Guidelines on Memory and the Law³¹ were prepared by psychologists, and have been made available to Australian judges.

In general, few of the available educative resources addressed key memory issues the Royal Commission identified, such as the effects on complainants' memory of delays or memory for recurring experiences of child sexual abuse. In the past decade, research and views about children's memory have undergone dramatic changes, thus the available guidance provides an incomplete picture of children's memory capabilities. Most of the available guidance provided no overview of adults' memories of child sexual abuse, or provided a very limited perspective on this topic. Overall, the available guidance lacks up-to-date information based

²⁷ The 2016–2017 section of the chapter entitled 'Scientific Status version' co-authored by Stephen J Ceci, Martine B Powell and Gabrielle F Principe, covering the suggestibility of child witnesses, child witness interviews, memory and development, and children's testimony in the court room includes no citations to research published since 2000.

²⁸ Australian Law Reform Commission, NSW Law Reform Commission and Victorian Law Reform Commission (2006) *Uniform Evidence Law Report (ALRC Report 102; NSWLRC Report 112; VLRC Final Report)*, Australian Law Reform Commission: Sydney.

²⁹ The Australasian Institute of Judicial Administration (AIJA) Incorporated, *Bench Book for Children Giving Evidence in Australian Courts* (updated February 2015).

³⁰ Administrative Appeals Tribunal Migration & Refugee Division, *Migration and Refugee Division: Guidelines on Vulnerable Persons* (Administrative Appeals Tribunal, July 2015) 19.

³¹ The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 1. The BPS Guidelines were the product of a working party chaired by Professor Martin Conway of City, University of London, consisting of 15 experimental psychologists based in the United Kingdom and 12 international advisors. The BPS Guidelines published in 2008 and those published in 2010 are identical in every respect, with the exception of one phrase on page 2. This concerns who is best placed to judge or explain the perceived reliability and credibility of witness memory and testimony. This modification in the text of the guidelines followed a debate within the BPS about who is a qualified memory expert. The 2010 guidelines, which superseded the 2008 version, specify that 'A memory expert is a person who is recognised by the memory research community to possess knowledge relevant to the particular case'; the 2008 guidelines specified that 'A memory expert is a memory researcher'.

on contemporary research and views of memory that apply to victims of child sexual abuse.³² Chapter 9 discusses further details about these forms of educative guidance.

1.4 Methodology

This review was commissioned by the Royal Commission and led by qualified authors with expertise in psychology and law. The report focuses on topics related to memory and child sexual abuse as identified by the Royal Commission and specified in Section 1.2.

Phase one

A team of research assistants was assembled to locate and summarise relevant scholarly publications. Searches were systematically conducted of research document databases, including Google Scholar, MEDLINE, ProQuest, ProQuest Criminal Justice, ProQuest Dissertations & Theses Global, PsycINFO, ScienceDirect, Scopus, Web of Science and university library databases. The search strategies used methods applied in conducting meta-analyses.³³

To identify relevant scholarly publications, researchers used different combinations of the following terms by search topic, using Boolean operators 'AND' or 'OR', and the wildcard symbol '*':

- **child and adult memory:** child, adult, trauma, memory, events, abuse
- **memory effects:** child, development, memory, sex abuse, false memory, misinformation, suggestibility, lie, deception, truth, event
- **developmental stages of memory:** childhood, development, autobiographical, memory, stages, schema, episodic memory, forensic, legal and developmental
- **trauma and memory:** traumatic sexual memories, trauma, betrayal trauma, memory, retrieval, over time, encode, encoded, childhood sexual abuse, review
- **memory for repeated events:** childhood sexual abuse, CSA, memory, victim, process, trauma, repeated, persistent, frequent, schema, episodic, autobiography
- **interview protocols:** investigative interview, NICHD-R, the cognitive interview, the whole story, the Self-Administered Interview, the Developmental Narrative Elaboration Interview
- **memory training:** training, education, memory, witness, legal evidence, judges, police, personnel, attorneys, investigation

³² Chapter 9.1.

³³ Jeffery G Reed and Pam M Baxter, 'Using Reference Databases' in Harris Cooper, Larry V Hedges and Jeffrey C Valentine (eds) *The Handbook of Research Synthesis and Meta-analysis* (Russell Sage Foundation, 2009) 73.

- **memory misconceptions:** juror/y, child sex abuse, misconceptions, knowledge, memory.

Searches of scholarly publications focused on research published in the past 10 years. Priority was given to meta-analyses and research reviews. Searches on Google Scholar were conducted without time filters to capture the development and background of memory theory.

In addition, citation and reference searches of relevant publications and author searches via their websites and ResearchGate were conducted. Finally, manual searches for books and book chapters were performed, as these are not always represented in databases. Using these strategies, more than 650 empirical studies were selected for in-depth review. These studies were organised by topic, summarised and collated.

Phase two

The authors prepared the draft report, assisted by a small group of research associates and assistants. Supplementary searches on relevant topics that emerged from these summaries were conducted on an ongoing basis while drafting the report; for example, using Google Scholar.

Phase three

Input was obtained through consultation with the relevant professional community. The Royal Commission convened an in-person roundtable discussion on 31 March 2017 in Sydney, New South Wales. Letters of invitation were issued to 26 Australian and New Zealand academics and forensic clinical practitioners with expertise in these matters, gained through conducting research on human memory, providing consultations and evaluations of victims of child sexual abuse and child sex offenders, and giving expert witness evidence in child sexual abuse matters

In advance of the roundtable, copies of the preliminary draft report were sent to 23 Australian and New Zealand academics and clinical practitioners seeking written comments and feedback about the nature and scope of the topics addressed in the draft report. The academics and clinical practitioners were supplied with feedback forms and invited to select two substantive chapters within their areas of expertise to record their critique and feedback.³⁴ As a guide to the nature of the input sought from the roundtable participants, the feedback forms asked respondents to nominate:

- the most important things police, legal practitioners and courts need to know about memory

³⁴ A copy of the draft report feedback form is included as Appendix 1.1.

- the most significant implications of these findings for legal policy and practice in child sexual abuse cases
- additional references or topics that should be added to the report
- topics in the report that should be elaborated
- topics in the report that should be omitted.

Additional comments from the roundtable participants were invited. Prior to the roundtable, 19 written feedback forms were received from 13 roundtable participants. In addition, two letters containing general comments about the report were received.³⁵ Scholarly references suggested by the roundtable participants were consulted and included in the report as appropriate. Topics noted as requiring further elaboration or omission were adjusted as appropriate.

In the second phase of the consultation process, 20 invited academics and clinical practitioners attended the roundtable convened by the Royal Commission in Sydney to discuss these topics further.³⁶ The proceedings were facilitated by the authors, recorded (audio only) and transcribed. A transcript of the public roundtable proceedings was published on the Royal Commission's website.³⁷

Before starting the roundtable discussion, the participants reviewed a list of 40 propositions about memory and the law that were drawn from the key substantive chapters in the draft report and the feedback forms submitted by the roundtable participants.³⁸ Complex scientific terminology was removed to make the statements accessible to non-psychologists. The majority of the statements (85 per cent) did not evoke disagreement, although in some instances, certain roundtable participants indicated that they did not know whether a particular proposition was accurate as the topic was not within their area of expertise. In response to the majority of the propositions, unanimous agreement with these formulations emerged. In these instances, the unanimity appeared to reflect support for presenting the research findings in those terms to an audience of non-psychologists. For a small proportion of propositions (15 per cent), there was no consensus or majority agreement. The reasons for the absence of agreement about these particular formulations were explored with the participants at the roundtable to gain insight into confusing or ambiguous aspects of those

³⁵ Participating adult eyewitness memory researchers did not submit forms with feedback about the substantive memory chapters.

³⁶ A list of roundtable participants is included as Appendix 1.2.

³⁷ Transcript of proceedings, *Public Roundtable Criminal Justice Memory of Childhood Sexual Abuse and The Law* (Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, March 31 2017). Available at < <http://www.childabuseroyalcommission.gov.au/getattachment/e8e75d64-ba84-4929-a9dd-bf2f5c465d36/Transcript> >.

³⁸ The memory propositions are attached as Appendix 1.3.

propositions so that the wording could be refined and amended to summarise research findings on those topics more adequately.

Phase four

The written submissions, feedback forms and transcript of the roundtable proceedings were consulted in finalising the report. Excerpts from the roundtable discussion were quoted in the report where helpful. The report was finalised by the authors with the support of a small group of research associates and assistants.³⁹

Before it was published, the report was peer-reviewed by anonymous local and international scholars on child sexual abuse and memory, and was amended in light of their evaluations.

Topics addressed in the report

To make the research findings readily accessible to an audience untrained in the psychology of human memory, complex psychological theories, terminology and methodologies have been omitted. Where technical psychological terminology is essential, definitions are provided in the glossary. The summaries of the key findings in this report are evidence-based, drawn from primary research reports. Details of the studies and published sources are provided in footnotes.

The empirical findings on memory were organised into the following chapters, which focused on the research aims related to specific enquiries within the Royal Commission's Criminal Justice Consultation Paper and the issues set out in Section 1.2 above:

- Chapter 2: Common misconceptions about memory held by police officers, judicial officers and juries (consultation paper issue: misconceptions about memory)
- Chapter 3: The strengths and weaknesses of forensic memory research methods applied to cases of child sexual abuse
- Chapter 4: The nature of human memory; a synthesis of the key operational features of memory in children and adults (consultation paper issues: misconceptions about memory; suggestibility and false memories; reliability of children's memory; inconsistencies in memory and reminiscence)
- Chapter 5: The effects of delay on memory for child sexual abuse (consultation paper issue: impact of delay on memory recall)
- Chapter 6: The effects of stress and trauma on memory, including the stress of cross-examination (consultation paper issue: memory for traumatic events)

³⁹ We are grateful for the assistance of Natalie Martschuk, Stella Palmer, Berenike Waubert de Puiseau and Vana Webster for their research support and contributions to the final report.

- Chapter 7: Memory for recurring events such as persistent, repeated offending (consultation paper issues: memories for recurring events; memory for details and core memories of events)
- Chapter 8: The effectiveness of evidence-based interview strategies to question child sexual abuse victims (consultation paper issue: impact of cross-examination on children’s memory) – Appendices 8.1 and 8.2 itemise research on the extent of evidence-based support for these strategies.
- Chapter 9: Educative guidance on memory as a basis for education and training of police, legal professionals, courts and juries (consultation paper issue: educative interventions about memory)
- Chapter 10: Concluding comments about the achievement of the report’s aims.
- Appendix 10.1: A summary of empirical guidance on the effects of child sexual abuse on memory and complainants’ evidence, presenting the main findings from the research.

Chapter 2

Misconceptions about memory

Police officers, legal professionals, judges, juries and laypersons hold misconceptions about memory that can influence outcomes in cases of child sexual abuse. Recent research distinguished between a ‘common-sense memory belief system’, which is made up of constellations of misconceptions about memory, and a ‘scientific memory belief system’, which is made up of constellations of accurate perceptions about memory. This chapter discusses empirical findings on widespread common-sense misconceptions most relevant to cases of child sexual abuse, including those about the nature of memory, the effects of delay on memory, memory for traumatic events, recurring events and the impact of interviewing strategies on memory. It also explains how the criminal justice system relies on inaccurate assumptions about the value of memory inconsistencies, self-contradictions, reminiscence and memory for details as indicators of a reliable or unreliable core memory. Together, these empirical foundations demonstrate the need for more effective educative guidance on memory in the justice sector.

The premises for many rules of evidence and legal procedures that create obstacles in cases of child sexual abuse are ‘in a large part a product of the rule-makers’ beliefs about human memory, and in particular, about beliefs about the way people receive, store and retrieve information in their memories.⁴⁰ To remove these barriers, it’s necessary to examine the incompatibilities between contemporary knowledge about the nature of human memory and existing legal standards and procedures. This requires an examination of commonly held beliefs about memory and current research on the nature and fallibility of memory. The factors that influence memories or cause memory errors and distortions also need to be considered.⁴¹ Although many courts and legal professionals believe that ‘common sense [...] provides an adequate basis for judging reliability of memory’ and that common sense corresponds with the scientific knowledge on memory, contemporary research has revealed the presence of numerous and extensive disparities between common-sense beliefs and scientific findings about human memory.⁴²

Studies have shown that misconceptions about memory are endorsed by members of the public and many professionals working in clinical and legal contexts, such as psychotherapists,

⁴⁰ Michael Saks and Barbara A Spellman, *The Psychological Foundations of Evidence Law* (New York University Press, 2016) 2.

⁴¹ Shazia Akhtar et al, ‘The “Common Sense” Memory Belief System’ (2017) (manuscript submitted for peer review, copy on file with report authors); Svein Magnussen and Annika Melinder, ‘What Psychologists Know and Believe about Memory: A Survey of Practitioners’ (2012) 26(1) *Applied Cognitive Psychology* 54–60.

⁴² Shazia Akhtar et al, ‘The “Common Sense” Memory Belief System’ (2017) (manuscript submitted for peer review, copy on file with report authors), 3.

psychiatrists, psychologists and social workers.⁴³ Naïve beliefs by police, judges and jurors about memory have been documented to assess the extent to which their perceptions diverge from scientific findings.⁴⁴ Although this line of research originally documented perceptions of the memory of eyewitnesses, recent studies have extended this research to beliefs about autobiographical memory and about children's memory.

Some results of surveys about eyewitness memory are useful in determining the extent to which people unacquainted with the psychology of memory are aware of the more general findings of scientific research on memory. For example, one study compared the knowledge of North American law enforcement professionals, judges and jurors⁴⁵ with the responses of eyewitness experts to a series of 30 memory propositions.⁴⁶ About half (14 of 30) of the memory propositions used in that survey are applicable to event memory and cases of child sexual abuse. Analyses of the responses to these 14 items revealed that compared to memory experts, jurors were least knowledgeable about event memory and child witnesses (78.5 per cent disagreement with experts), followed by law enforcement professionals (71.4 per cent disagreement with experts) and judges (64.3 per cent disagreement with experts).⁴⁷ The largest discrepancies between the views of memory experts and those of people untrained in the psychology of memory emerged for child witness accuracy, long-term memory repression and rates of forgetting. Topics on which the knowledge of these groups differed significantly from that of memory experts, but to a lesser extent, were the effects of post-event information on memory, the influence on memory of the wording of retrieval questions and hypnotic suggestibility. These findings suggest that many police officers, legal professionals, judges and jurors hold fundamental misconceptions about the nature of memory that may influence outcomes in cases of child sexual abuse.

⁴³ Christopher C French and James Ost, 'Beliefs About Memory, Childhood Abuse, and Hypnosis Among Clinicians, Legal Professionals, and the General Public' in Ros Burnett (ed), *Wrongful Allegations of Sexual and Child Abuse* (Oxford University Press, 2016) 143.

⁴⁴ Emma Antrobus, Blake McKimmie and Peter Newcombe, 'Community Member's Beliefs about Children in Australian Courts' (2012) 19(4) *Psychiatry, Psychology & Law*, 497; Tanja Rapus Benton et al, 'Eyewitness Memory is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts' (2006), 20(1) *Applied Cognitive Psychology* 115; Svein Magnussen et al, 'Beliefs about Factors Affecting the Reliability of Eyewitness Testimony: A Comparison of Judges, Jurors and the General Public' (2010) 24(1) *Applied Cognitive Psychology* 122; David C Rubin and Dorthe Berntsen, 'People Believe it is Plausible to Have Forgotten Memories of Childhood Sexual Abuse' (2007) 14(4) *Psychonomic Bulletin Review* 776.

⁴⁵ Tanja Rapus Benton et al, 'Eyewitness Memory is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts' (2006) 20(1) *Applied Cognitive Psychology* 115.

⁴⁶ These propositions were drawn from an earlier study administered to 62 psychologists with publications on eyewitness memory research by Saul M Kassin et al, 'On the "General Acceptance" of Eyewitness Testimony Research: A New Survey of the Experts' (2001) 56(5) *American Psychologist* 405. Their responses to these propositions comprised the expert group against which other responses by other groups were compared.

⁴⁷ Tanja Rapus Benton et al, 'Eyewitness Memory is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts' (2006) 20(1) *Applied Cognitive Psychology* 115.

In a more recent study, beliefs about autobiographical memory held by members of the public, police officers and memory experts⁴⁸ were tested using a questionnaire with 36 propositions.⁴⁹ Analysis of the response patterns of these three groups revealed two distinct memory belief sets or systems, which are referred to as the Common Sense Memory Belief System and the Scientific Memory Belief System. Police and members of the public were more likely to be classified together and to adhere to the Common Sense Belief System,⁵⁰ whereas memory experts were more likely to adhere to the Scientific Memory Belief System.⁵¹ These findings established that common-sense views of memory diverge from psychological scientific findings on memory. For this reason, a summary of the identified knowledge gaps and misconceptions held by police, courts and juries is a critical first step in devising effective measures to educate fact finders and decision-makers about human memory. The next section outlines results of research on more specific common misconceptions about memory.

2.1 Misconceptions about the nature of human memory

People unfamiliar with contemporary memory research may envisage memory in terms of an inaccurate model or metaphor, and thus hold unrealistic expectations about witness memory. Studies that have tested beliefs about memory have found that common-sense intuitions about basic memory processes are likely to be wrong.⁵²

One common misconception, based on the idea of a camera, is that memory has mechanical or 'photographic' precision.⁵³ Very few people have highly superior autobiographical memory capacity (for example, they can remember what they ate for breakfast 20 years ago), but

⁴⁸ Memory experts were scholars and researchers attending the 2016 6th International Conference on Memory (Budapest, Hungary, 17-22 July 2016).

⁴⁹ Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (2017) (manuscript submitted for peer review, copy on file with report authors).

⁵⁰ The proportion of participants in each of the three groups whose scores aligned with the Common Sense Memory Belief System were: members of the general public 70 per cent; police 65 per cent; and memory experts 27 per cent.

⁵¹ The proportion of participants in each of the three groups whose scores aligned with the Scientific Memory Belief System were: members of the public 30 per cent; police 35 per cent; and memory experts 73 per cent. Factor analyses revealed the presence of eight discrete belief factors that distinguished the two memory belief systems: (1) memory is generally accurate; (2) the more memory details the more accurate the memory; (3) memories can be false; (4) memory is like a video; (5) emotional intensity and accuracy; (6) trauma and memory; (7) childhood memory; and (8) memory durability and reliving trauma.

⁵² Daniel J Simons and Christopher F Chabris, 'What People Believe About How Memory Works: A representative Survey of the U.S. Population' (2011) 6(8) *PLoS ONE* 1.

⁵³ Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (2017) (manuscript submitted for publication, copy on file with report authors); *Ibid.*

these memories are confined to personal autobiographical experiences, are not photographic and are subject to errors of perception.⁵⁴

Another common erroneous view is that individuals can draw on a comprehensive and readily accessible 'library catalogue' of personal experiences.⁵⁵ Good remembering is presumed to be due to the sound skills of the individual in retrieving 'video files' that are never lost or changed, though they may occasionally be misfiled.

A third prevalent, yet inaccurate, view of memory, which is based on the idea of a DVD (digital versatile disc), is that memory is continuous, and that complete recall can be achieved by 'replaying' event memories, especially in response to psychological techniques such as repeated questioning or hypnosis.

In reality, 'Memory is less like a digital recording of a concert that sounds the same each time you play it back, and more like an improvisational performance based on a common theme. It can differ each time it's played back, and those differences can accumulate over time.'⁵⁶ The dynamic nature of human memory is described in Chapter 4 of this report.

Misperceptions of memory for details and overall accuracy

A number of legal procedures and traditions implicitly endorse misconceptions about memory. For instance, a review of guidance given by the Supreme Court of Sweden in cases involving adult witnesses found that it had set out several indicators of veracity, including vividness, details, consistency and coherence. At times, both the presence of details and the lack of details were endorsed as indicators of memory reliability.⁵⁷

Research has shown that many people believe that a more vivid memory of an event is an indicator of memory accuracy, even for childhood memories.⁵⁸ However, as is discussed in Chapter 5, detailed and vivid memories are rare, and vividness is not a predictor of accuracy.

An extensive survey of police officers in the United Kingdom showed that they did not have a shared understanding of human memory and endorsed contradictory beliefs about how

⁵⁴ Aurora K R LePort et al, 'Behavioural and Neuroanatomical Investigation of Highly Superior Autobiographical Memory (HSAM)' (2012) 98(1) *Neurobiology of Learning and Memory* 78–92; Dr James McGaugh at the Center for the Neurobiology of Learning and Memory at University of California Irvine studies this small group of individuals.

⁵⁵ Charles Fernyhough, 'The story of the self' *The Guardian*, 13 January 2012. Available at < <https://www.theguardian.com/lifeandstyle/2012/jan/13/our-memories-tell-our-story> >.

⁵⁶ Mikaela Conley, 'Remembering 6 Common Memory Myths' *ABC News* (online), 4 August 2011. Available at < <http://abcnews.go.com/Health/memory-myths-debunked/story?id=14222786> >.

⁵⁷ Johanna Lindholm and Ann-Christin Cederborg, 'Legal Assessment of Victims of Human Trafficking for Sexual Purposes' (2016) 34(1) *Behavioural Sciences and the Law* 218.

⁵⁸ Martin A Conway, Lucy V Justice and Catriona M Morrison, 'Beliefs about Autobiographical Memory...and why they Matter' (2014) 27(7) *The Psychologist* 502.

memory works.⁵⁹ One prevalent misconception was the belief that recall of specific details reflected a more reliable memory on core information.⁶⁰ Research has shown that many law enforcement officers and members of the public share the incorrect view that recall of more extensive and specific details is a hallmark of an accurate memory for core events.⁶¹

Misconceptions about self-contradictions and memory accuracy

Members of the public and police officers are generally unaware of how error-prone memory can be.⁶² A self-contradiction or prior inconsistent statement by a witness is believed to show a serious defect in either their memory or honesty. Many laypeople and police officers are unaware that errors of omission, such as gaps and missing information, and errors of commission, such as self-contradictions, are fundamental features of human memory, as is discussed in Chapter 4.⁶³

The premium placed on the consistency of statements given by victims of sexual abuse was demonstrated in an analysis of 679 complainants of rape reported to the Metropolitan Police Service in London. Results revealed that not a single case in which a victim's account contained inconsistencies culminated in a prosecution. This finding suggests that police officers and prosecutors drop cases where memory inconsistencies are noted in the file⁶⁴, although inconsistencies are a feature of ordinary memory processes.

The strategies used to cross-examine witnesses implement two key misconceptions about memory by focusing on disparities in recall for peripheral details and memory inconsistencies over time to suggest that core memory is unreliable.⁶⁵ In some jurisdictions, this misconception is endorsed by jury directions informing jurors that the presence of

⁵⁹ A representative sample of 531 sworn officers drawn from all ranks in two police forces in the United Kingdom, 240 memory experts and 281 members of the public were asked about different memory-related topics. The police and members of the public adhered to the Common Sense Belief System. Their responses differed significantly from those of adherents of the Scientific Memory Belief System. Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (manuscript submitted for review, copy on file with the report authors).

⁶⁰ Ibid.

⁶¹ Martin A Conway, Lucy V Justice and Catriona M Morrison, 'Beliefs about Autobiographical Memory ... and why they Matter' (2014) 27(7) *The Psychologist* 502; Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (2017) (manuscript submitted for peer review, copy on file with report authors).

⁶² Ibid; Martin Conway, 'Ten Things the Law and Others Should Know about Human Memory' in Lynn Nadel and Walter P Sinnott-Armstrong (eds) *Memory and the Law* (Oxford University Press, 2013) 359.

⁶³ Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (2017) (manuscript submitted for peer review, copy on file with authors); Katrin Hohl and Martin A Conway 'Memory as Evidence: How Normal Features of Victim Memory Lead to the Attrition of Rape Complaints' (2016) *Criminology and Criminal Justice* 1, DOI: 10.1177/1748895816668937.

⁶⁴ Ibid.

⁶⁵ Emma Davies, Emily Henderson and Kirsten Hanna, 'Facilitating Children to Give Best Evidence: Are There Better Ways to Challenge Children's Testimony?' (2010) 34 *Criminal Law Journal* 347, 353.

'inconsistencies cast doubt on the accuracy of witnesses' testimony'.⁶⁶ Trial simulation studies have shed additional light on mock jurors' misconceptions about inconsistencies in memory. Inconsistencies in evidence given by a witness were generally viewed negatively; this effect was magnified if the witness gave evidence after a consistent witness.⁶⁷ Memory contradictions were more detrimental to witness credibility than recall of new information at the time of the trial.⁶⁸ In reality, both memory for peripheral information and self-contradictions are poor predictors of overall memory and testimonial accuracy.⁶⁹

Misconceptions of the reliability of children's memories

A series of empirical studies in the form of surveys and trial simulations has examined community perceptions of the reliability of children's memory at different developmental stages. Research on Australian community members' beliefs showed that very young children were rated as less able to distinguish fantasy from reality than older children.⁷⁰ The memory of older children was perceived as more reliable than that of younger child witnesses.⁷¹ However, a more complex picture of the curvilinear relationship between these perceptions and the chronological age of a child in a sexual abuse case emerged in a study in which the age of the child was systematically varied. The reliability and memory abilities of younger children were perceived to increase until the age of eight or nine; thereafter, they were rated as increasingly less reliable in relation to claims of child sexual abuse.⁷² Other studies with

⁶⁶ Ronald P Fisher, Neil Brewer and Gregory Mitchell, 'The Relation Between Consistency and Accuracy of Eyewitness Testimony: Legal versus Cognitive Explanations' in Tom Williamson, Ray Bull and Tim Valentine (eds), *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* (Wiley-Blackwell, 2009) 121. See, for example, John H Wigmore *Evidence in Trials at Common Law* (Little, Brown & Co., 1904, revised 1970 by J H Chadbourn) vol 3A for longstanding legal assumptions of this nature.

⁶⁷ Eric E Jones, Phillip G Palmer and Abby D Bandy, 'The Effect of Inconsistency on Evaluations of a Second Eyewitness: It Depends on Who Testifies First' (2015) 22(6) *Psychiatry, Psychology, and Law* 814.

⁶⁸ Garrett L Berman and Brian L Cutler, 'Effects of Inconsistencies in Eyewitness Testimony on Mock-Juror Decision Making' (1996) 81(2) *Journal of Applied Psychology* 170.

⁶⁹ *Ibid*, 130; Ronald P Fisher, Neil Brewer and Gregory Mitchell, 'The Relation Between Consistency and Accuracy of Eyewitness Testimony: Legal versus Cognitive Explanations' in Tom Williamson, Ray Bull and Tim Valentine (eds), *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* (Wiley-Blackwell, 2009) 121.

⁷⁰ Younger children were aged between four and seven. Emma Antrobus, Blake M McKimmie and Peter A Newcombe, 'Community Members' Beliefs about Children in Australian Courts' (2012) 19(4) *Psychiatry, Psychology, and Law* 497; Marcia K Johnson and Mary Ann Foley, 'Differentiating Fact from Fantasy: The Reliability of Children's Memory' (1984) 40(2) *Journal of Social Issues* 33.

⁷¹ Community members who were eligible to serve on a jury were asked about their beliefs about child sexual abuse witnesses in a survey. The older child witnesses were aged between nine and 12, while the younger child witnesses were aged between four and seven. Emma Antrobus, Blake M McKimmie and Peter A Newcombe, 'Community Members' Beliefs about Children in Australian Courts' (2012) 19(4) *Psychiatry, Psychology, and Law* 497.

⁷² Age was varied at two-year intervals, from the age of three to the age of 15. The reliability of younger children (aged three, five and seven) was perceived to increase until the age of eight, while memory abilities were perceived to increase until ages seven to 10. Children between the age of 10 and 15 were rated as increasingly less trustworthy or reliable in relation to claims of child sexual abuse. Narina Nunez, Andre Kehn

mock jurors showed that perceptions of children's memory reliability and honesty increased rapidly from age two through to five, and then in smaller increments up to about the age of eight to ten, depending on the gender of the child. After age six, boys were rated as progressively less honest as their age increased, but girls' perceived honesty continued to increase with age. Deliberations from a mock jury study revealed the lay belief that as children matured and gained more sexual knowledge, they were more skilled at lying, with a greater propensity to lie about sexual abuse.⁷³ In line with this view, younger children were rated as less likely to make a false claim of abuse than were children aged between nine and 12.⁷⁴ Details about the development of children's memory processes and their reliability at different ages are described in Chapters 4, 5 and 7.

Younger children were generally perceived as more easily influenced by others, including family members, whereas older children were rated as more susceptible to the influence of peers.⁷⁵ Chapters 4 and 5 discuss the suggestibility of children, based on a series of recent findings on reverse developmental effects showing that children are less suggestible than adults on some memory tasks.

Trial simulation studies have shown that incorrect assumptions about children's reliability and suggestibility can be predictive of verdicts to acquit in cases of child sexual abuse.⁷⁶ This research identified common misconceptions about memory and child sexual abuse, some of which can influence fact finders' responses to allegations of child sexual abuse.⁷⁷ For instance, a common misconception was that child sexual abuse is a rare occurrence.⁷⁸ Belief in such a view may incline jurors to regard reports of child sexual abuse as false.⁷⁹ In reality, false claims by child complainants are rare.⁸⁰ The estimated prevalence of children making false

and Daniel B Wright, 'When Children Are Witnesses: The Effects of Context, Age and Gender on Adult's Perceptions of Cognitive Ability and Honesty' (2011) 25(3) *Applied Cognitive Psychology* 460.

⁷³ Children were aged six, 11 or 15. Samantha J Tabak and Bianca Klettke, 'Mock Jury Attitudes towards Credibility, Age, and Guilt in a Fictional Child Sexual Assault Scenario' (2014) 66(1) *Australian Journal of Psychology* 47.

⁷⁴ Younger children were aged between four and seven, while older children were aged between nine and 12. Emma Antrobus, Blake M McKimmie and Peter A Newcombe, 'Community Members' Beliefs about Children in Australian Courts' (2012) 19(4) *Psychiatry, Psychology, and Law* 497.

⁷⁵ *Ibid.*

⁷⁶ A survey of 1,931 non-empanelled jurors in New South Wales revealed that more than half of the participants did not know or were uncertain of the correct answer to questions about the reliability of children's evidence, and children's post-abuse reactions. Jane Goodman-Delahunty, Natalie Martschuk and Annie Cossins, 'Validation of the Child Sexual Abuse Knowledge Questionnaire' (2017) 23(4) *Psychology, Crime and Law* 391.

⁷⁷ *Ibid.*

⁷⁸ Lisa DeMarni Cromer and Rachel E Goldsmith, 'Child Sexual Abuse Myths: Attitudes, Beliefs, and Individual Differences' (2010) 19(6) *Journal of Child Sexual Abuse* 618.

⁷⁹ Joe Tucci, Chris Goddard and Janise Mitchell, *Tolerating Violence against Children: Community Attitudes about Child Abuse in Australia* (Australian Childhood Foundation, 2003) 12.

⁸⁰ Dympna House Collective, *Facing the Unthinkable* (Dympna House Inc, 1990); New South Wales Child Protection Council, *Child Sexual Assault: How to Talk to Children* (2000); R Kim Oates et al, 'Erroneous

complaints of sexual abuse to child protection agencies has ranged from 2–5 per cent.⁸¹ One estimate of the number of adults making false allegations of sexual assault to police puts the rate at 5.9 per cent.⁸² When reported and unreported cases are taken into account, it results in a prevalence of 0.005 per cent.⁸³

2.2 Misconceptions about delay and memory accuracy

Misconceptions about the relationship between memory and the passage of time

A common misconception of the effect of delay on memory that is shared by many law enforcement and legal practitioners and courts, is that ‘memory is a mental record which is fixed at the time of the experience of an event and then fades (more or less slowly) over time’.⁸⁴ In other words, it assumes a simplistic monotonic or constant relationship between memory and time. In reality, the relationship between memory and delay is more complex, and initially involves rapid forgetting followed by more stable memory retention, described in chapters 4 and 5. Nonetheless, research has shown that one factor that influences police officers’ decisions to refer a case for potential prosecution is the timing of the disclosure of abuse, based on a presumption that delayed reports of child sexual abuse were unreliable.⁸⁵ Similarly, trial simulation studies revealed that evidence of a delay in disclosure of abuse was inversely associated with guilt ratings: higher conviction rates were obtained in cases with a shorter delay between the time of the alleged abuse and official disclosure.⁸⁶

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- Concerns about Child Sexual Abuse’, (2000) 24(1) *Child Abuse and Neglect* 149; Nico Trochmé and Nicholas Bala, ‘Allegations of Abuse and Neglect when Parents Separate’ (2005) 29(12) *Child Abuse and Neglect* 1333.
- ⁸¹ Ibid., Mark D Everson and Barbara W Boat, ‘False Allegations of Sexual Abuse by Children and Adolescents,’ (1989) 28(2) *Journal of the American Academy of Child and Adolescent Psychiatry* 230, 235; Kathleen C Faller, *Child Sexual Abuse: Diagnosis, Case Management and Treatment* (New York: Columbia University Press 1988); David P H Jones and J Melbourne McGraw, ‘Reliable and Fictitious Account of Sexual Abuse to Children,’ (1988) 2(2) *Journal of Interpersonal Violence* 27; Kimberly A Lonsway, ‘Trying to Move the Elephant in the living Room: Responding to the Challenge of False Rape Reports’, (2010) 16(12) *Violence Against Women* 1356; R. Kim Oates et al, ‘Erroneous Concerns About Child Sexual Abuse’, (2000) 24(1) *Child Abuse and Neglect* 149.
- ⁸² David Lisak, Lori Gardinier, Sarah C Nicksa and Ashley M Cote, ‘False Allegations of Sexual Assault: An Analysis of Ten years of Reported Cases’, (2010) 16(12) *Violence Against Women* 1318. This statistic was derived from 10 years of data on sexual assault allegations by students at a major US university.
- ⁸³ Joanne Belknap, ‘Rape: Too Hard to Report and Too Easy to Discredit Victims’, (2010), 16(2) *Violence Against Women* 1335.
- ⁸⁴ *Gestmin v Credit Suisse Ltd*, [2013] EWHC 3560 (Comm).
- ⁸⁵ Martine Powell, Romana Murfett and Donald M Thomson, ‘An Analysis of Police Officers’ Decisions about Whether to Refer Cases of Child Abuse for Prosecution’ (2010) 16(8) *Psychology, Crime & Law* 715.
- ⁸⁶ The study investigated the influence of reporting delay (two years versus 15 and 30 years), victim–offender relationship (uncle versus coach) and abuse frequency (once versus 12 times). Convictions were higher when the reporting delay was shorter (two years: 59 per cent; 15 years: 57 per cent; 30 years: 49 per cent), the offender was an uncle (59 per cent versus soccer coach: 51 per cent, held only when abuse was a single event), and the abuse happened multiple times (59 per cent versus 52 per cent if it was a single event);

Misconceptions about reminiscence effects or later recall

Related to misconceptions about the relationship between delay and memory accuracy are misconceptions of reminiscence and hypermnnesia. A reminiscence occurs when a witness remembers additional information after making an initial statement and puts forward the newly remembered details in a later interview or at trial.⁸⁷ This can lead to an increase in the total amount of information recalled, or hypermnnesia. Evidence of reminiscence in legal proceedings is treated with suspicion because it appears to violate the common, but incorrect, view that memory declines progressively and steadily with the passage of time. Thus, recall of more information than was retrieved at an earlier point in time is viewed as a hallmark of an unreliable memory, and is generally interpreted as a negative inconsistency.⁸⁸ This misconception was confirmed by trial simulation research showing that when a witness recalled a new detail while testifying in court, it reduced the mock jurors' assessments of their credibility.⁸⁹ Conversely, memory research assessing whether reminiscences are predictive of memory accuracy has shown that reminiscences are usually reliable⁹⁰, as is discussed in Chapter 5.

A study of experienced detectives confirmed that many endorsed this misconception. Their estimates of the accuracy of statements given by eyewitnesses immediately after an event versus one week later were compared with the actual performance of the eyewitnesses at these times. Without exception, all eyewitnesses spontaneously experienced reminiscence and reported new details in the second interview.⁹¹ The police officers anticipated that reminiscences would be inaccurate, whereas their accuracy rate was reasonably high. The police officers also anticipated a sharp decline in recall accuracy after a delay of one week, whereas accuracy remained stable in that period. Analyses of reasons the detectives gave for anticipating inaccuracies in reminiscences showed that approximately half believed that reminiscences were the result of external influences, such as social pressure, or exposure

Joanna D Pozzulo, Julie L Depmsey and Charmagne Crescini, 'Factors Affecting Juror Decisions in Historic Child Sexual Abuse Cases Involving Continuous Memories' (2010) 37(9) *Criminal Justice and Behavior* 951.

⁸⁷ Ronald P Fisher, Neil Brewer and Gregory Mitchell, 'The Relation Between Consistency and Accuracy of Eyewitness Testimony: Legal versus Cognitive Explanations' in Tom Williamson, Ray Bull and Tim Valentine (eds), *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* (Wiley-Blackwell, 2009).

⁸⁸ Aileen Oeberts, 'If Anything Else Comes to Mind ... Better Keep it to Yourself? Delayed Recall is Discrediting—Unjustifiably' (2012) 36(4) *Law and Human Behavior* 266.

⁸⁹ Ibid; Sarah Deck and Helen Paterson, 'The Effect of a Contemporaneous Note upon Juror Decision-Making (Experiment 2)' (2016, manuscript submitted for publication).

⁹⁰ Ronald P Fisher, Neil Brewer and Gregory Mitchell, 'The Relation Between Consistency and Accuracy of Eyewitness Testimony: Legal versus Cognitive Explanations' in Tom Williamson, Ray Bull and Tim Valentine (eds), *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* (Wiley-Blackwell, 2009); Aileen Oeberts, 'If Anything Else Comes to Mind ... Better Keep it to Yourself? Delayed Recall is Discrediting—Unjustifiably,' (2012), 36(4) *Law and Human Behavior* 266.

⁹¹ The eyewitnesses in this study were 84 German police students and 61 uniformed police officers.

to media reports, and were not due to ordinary memory processes associated with cognitive retrieval.⁹²

Misconceptions about autobiographical memories

Questions arise with memories of child sexual abuse, particularly in historical abuse, about how accurate and reliable these memories are, the age at which first childhood memories can be retrieved and whether adults can accurately recall early childhood events. In contrast to scientific findings on autobiographical memory discussed in Chapter 4, research has shown that the majority of laypeople in a study incorrectly believed that it was typical to recall events at ages as young as two to five (two years: 19.0 per cent; four years: 41.6 per cent; five years: 24.5 per cent).⁹³

Comparatively few studies have examined perceptions of complainants' memories in cases of historical child sexual abuse, or in cases in which adult complainants reported experiences of child sexual abuse. Research has yielded results showing that some contradictory beliefs on this topic are commonly endorsed. For example, many people incorrectly believe that adults can retrieve memories of their infancy and early childhood.⁹⁴ Nonetheless, a mock-trial simulation study found higher conviction rates when the reporting delay was brief.⁹⁵ The bias against historical allegations of child sexual abuse in the latter study shows that juries may not anticipate or understand the reasons that adults delay before reporting historical cases of child sexual abuse.⁹⁶ Research on the effects of delay on memory is described in Chapter 5.

When evaluating memories of historical child sexual abuse, a further topic of importance is the prevalence of erroneous beliefs about recovered memories. Surveys administered to laypeople showed they had limited knowledge of the reliability of recovered memories, as

⁹² Alana C Krix et al, 'Consistency across Repeated Eyewitness Interviews: Contrasting Police Detectives' Beliefs with Actual Eyewitness Performance' (2015) 10(2) *PLoS ONE* 1. The law enforcement officers in this study were 81 detectives of the Dutch police, with an average of 20 years' experience.

⁹³ Martin A Conway, Lucy V Justice and Catriona M Morrison, 'Beliefs about Autobiographical Memory ... and why they Matter' (2014) 27(7) *The Psychologist* 502.

⁹⁴ *Ibid.*

⁹⁵ A mock-trial simulation investigated the effects of a delay of two years, 15 years or 30 years in reporting either intrafamilial or institutional child sexual abuse in which the abuse was either a single event or repeated 12 times. Joanna D Pozzul, Julie L Dempsey and Charmagne Crescini, 'Factors Affecting Juror Decisions in Historical Child Sexual Abuse Cases Involving Continuous Memories' (2010) 37(9) *Criminal Justice and Behavior* 951. The mock jurors were 295 psychology undergraduates.

⁹⁶ Jane Goodman-Delahunty, Anne Cossins and Kate O'Brien, 'A Comparison of Expert Evidence and Judicial Directions to Counter Misconceptions in Child Sexual Abuse Trials' (2011) 44(2) *Australian & New Zealand Journal of Criminology* 196; Anne Cossins, Jane Goodman-Delahunty and Kate O'Brien, 'Uncertainty and Misconceptions About Child Sexual Abuse: Implications for the Criminal Justice System' (2009) 16(3) *Psychiatry, Psychology, and Law* 435.

their responses were at the level of random guessing.⁹⁷ Unlike memory experts, police officers and members of the public were more likely to agree that traumatic experiences could be repressed for many years.⁹⁸ These findings show that common beliefs do not correspond with the scientific findings about autobiographical memories, which are described in more detail in chapters 4 and 5.

2.3 Misconceptions about the effects of trauma and emotion on memory

Misconceptions about memories of traumatic experiences

In a jury sample, erroneous beliefs about memory included the view that memories of emotionally intense experiences were both indelible and more accurate than memories of non-traumatic events.⁹⁹ Other studies confirmed that laypeople believed that memories of emotional experiences were highly accurate.¹⁰⁰ Specifically, representation of experiences in long-term memory were perceived to be more accurate if they were more emotional and dramatic.

However, police officers in the United Kingdom agreed with memory experts in their perceptions that the reliving of traumatic experiences did not make the durable memory more accurate, whereas the general public tended to endorse this misconception.¹⁰¹ In the latter study, most police officers and memory experts correctly disagreed that memories of highly emotive events and negative experiences are more accurate than memories of less intense, neutral and positive events, whereas more than half of the members of the public incorrectly agreed.¹⁰²

Misconceptions about emotional display as indicative of memory veracity

Related to beliefs about the effect of emotion on memory are responses to emotional displays by a witness while giving evidence about an event experienced as distressing at the time of its occurrence. A display of emotion while giving evidence is commonly believed to reflect the accurate retrieval of the traumatic memory. For example, a review of 98 real forensic

⁹⁷ Catia Pelisoli, Steve Herman and Debora Dalbosco Dell'Aglio, 'Child Sexual Abuse Research Knowledge among Child Abuse Professionals and Laypersons' (2015) 40 *Child Abuse & Neglect* 36.

⁹⁸ Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (2017) (manuscript submitted for peer review, copy on file with report authors).

⁹⁹ Katrin Hohl and Martin A Conway, 'Memory as Evidence: How Normal Features of Victim Memory Lead to the Attrition of Rape Complaints' (2016) 17(3) *Criminology and Criminal Justice* 248.

¹⁰⁰ Martin A Conway, Lucy V Justice and Catriona M Morrison, 'Beliefs about Autobiographical Memory ... and why they Matter' (2014) 27(7) *The Psychologist* 502; Svein Magnussen et al, 'What People Believe about Memory' (2006) 14(5) *Memory* 595.

¹⁰¹ Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (2017) (manuscript submitted for peer review, copy on file with report authors).

¹⁰² Ibid.

interviews of child sexual abuse victims showed that most children did not display any emotions, except for some sadness¹⁰³, and that experiences of more frequent and recurring abuse were associated with lower perceived positive affect.¹⁰⁴ These realities conflict with the expectations of some jurors. For example, when a sample of non-empanelled jurors in New South Wales were asked whether the evidence of a child who was tearful while testifying at trial was more likely to be accurate, 41.3 per cent said they were inclined to rely on this type of emotional display as an indicator of veracity.¹⁰⁵ In the United States, undergraduates who were eligible for jury service were more likely to convict if they perceived the complainants in a simulated trial to be more emotional. More visible distress was expected from older child victims than their younger counterparts.¹⁰⁶ In line with this expectation, older children in a mock trial who displayed little emotion were believed less credible than their younger counterparts.¹⁰⁷

Additionally, some differences in mock jurors' gender expectations emerged in relation to complainants' displays of emotion when giving evidence about experiences of child sexual abuse. For example, mock jurors expected more emotional intensity, and especially sadness and fear, from female child complainants than they did from male child complainants. They also expected more anger from male than female child complainants.¹⁰⁸

2.4 Misconceptions about memory for recurring events

In its consultation paper, the Royal Commission noted the paradox that victims of a single abuse event often fared better than victims of recurring, ongoing abuse. Trial simulation studies that have compared responses of mock jurors to multiple versus single abuse incidents have confirmed this bias in favour of victims who experienced less abuse. In one mock-jury study, children who reported a single event (not involving child sexual abuse) were rated as significantly more competent, credible and consistent, and less suggestible than

¹⁰³ Paola Castelli and Gail S Goodman, 'Children's Perceived Emotional Behaviour at Disclosure and Prosecutors' Evaluations' (2014) 38(9) *Child Abuse & Neglect* 1521.

¹⁰⁴ Ibid.

¹⁰⁵ Jane Goodman-Delahunty, Natalie Martschuk and Annie Cossins, 'What Australian Jurors Know and Don't Know about Child Sexual Abuse Cases' (2017) 42(2) *Criminal Law Journal* 86.

¹⁰⁶ Older complainants were aged 13 and younger counterparts were aged five years, Daniel Bederian-Gardner and Deborah Goldfarb, 'Expectations of Emotions during Testimony: The Role of Communicator and Perceiver Characteristics' (2014) 32(6) *Behavioral Sciences and the Law* 829.

¹⁰⁷ A child sexual abuse trial simulation study in which the complainant's age was varied (aged six versus 13) and accompanied by a drawing of either a composed, calm or a crying child, Alexia Cooper, Jodi A Quas and Kyndra C Cleveland, 'The Emotional Child Witness: Effects on Juror Decision-Making' (2014) 32(6) *Behavioral Sciences and the Law* 813.

¹⁰⁸ Daniel Bederian-Gardner and Deborah Goldfarb, 'Expectations of Emotions during Testimony: The Role of Communicator and Perceiver Characteristics' (2014) 32(6) *Behavioral Sciences and the Law* 829.

children who reported an event that occurred four times.¹⁰⁹ This outcome may indicate that juries are unsure how to assess memory for single versus recurring events because they lack insight into memory processes for recurring events. Conversely, in a study investigating mock-jurors' decisions about one-off versus 12 incidents of abuse in a case presented either as an historical or a contemporary case showed a significantly higher conviction rate and greater confidence in verdicts when the abuse was perpetrated multiple times as opposed to once.¹¹⁰

Children are often unable to recall precise temporal details about when an event or events occurred, but many adults are unaware of this feature of children's memory and may disregard other evidence from a child who is unable to provide temporal details. Irrespective of age, children who expressed confidence about temporal details were rated as more credible, leading to more convictions, than children who were unsure of temporal details.¹¹¹ Recall of temporal details of individual abuse incidents is particularly difficult for children who have experienced multiple abuse incidents, as is discussed in Chapter 7.

2.5 Misconceptions about investigative interviewing

Beliefs about human memory, the influence of different types of questioning, and indicators of truth, error and deception held by investigative interviewers can have a significant influence on the outcomes of child sexual assault cases. Studies have repeatedly shown that the beliefs of law enforcement officers do not reflect current scientific knowledge on memory; instead, their perceptions of memory are often undifferentiated from those of members of the public.¹¹²

¹⁰⁹ In two simulated trials community members acted as mock jurors, a child gave evidence about either a single event or repeated events, and the age of the child was varied (ages 4–5 versus ages 6–7), Deborah A Connolly et al, 'Perceptions and Predictors of Children's Credibility of a Unique Event and an Instance of a Repeated Event' (2008) 32(1) *Law and Human Behavior* 92; mock jurors were asked questions about videorecorded interviews of actors who had experienced a single event versus repeated events, Camille Courtney Weinsheimer, *Perceptions of Credibility for a Memory Report of a Single versus Repeated Event* (master's dissertation, Simon Fraser University, 2016).

¹¹⁰ Joanna D Pozzulo, Julie L Dempsey and Charmagne Crescini, 'Factors Affecting Juror Decisions in Historic Child Sexual Abuse Cases Involving Continuous Memories' (2010) 37(9) *Criminal Justice and Behavior* 951. The mock jurors were 295 psychology undergraduates.

¹¹¹ In a trial simulation study, undergraduate students rated the credibility of a child aged either six or 11 who was either confident or tentative about temporal details. Kyndra C Cleveland and Jodi A Quas, 'Adults' Insensitivity to Developmental Changes in Children's Ability to Report When and How Many Times Abuse Occurred' (2016) 34(1) *Behavioral Sciences and the Law* 126.

¹¹² Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (2017) (manuscript submitted for peer review, copy on file with report authors); Tanja Rapus Benton et al, 'Eyewitness Memory is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts' (2006) 20(1) *Applied Cognitive Psychology* 115; Julie A Buck et al, 'How Common is "Common Knowledge" about Child Witnesses among Legal Professionals? Comparing Interviewers, Public Defenders, and Forensic Psychologists with Laypeople' (2014) 32(6) *Behavioral Sciences and the Law* 867.

For instance, one recent study identified gaps in the knowledge of investigative interviewers, who differed significantly from memory experts in their understanding of six memory topics: what people remember, signs of memory accuracy, memory accuracy for stressful and emotive events, memory as a video camera or literal record of experience, memory for trauma and abuse, and childhood memory.¹¹³ As was noted above, memory knowledge of law enforcement officers was more likely to fall within the Common Sense Memory Belief System than the Scientific Memory Belief System. Another study revealed that gaps between the responses of law enforcement officers and memory experts was greatest in relation to the perceived accuracy of child witnesses and long-term memory repression.¹¹⁴

Of some concern was the finding that law enforcement officers differed significantly from memory experts in their views about the extent to which the wording of questions asked of witnesses can influence the retrieval of memory of an event, since this is one of the most robust and well-documented memory effects, as is discussed in Chapter 8. Moreover, this topic is one of the core features of training programs for investigative interviewers. Further, another study showed that investigative interviewers mistrusted the empirical research on this topic, as they were sceptical about the reliability of children's responses to open-ended questions, spontaneous reminiscence and witness self-corrections.¹¹⁵

Surprisingly, investigative interviewers' years of experience in their current profession or with child sexual abuse cases was shown to be unrelated to their knowledge about the influence of interview techniques on the accuracy of statements elicited from a child witness.¹¹⁶ However, interviewers who had more formal classroom training were more knowledgeable about the topic.¹¹⁷ Thus, exposure to training may reduce memory misconceptions and improve interview quality.

The importance of different aspects of an investigative interview on eliciting a complete and reliable memory of child sexual abuse from a child or adult is discussed in more in detail in Chapter 8.

¹¹³ Shazia Akhtar et al, 'The "Common Sense" Memory Belief System' (2017) (manuscript submitted for peer review, copy on file with report authors).

¹¹⁴ Tanja Rapus Benton et al, 'Eyewitness Memory is Still Not Common Sense: Comparing Jurors, Judges and Law Enforcement to Eyewitness Experts' (2006) 20(1) *Applied Cognitive Psychology* 115.

¹¹⁵ Knowledge of undergraduate students, police, public defenders and investigative interviewers about the influence of interview questions on the memory of a child over the age of six years was tested in a 12-item survey. Julie A Buck, Amie Warren and Maggie Bruck, 'How Common is "Common Knowledge" about Child Witnesses among Legal Professionals? Comparing Interviewers, Public Defenders, and Forensic Psychologists with Laypeople' (2014) 32(6) *Behavioral Sciences and the Law* 867.

¹¹⁶ Ibid.

¹¹⁷ Ibid. Interviewers who had more than 25 hours of formal classroom training performed significantly better than interviewers who had less than 25 hours of training.

Key points on misconceptions about memory

- Common-sense memory beliefs do not correspond with scientific knowledge about memory.
- The memory knowledge of law enforcement officers, legal practitioners, judges and juries differs significantly from that of memory experts.
- Documented knowledge gaps about human memory influence the perceptions and decisions of police, legal professionals, courts and juries in relation to evidence elicited from victims of child sexual abuse.
- The need for educative guidance on memory in forensic settings has been established by empirical research.

Chapter 3

Overview of forensic memory research

This chapter sets out the research methods applied to memory in forensic contexts and reviews their contributions to the assessment of memories of child sexual abuse victims. In addition to studies on event memory, research on autobiographical memory is essential to understanding memory in relation to child sexual abuse. Forensic memory research has been dominated by studies of eyewitnesses rather than victims. Controlled laboratory experiments explore causal relationships between variables of interest. Eyewitness studies test memory for staged events with unknown perpetrators. False memory studies examine how susceptible individuals are to suggestion following exposure to wordlists, post-event misinformation or implanted 'memories'. Child sexual abuse analogue studies assess memories for negative experiences in naturalistic or real-world settings. Field studies, which are conducted with actual trauma and child sexual abuse victims, differ in their internal, external and ecological validity.

This chapter introduces the major research methods applied in forensic memory research. It discusses the strengths and weaknesses of each approach and evaluates their generalisability to memories of child sexual abuse.

3.1 The research context

Some memory research is more theoretically oriented, while other psychological scientific research is more clearly applied. The focus in this report is applied psychological science on the topic of memory in forensic settings.

A number of observations can be made about the research publications reviewed to compile this report. First, memory of child sexual abuse is autobiographical in nature, as it involves interpersonal relationships and multiple or ongoing events. Yet studies of autobiographical memory have somewhat lagged behind studies on memory for more straightforward matters, such as single events and wordlists. While survivors of child sexual abuse may at times be in the position of an eyewitness rather than a participant in abusive events, it is primarily their autobiographical memory that is affected, whether by a single incident or a series of repeated incidents of abuse. Victims of child sexual abuse are often the only witness with direct evidence of the alleged abuse. By contrast, studies have shown that other crimes typically have several bystanders.¹¹⁸ Nonetheless, research on eyewitness memory for criminal events of brief duration has dominated the memory and law landscape.

¹¹⁸ A study of 60 criminal cases in which suspect identification was in issue (including violence against a person, robbery, burglary, fraud and forgery) in the United Kingdom, revealed that the average number of witnesses

3.2 The dominance of eyewitness memory research

More than 30 years ago, the research community acknowledged that the dominance of eyewitness identification research was a limitation to research advances in both psychology and law.¹¹⁹ Those limitations were reiterated in the 1990s in critiques of the scope of research conducted. A review of the discipline almost two decades ago made the following illustrative comment: 'Though psycholegal studies are almost a century old it has been slow to expand beyond the border of eyewitness identification and behaviour of jurors and juries'.¹²⁰ Nonetheless, eyewitness memory has continued to receive a disproportionate amount of research attention. Within the field of eyewitness identification research, the majority of studies have examined memory for faces, variables that affect facial identification and memory reporting about perpetrator identification. By comparison, the features of memory for autobiographical events have received less attention.¹²¹

Two separate traditions in memory research have been distinguished. The first focuses on what is referred to as memory quantity, that is, the amount of information retained and recalled, and factors that contribute to the strength and persistence of a memory. Measures of autobiographical memory tend to fit within this tradition and to focus on the degree to which a memory is consistent with a person's self-belief and their autobiographical narrative.¹²² The second tradition of memory research had focused with 'an unparalleled preoccupation with the accuracy of memory',¹²³ rather than memory quantity and durability. Measures of event memory accuracy, whether about a single or recurring events, tend to focus on the degree of correspondence between the memory and the event in issue.

Eyewitness memory research and the majority of studies on event memory, including children's event memory, have been conducted almost exclusively within the second tradition of memory research. This tradition of memory research has examined 'the ways in which

was 4.02 ($SD = 6.52$) with a median of 2.5 witnesses. Only two crimes in this study were sexual offences, both of which had two witnesses. Elin M Skagerberg and Daniel B Wright, 'The Prevalence of Co-Witnesses and Co-Witness Discussions in Real Eyewitnesses' (2008) 14(6) *Psychology, Crime & Law* 513.

¹¹⁹ Michael J Saks, 'The Law Does Not Live by Eyewitness Testimony Alone (editorial)' (1986) 10(4) *Law and Human Behavior* 279.

¹²⁰ Donald N Bersoff 'Preparing for Two Cultures: Education and Training in Law and Psychology' in Ronald Roesch, Stephen D Hart and James R P Ogloff (eds), *Psychology and Law: The State of the Discipline* (Kluwer/Plenum Publishers, 1999) 375, 382.

¹²¹ Berenike Waubert de Puiseau, *On the Assessment of Witnesses' Memory for Events* (doctoral dissertation, University of Dusseldorf, 2016) 5.

¹²² Martin Conway, Jefferson A Singer and Angela Tagini, 'The Self and Autobiographical Memory: Correspondence and Coherence' (2004) 22(5) *Social Cognition* 491.

¹²³ Ainat Pansky, Asher Koriath and Morris Goldsmith, 'Eyewitness Recall and Testimony' in Neil Brewer and Kipling D Williams (eds), *Psychology and Law: An Empirical Perspective* (Guildford Press, 2005), 93–150, 94.

memory can go wrong’ or ‘memory distortions rather than mere forgetting’.¹²⁴ The latter focus is evident, for example, in the recent guidance for legal practitioners in Australia and New Zealand on memory. It specifies at the outset: ‘This chapter summarises those factors that have been shown to affect the detail, accuracy and quality of eyewitness testimony’.¹²⁵ The prevailing model is essentially a deficit model.¹²⁶ Many memory research findings have been framed around witness fallibility, implicitly, and at times explicitly, supporting the legal misconception that a witness who provides more extensive details is reporting accurately what transpired.¹²⁷ As is discussed more extensively in Chapter 4, errors of omission, in the form of gaps and fragmented information, as well as errors of commission, are fundamental features of human memory.¹²⁸

A consequence of the deficit model of human memory is that locating studies that highlight memory strengths¹²⁹ in both adults and children is often difficult because the research paradigms do not frame research questions that yield insights into those aspects of memory. Discerning memory strengths is especially complex for legal professionals unfamiliar with the researchers’ scientific conventions. There is a dearth of guidance for the legal community on indicators of a strong or reliable memory, or on the extent to which errors, omissions and inconsistencies are indicators of a reliable or unreliable witness.

While the event memory paradigm has not focused exclusively on memory error and deficits, studies on how children respond to different question types and different techniques during investigative interviews have often emphasised children’s suggestibility.¹³⁰

Findings in early studies conducted in approximately 1900, using suggestive questions, showed that children were more prone to error than adults when performing unrealistic tasks

¹²⁴ Ibid.

¹²⁵ Martine Powell, Maryanne Garry and Neil Brewer, ‘Eyewitness Testimony’ in Ian Freckelton and Hugh Selby (eds), *Expert Evidence* (Thomson Reuters, 2013) 65-1-65-570, 65–5.

¹²⁶ Kay Bussey, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 82, lines 10–17.

¹²⁷ Martin A Conway, ‘Ten Things the Law and Others Should Know about Human Memory’ in Lynn Nadel and Walter P Sinnott-Armstrong (eds), *Memory and Law* (Oxford University Press, 2012) 359.

¹²⁸ Ibid.

¹²⁹ James M Doyle, ‘Ready for the Psychologists: Learning from Eyewitness Errors’ (2012) 48(1-2) *Court Review: The Journal of the American Judges Association* 4.

¹³⁰ Research on children’s suggestibility published in the early 1990s has been criticised as scientifically biased by exaggeration due to partisan alliances with the defence in cases of child sexual abuse. See Gail S Goodman, Olivia Jones and Cynthia McLeod, ‘Is There Consensus about Children’s Memory and Suggestibility?’ (2017) 32(6) *Journal of Interpersonal Violence* 926, 934; Cynthia Grant Bowman, ‘The Legal System and Child Sex Abuse—Ross Cheit’s *The Witch-Hunt Narrative Politics, Psychology and the Sexual Abuse of Children*’ (2016) 41(1) *Law and Social Inquiry* 267; Colleen Friend and Susan M Snyder, ‘A Response To the Legacy of the Witch-Hunt Narrative’ (2017) 32(6) *Journal of Interpersonal Violence* 979, 984; Ross E Cheit, *The Witch-Hunt Narrative: Politics, Psychology and the Sexual Abuse of Children* (Oxford University Press 2014).

such as memorising lists of unrelated words.¹³¹ The perception that children's memories were especially susceptible to distortion, even for events of personal significance became widespread.¹³² This notion was accepted in the legal community, fuelled in part by research and expert evidence of influential child memory researchers on behalf of criminal defendants in child sexual abuse cases¹³³, and remains the perspective of many legal professionals today.¹³⁴

Starting in the 1980s, research findings began to show that children have remarkably accurate memories for events, even after periods of extended delay.¹³⁵ In the past decade, further research has demonstrated that young children are less suggestible than older adolescents and adults on a range of memory tasks, as is discussed in chapters 4 and 5.¹³⁶

Memory researchers motivated by their own agendas and interests do not necessarily respond to acknowledged research gaps. One example related to memories of child sexual abuse is the influence of repeated or ongoing abuse on a child's memory. More than 25 years ago in many jurisdictions in the United States (for example, in California in 1989), legislation was enacted that allowed generic memories (in lieu of particular event memories) to be presented in support of allegations of continuous or repeated incidents of child sexual abuse.¹³⁷ However, this legislation was not followed by corresponding research activity on generic memories. The issue had surfaced in United States case law as a psycholegal issue of some consequence as early as 1900¹³⁸, and came into prominence again in a decision of the Supreme Court of California in 1990.¹³⁹ However, only relatively recently was the question of children's abilities to differentiate between multiple abuse experiences noted to have

¹³¹ Gail S Goodman, 'Children's Eyewitness Memory: A Modern History and Contemporary Commentary' (2006) 62(4) *Journal of Social Issues* 811.

¹³² Stephen J Ceci and Maggie Bruck, *Jeopardy in the Courtroom: A Scientific Analysis of Children in the Courtroom* (Washington, DC: American Psychological Association, 1995).

¹³³ Ross E Cheit, *The Witch-Hunt Narrative: Politics, Psychology and the Sexual Abuse of Children* (Oxford University Press 2014).

¹³⁴ Gail S Goodman, Margaret Ellen-Pipe and Kelly McWilliams, 'Children's Eyewitness Memory: Methodological Issues' in Barry Rosenfeld and Steven D Penrod (eds), *Research Methods in Forensic Psychology* (John Wiley & Sons, 2011) 257–282, 261, 260.

¹³⁵ Robyn Fivush, Judith Hudson and Katherine Nelson, 'Children's Long-Term Memory for a Novel Event: An Exploratory Study' (1984) 30(3) *Merrill-Palmer Quarterly* 303.

¹³⁶ National Science Foundation, 'Children's Memory May Be More Reliable Than Adults' In Court Cases', *Science Daily* (Online), 17 March 2008. Available at < <https://www.sciencedaily.com/releases/2008/03/080313124445.htm> >

¹³⁷ See, for example, Arizona, Continuous Sexual Abuse of a Child, 13-1417 section 13-1405, 13-406, 13-1410 and 13-705; California, Continuous Sexual Abuse of a Child, Penal Code section 28 8.5; North Dakota, Continuous Sexual Abuse of a Child code 12. 1-20-03.1; Tennessee, Tennessee Code Annotated 39-13-518 Continuous Sexual Abuse of a Child; Texas Penal Code 21.02 Continuous Sexual Assault of a Child.

¹³⁸ *People v Castro*, 11 [65 P. 13] [51Cal.3d 306] (Cal, 1901).

¹³⁹ *People v Jones*, 51 (Cal 3d, 294, 1990).

‘launched a small but growing line of research’.¹⁴⁰ The distinction is important as research results have confirmed that memory for repeated events differs from memory for single events, as is discussed in Chapter 7.¹⁴¹

3.3 Methods to study memory

Applied psychological research on human memory has been conducted through controlled laboratory experiments, analogue studies, field studies and case studies. A wide and diverse range of research paradigms has been applied. It is beyond the scope of this report to document and compare all research methods and paradigms applied in studies of human memory. However, it is important to acknowledge that the paradigms and methods themselves incorporate certain orientations towards memory performance; for example, how the errors are counted and represented proportional to a record of the event, or how the quantity, durability and coherence of information recalled is calculated.

Controlled laboratory experiments

Controlled laboratory experiments are conducted under standardised conditions in a well-controlled environment. Ideally, participants are randomly allocated to one of several experimental groups and tested individually or in groups. This procedure allows the researchers to establish causal relationships between the manipulated variables of interest. These studies are, however, criticised for having low ecological validity. A number of different paradigms have been used to study event memory and false memory laboratory experiments.

Eyewitness paradigm studies

In the eyewitness paradigm, participants (typically undergraduate students) ‘witness’ a criminal event such as a staged mock crime or a film depicting a crime. Following a brief delay, and, commonly, an experimental manipulation (such as exposure to incorrect information about the event¹⁴²), participants’ memory for the perpetrator and/or the crime scene is assessed. The eyewitness paradigm is an appropriate analogue for eyewitness memory in many types of crimes (for example, a bank robbery). However, the application of eyewitness research to memory for events such as child sexual abuse may be limited by differences in the nature of the crimes involved and the experiences of an eyewitness compared to a victim of child sexual abuse. In addition, research conducted with homogenous student samples

¹⁴⁰ Jason J Dickinson, Debra A Poole and Rachel L Laimon, ‘Children’s Recall and Testimony’ in Neil Brewer and Kipling D Williams (eds), *Psychology and Law: An Empirical Perspective* (The Guildford Press, 2005) 151–176.

¹⁴¹ Heather Price and Deborah Connolly, ‘Suggestibility Effects Persist after One Year in Children who Experienced a Single or Repeated Event’ (2013) 2(2) *Journal of Applied Research in Memory and Cognition* 89.

¹⁴² See, for example, Daniel B Wright, Gail Self and Chris Justice, ‘Memory Conformity: Exploring Misinformation Effects when Presented by Another Person’ (2000) 91(2) *British Journal of Psychology* 189.

under laboratory conditions may be less informative about the memory of a heterogeneous group of victims of child sexual abuse.¹⁴³

A series of studies on the reliability of children's memory addressed some of these limitations by modifying the research procedures and variables manipulated. Since it is ethically impermissible to randomly assign children to an experience of sexually abusive contact to test their memory for that experience, researchers have simulated events involving non-contact or contact negative experiences. For example, child participants in the studies were active participants in staged events (for example, exposure to a magic show) or were required to interact with the actors, rather than merely observing a video or listening to a story about fictional characters. However, some studies intended to mimic features of child sexual abuse cases included staged events in which children interacted with a stranger¹⁴⁴, focusing on children's memory for 'stranger danger' rather than abuse committed by someone known to the child victim.

False memory paradigm studies

Common experimental paradigms used to assess susceptibility to what are termed 'false memories' include (1) the post-event misinformation paradigm¹⁴⁵; (2) the Deese-Roediger-McDermott paradigm (DRM paradigm)¹⁴⁶; and (3) the memory implantation technique.¹⁴⁷

The *leading/misleading questions paradigm* is a set of procedures devised to examine impairments in eyewitness memory after exposure to misleading information. In a typical study, research participants are briefly exposed to some information (for example, one or more visual images on a slide, or a staged crime). They then answer some leading or misleading questions about the content of the image before performing a memory test about the image's content. The key issue is the extent to which the suggested misinformation in misleading questions is incorporated into memory. In some studies, the staged crime is followed by an interview in which the interviewer asks the participants about the event using varying types of questions.¹⁴⁸ The conclusion of a contemporary review of the strength of the

¹⁴³ See, for example, Berenike Waubert de Puiseau et al, 'Extracting the Truth from Conflicting Eyewitness Reports: A Formal Modelling Approach' (2012) 18(4) *Experimental Psychology: Applied* 390.

¹⁴⁴ Gail S Goodman, Margaret Ellen-Pipe and Kelly McWilliams, 'Children's Eyewitness Memory: Methodological Issues' in Barry Rosenfeld and Steven D Penrod (eds), *Research Methods in Forensic Psychology* (John Wiley & Sons, 2011) 257, 261.

¹⁴⁵ Elizabeth F Loftus, *Eyewitness Testimony* (Harvard University Press, 1979).

¹⁴⁶ Henry Otgaar et al, 'The Production of Spontaneous False Memories across Childhood' (2014) 121 *Journal of Experimental Child Psychology* 28.

¹⁴⁷ Stephen J Ceci et al, 'Repeatedly Thinking about a Non-Event: Source Misattributions among Pre-Schoolers' (1994) 3(3-4) *Consciousness and Cognition* 388.

¹⁴⁸ Gail S Goodman, Margaret-ElLEN Pipe and Kelly McWilliams, 'Children's Eyewitness Memory: Methodological Issues' in Barry Rosenfeld and Steven Penrod (eds), *Research Methods in Forensic Psychology* (John Wiley & Sons, 2011) 257, 270.

misinformation effect was that it arises mostly for details of an event that are not particularly memorable or salient, and that mere exposure to misinformation does not necessarily imply that false information will be incorporated into memory.¹⁴⁹

In the *DRM paradigm*, research participants review lists of related words (for example, whisker, purr, fur). These words are associated with a non-presented theme word called the 'critical lure' (for example, cat). Recall and recognition tests show that participants falsely recollect the critical lure.¹⁵⁰ Nomination of the word 'cat' is designated a 'false memory'. This memory illusion is automatic or spontaneous¹⁵¹, whereas incorporation of erroneous information into memory reports in the misinformation paradigm above is induced by suggestion.

In the *false memory implantation* paradigm, as the name suggests, researchers present false and real memories to participants, who are then asked about these events on seven to 10 subsequent occasions to assess the extent to which they incorporate the false memories as their own. Across 14 studies, approximately one-third of the participants adopted a false memory in whole or in part. Interviewees can provide false memory reports that are very rich in detail. However, the richness of the account does not indicate whether it is true. Notably, efforts to implant false memories of an experience of an event involving intrusive anal contact (that is, a rectal enema), analogous to a memory of sexual abuse, were unsuccessful – none of the participants adopted this memory.¹⁵²

As shown by the descriptions of the three research paradigms, in reporting experimental results, memory researchers use the term 'false memory' to refer to different and unrelated memory processes¹⁵³. They show effects of vastly different legal significance; that is, the term

¹⁴⁹ Adam L Putnam, Victor W Sungkhasettee and Henry L Roediger, 'Misinformation Improves Memory: The Effects of Recollecting Change' (2017) 28(1) *Psychological Science* 36.

¹⁵⁰ Henry L Roediger and Kathleen B Mcdermott, 'Creation of False Memories: Remembering Words Not Presented in Lists' (1995) 21(4) *Journal of Experimental Psychology: Learning, Memory, and Cognition* 803; Cynthia A Meyersburg et al, 'False Memory Propensity in People Reporting Recovered Memories of Past Lives.' (2009) 118(2) *Journal of Abnormal Psychology* 399. In a study, performance on the DRM list was compared between 53 children (aged nine and 10) and 54 adults. Compared to children, adults were more likely to report the critical false targets: Katrina Sugrue and Harlene Hayne, 'False Memories Produced by Children and Adults in the DRM Paradigm' (2006) 20(5) *Applied Cognitive Psychology* 625.

¹⁵¹ Henry Otgaar et al, 'The Production of Spontaneous False Memories across Childhood' (2014) 121 *Journal of Experimental Child Psychology* 28.

¹⁵² Kathy Pezdek, Kimberly Finger and Dandle Hodge, 'Planting false childhood memories: The role of event plausibility' (1997) 8(6) *Psychological Science* 437. Participants were 49 high school students.

¹⁵³ For example, formal testing showed no significant relation between children's susceptibility to the DRM illusion and their adoption of suggestive misinformation. Twenty children with implanted false memories did not falsely recall and recognise more critical DRM 'lures' than children without implanted false memories, showing that DRM intrusions were unrelated to acceptance of suggestive information. Henry Otgaar and Ingrid Candel, 'Children's False Memories: Different False Memory Paradigms Reveal Different Results' (2011) 17(6) *Psychology, Crime & Law* 513.

‘false memory’ does not distinguish between an entirely false or fabricated event; a minor incorrect detail or a component within an otherwise accurate report or account of an event; or use of a related synonym in place of verbatim recall. This research practice is bound to generate confusion among non-psychologists who are unfamiliar with these research paradigms and the differences between the precise memory tasks and effects with the same name.

Not every factual inaccuracy or inconsistency with other evidence indicates a false complaint. To the contrary, contemporary research reflects that ‘their absence rather than their presence’ should trigger concern¹⁵⁴, as memory research shows that memory is not infallible, and that it is not unusual nor an indication of deceit for memory to include discrepancies and gaps¹⁵⁵, or to fill them in by making automatic inferences, as is described in more detail in Chapter 4.

Determining rates of false allegations of sexual assault is complicated by the overlap in the published research with entirely different phenomena within the term ‘false memory’.

Child sexual abuse analogue studies

Some researchers have also studied samples of children exposed to a physical contact experience (such as a medical examination), an intrusive medical procedure (such as an injection or dental visit) or genital touching.

In the analogue research paradigm, researchers systematically study naturalistic events such as medical procedures and treatment for injuries that include variables of interest in child sexual abuse cases (for example, memory of physical touch and pain).¹⁵⁶ Interest in children’s memory for painful medical procedures was in part based on the notion that child sexual abuse involves activities that can cause physical pain. It is not unusual for child abuse victims to experience no physical injury or physiological pain, to state that they love their abusers, and to wish to maintain contact with them.¹⁵⁷

Analogue research designs are better adapted than other research methods to assess memories of events more akin to real cases of child sexual abuse. However, many of the staged events in analogue studies nonetheless differ from those in typical cases of child sexual

¹⁵⁴ Candida Saunders, ‘The Truth, the Half-Truth, and Nothing Like the Truth: Reconceptualising False Allegations of Rape’, (2012) 52(6) *British Journal of Criminology* 1152, 1160.

¹⁵⁵ Ibid.

¹⁵⁶ Gail S Goodman, Margaret-Ellen Pipe and Kelly McWilliams, ‘Children’s Eyewitness Memory: Methodological Issues’ in Barry Rosenfeld and Steven Penrod (eds), *Research Methods in Forensic Psychology* (John Wiley & Sons, 2011) 257, 270.

¹⁵⁷ For example, in *People v Jones*, (1990) 270 Cal Rptr 611, the complainant, aged 10 at the onset of abuse and 13 at the time of trial, informed the authorities that he loved his foster-father and wanted to continue living with him.

abuse in significant ways, such as the duration and the nature of the interactions in issue, the similarity of the analogue event to child sexual abuse, and the relationship between the child and the key actor in the staged events. For instance, during a medical procedure, typically a parent or other adult accompanies the child who is cognitively and emotionally prepared for the experience by a discussion in advance. The medical procedure or injury is publicly discussed and lacks the secretive nature of sexual abuse. The doctor is often a stranger to the child, but intends to treat and help the child, whereas in sexual abuse cases, the perpetrator is not focused on the welfare of the child, although the perpetrator and child are often well acquainted.

Field studies of memories of trauma and child sexual abuse

Field studies conducted with actual child sexual abuse victims examine commonalities in the experiences of victims. In these studies, researchers often compare children's accounts of abuse to the available corroborating evidence (for example, audio recordings).¹⁵⁸ However, corroborating evidence is rare. There are often selection biases at work in terms of how participants are identified and included in the studies. For example, participants are not randomised but are volunteers and are often convenience samples that are not representative of the population of sexually abused children. Or, cases are selected only where corroborating evidence exists. These factors can limit the generalisability of findings to other victims. In field studies where participants are victims of child sexual abuse or other traumatic events, such as a natural disaster or terrorist action¹⁵⁹, there is often no available record to validate the reported memories of the traumatic event.

In a retrospective review of research on children's memory from the 1970s to 2005, as it pertained to child sexual abuse, six key issues were identified as under-researched, warranting further attention. One issue was of interest primarily to the memory research community and outside the scope of this report, namely theoretical accounts for children's memory performance. Much experimental laboratory research fits within this category and entails tasks that often do not resemble the memory tasks required in daily life (for example, spontaneous wordlist associations).¹⁶⁰

Two additional issues – disclosure of abuse and the traumatic nature of the abuse – are features of child sexual abuse cases that are known to affect reporting. For example, before an official report of child sexual abuse is made to the police, victims are often influenced by

¹⁵⁸ Yael Orbach and Michael E Lamb, 'Assessing the Accuracy of a Child's Account of Sexual Abuse: A Case Study' (1999) 23(1) *Child Abuse & Neglect* 91.

¹⁵⁹ Ase Langballe and Jon-Hakon Schultz, "'I Couldn't Tell Such Things to Others': Trauma-Exposed Youth and the Investigative Interview' (2017) 18(1) *Police Practice and Research* 62.

¹⁶⁰ Donald M Thomson 'Reliability and Credibility of Children as Witnesses' in Julia Vernon (ed), *Proceedings of a Conference on Children as Witnesses* (Australian Institute of Criminology, 1991) 43.

the way their parents react to the disclosure and the amount of support they receive at the time of revealing their abuse. This is discussed further in Chapter 5. Similarly, the influence of trauma and mental disorders on memories of child sexual abuse can vary depending on the subjective reactions of each individual, as is discussed in more detail in Chapter 6.

Two further issues are of interest to the criminal justice sector: the role of socio-emotional factors in children's suggestibility and evaluations of adherence to best-practice interview protocols by police interviewers. These topics are addressed in detail in chapters 4 and 8, respectively.

The final issue, the ecological validity of studies on child eyewitnesses is critical in interpreting the research findings of these studies and in determining the extent to which they generalise to memories of child sexual abuse. Because this issue applies to all topics and studies summarised in this report, factors affecting generalisability are discussed next.

3.4 Assessing the generalisability of the research

To ensure that causal inferences are correctly attributed in experimental research and research findings can be generalised beyond the original study to other circumstances and to real-life settings, the internal, external and ecological validity of the research must be considered.

Internal validity is the extent to which the effects detected in a study were caused by an independent variable in the study, rather than by biasing effects of unmeasured variables.¹⁶¹

Internal validity is increased by the random assignment of participants to experimental groups and a design that controls confounding variables. For example, earlier studies on eyewitness memory suffered from a lack of clarity about information described as 'central' or 'peripheral' in terms of significance and spatial proximity, and a bias in the study designs towards presenting only central details in the experimental stimulus materials.¹⁶² In later studies, researchers distinguished between distinctive events and features, rather than between central and peripheral details.

External validity is the extent to which the findings of a research study generalise to other similarly situated people, or more specifically, the extent to which the findings will be replicated with respect to the memory of other individuals in similar circumstances.

¹⁶¹ American Psychological Association, *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 553.

¹⁶² Kenneth A Deffenbacher et al, 'A Meta-analytic Review of the Effects of High Stress on Eyewitness Memory' (2004) 28(6) *Law and Human Behavior* 687.

Finally, *ecological validity* (a subtype of external validity) is the extent to which the findings generalise to real-life memories about real-life events. One important way in which memory studies vary is the extent to which the study features replicate those of the real world.

Table 3.1 summarises some of the ways in which the features of memory experiments vary from features present in most cases of child sexual abuse.

Table 3.1: Features of memory experiments and cases of child sexual abuse

Ecological feature	Memory experiment	Child sexual abuse
Participants	Non-abused	Abused
Time between event and report	Minutes or days	Weeks, months, years
Negative events	None or mild	Can be severe
Familiarity with perpetrator	No	Known
Prior relationship with perpetrator	No	Parent, relative, friend
Ongoing relationship with perpetrator	No	Yes
Number of reported events	1	Can be hundreds
Personal life significance	Low	High
Episodic memory	Yes	Yes
Autobiographical memory	No	Yes
Consequences of memory report	None	Criminal charges

Note: Particular event memory experiments may vary, but most include these features.

Often there is a trade-off between experimental control, including randomly allocating participants to specific experimental groups, and the extent to which features of real sexual abuse cases can be included in controlled experiments. Many empirical psychological researchers have expressed doubts about the benefits of creating ‘verisimilitude’ (real-world realism) at the expense of scientific control over manipulated variables that activate psychological processes in laboratory settings – the same processes that are invoked in more realistic settings.¹⁶³ However, tests to assess the generalisability of the findings may be

¹⁶³ See Christina A Studebaker et al, ‘Studying Pretrial Publicity Effects: New Methods for Improving Ecological Validity and Testing External Validity’ (2002) 26(1) *Law & Human Behavior* 19; Gail S Goodman et al, ‘False

needed. For instance, concern has been expressed about the extent to which findings on reverse developmental effects that are obtained with children in controlled laboratory experiments can be applied to more realistic real-world situations, such as personal experiences:

[T]here is a lot of research that supports this notion of a developmental reversal in false memories, but it's grounded very much in these very restricted, highly controlled laboratory tasks, which are very useful for giving us a sense of mechanisms and how memory develops, but I think there is still a lot of questioning about how well we can generalise from that to the kinds of things that we're likely to see in a courtroom. And preliminary data so far, from our work, suggests that these two kinds of remembering don't line up very well at all.¹⁶⁴

Certain aspects of real-world autobiographical memories are more readily incorporated into research designs than others. For example, the extensive reporting delays in some historical cases of child sexual abuse are difficult to replicate in analogue studies, but a number of analogue studies have delay periods of up to five years.¹⁶⁵ These studies have also considered the differences in victims' memory development at the time of the event(s) and at the time of remembering or reporting the event.¹⁶⁶ In this way, it's possible to examine differences in children's level of understanding at the time of a critical event versus the time of reporting, and the effects of those differences on memory. This is important because young children may be unaware that a perpetrator's behaviour is criminal at the time of abuse.

Key points on forensic memory research

- Research on human memory processes uses a variety of methods, each of which has different strengths and limitations applicable to memories of child sexual abuse.
- The applicability of eyewitness studies to cases of child sexual abuse is more limited than that of analogue studies, which test memory for real-world personal life experiences that include features with some similarity to experiences of child sexual abuse (for example, intrusive medical procedures and genital touching).

Memory for Trauma-Related Deese-Roediger-McDermott Lists in Adolescents and Adults with Histories of Child Sexual Abuse' (2011) 23(2) *Development and Psychopathology* 423.

¹⁶⁴ Deirdre Brown, Royal Commission into Institutional Responses to Child Sexual Abuse, Public, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 19, lines 22–31.

¹⁶⁵ See, for example, Carole Peterson and Nikki Whalen, 'Five Years Later: Children's Memory for Medical Emergencies' (2001) 15(7) *Applied Cognitive Psychology* 7.

¹⁶⁶ Fiona Jack, Jessica Leov & Rachel Zajac, 'Age-Related Differences in the Free-Recall Accounts of Child, Adolescent, and Adult Witnesses' (2014) 28(1) *Applied Cognitive Psychology* 30.

- By comparison, field studies examine memory for real-world events, but lack experimental controls. For instance, field studies of trauma victims lack control over the circumstances of encoding, while those conducted with real child sexual abuse victims are often subject to sample selection biases.

Chapter 4

The nature of human memory

Memory is dynamic, reconstructive and subject to many influences. Memories can be adapted each time they are retrieved. They change over time and minor contradictions are to be expected. Rehearsing a memory (by thinking or talking about it) facilitates memory retention and retrieval. Gaps in memory are normal, but central, distinctive and personally significant aspects are likely to be encoded and retained. Distinctiveness may involve novelty, stress, trauma or pain. Recurring events result in the development of a script or schematic memory and details of peripheral aspects may not be encoded. People report the gist of what happened during similar and recurring events but do not clearly remember details particular to one instance. Memory for the gist of events tends to be accurate and enduring, but all memories fade over time. Reports given soon after an event are more likely to be detailed. People often remember more information each time they recall an event or experience. Children can provide competent memory reports from an early age. Their ability to tell a coherent narrative about an experience increases with age, and varies depending on individual cognitive and social factors. Children and adolescents may be able to recall events from before they were aged 5–7, but most adults cannot. Children may require support to retrieve and report what they know. Adults can help children to remember by structuring discussions around key event features. However, what is significant to an adult about an event may not be significant to a child, so memory support should acknowledge and follow the child's contribution. Children report fewer spontaneous false memories than adults, but like adults are susceptible to misreporting if asked leading questions.

The reporting of child sexual abuse necessarily involves recalling memories; however, the processes and development of human memory are often not well understood by fact finders. This chapter provides a brief overview of human memory processes. The first part of the chapter describes general memory functions and factors that facilitate memory. The second part of the chapter describes the development of memory processes in children and their suggestibility.

4.1 General memory processes

Three cognitive processes affect memory: encoding, consolidation and retrieval. Memories are actively manipulated during all three stages. Memory is a reconstructive process; thus, no memory is a literal account, nor an exact replica, of an experience or event. Memory is dynamic and complex.

Two types of knowledge affect memory reconstruction: episodic and conceptual. Episodic memories consist of 'short time slices of experience'¹⁶⁷ or 'summary records'¹⁶⁸ of a specific experience or event.¹⁶⁹ This knowledge is typically associated with sensory perceptions (for example, visual, auditory, tactile, haptic). 'The function of most episodic memories is to keep a record of progress of short-term goals and access to most episodic memories is lost soon after their formation'.¹⁷⁰

Conceptual or semantic memory includes autobiographical knowledge.¹⁷¹ Some episodic memories become integrated within an autobiographical structure for a personal life timeline or narrative¹⁷², and access to them becomes continuous.¹⁷³

Autobiographical memories are recollections of one's personal history¹⁷⁴, comprised of personally experienced episodes from our past. These memories are fundamental to our sense of self, goals and motivations, and interpersonal relationships, and also allow us to make sense of the present and anticipate the future.¹⁷⁵

Encoding

During encoding, information acquired by the senses is stored in working memory for a short period, before being transferred to long-term memory.

Attention to certain features of an event determines what will be encoded in the brain. If actions, objects or features are not noticed or attended to during an event, or if a person is distracted, then that information is not encoded into short-term memory and no memory trace is formed.¹⁷⁶

¹⁶⁷ Martin Conway, 'Episodic Memories' (2009) 47(11) *Neuropsychologia* 2305, 2306.

¹⁶⁸ Ibid 2305.

¹⁶⁹ Henry L Roediger, Franklin M Zaromb and Michael K Goode, 'A Typology of Memory Terms' in Randolph Menzel (eds), *Learning Theory and Behavior* (Elsevier, 2008) vol 1, 11.

¹⁷⁰ Martin Conway, 'Episodic Memories' (2009) 47(11) *Neuropsychologia* 2305.

¹⁷¹ Jeffrey R Binder and Rutvik H Desai, 'The Neurobiology of Semantic Memory' (2011) 15(11) *Trends in Cognitive Sciences* 527.

¹⁷² Martin Conway, 'Episodic Memories' (2009) 47(11) *Neuropsychologia* 2305; Robyn Fivush and Theodore E A Waters, 'Sociocultural and Functional Approaches to Autobiographical Memory' in Timothy J Perfect and D Stephen Lindsay (eds), *The Sage Handbook of Applied Memory* (Sage, 2014).

¹⁷³ Martin A Conway, 'Episodic Memories' (2009) 47(11) *Neuropsychologia* 2305, 2306.

¹⁷⁴ Henry L Roediger, Franklin M Zaromb and Michael K Goode, 'A Typology of Memory Terms' in Randolph Menzel (eds), *Learning Theory and Behavior* (Elsevier, 2008) vol 1, 20.

¹⁷⁵ Martin Conway, 'Memory and the Self' (2005) 53 *Journal of Memory and Language* 594.

¹⁷⁶ Henry L Roediger, Franklin M Zaromb and Michael K Goode, 'A Typology of Memory Terms' in Randolph Menzel (eds), *Learning Theory and Behavior* (Elsevier, 2008) vol 1, 17.

For repeated or familiar events, people generally develop a schema or ‘script’ for the core or gist features of that type of experience in their long-term memory. These memory templates spare a person from detailed encoding of redundant information.

Divided attention impairs encoding, while heightened attention at encoding strengthens children’s memory.¹⁷⁷ However, stress may interfere with the brain functions that control what to focus on. During fearful and stressful events, we have less control over what features receive attention, resulting in the encoding of fragmented sensations, and, ultimately, fragmented memories. In particular, fear impairs the encoding and recall of contextual elements and time sequences.¹⁷⁸

Controversy surrounds the historical assertion that an ‘inverted-U’ relationship exists between arousal and memory. This theory suggested that an optimal level of arousal was needed for some psychological tasks, and that a lack of, or excessive, psychological arousal or stress caused performance to diminish. Although this theory, also referred to as the Yerkes–Dodson Law, has been criticised¹⁷⁹ for lacking empirical support, it is often cited by a diverse range of memory researchers.¹⁸⁰ The influence of stress and trauma on encoding is discussed in more detail in Chapter 6.

How individuals understand an event at the time of encoding, and what they find significant about an event, will influence how the brain stores and organises the memory. This is important when considering what information a child will encode, because what is significant to an adult may not be significant to a child. The way information is organised and ‘the content of childhood memories recalled by children depend on their knowledge and understanding at the time of the experience’.¹⁸¹ The encoded features depend on the understanding and interpretation of an experience.¹⁸² As more conceptual information is learnt and organised in memory, a child’s ability to encode, interpret and recall events improves.

¹⁷⁷ See, Jodi A Quas and Heather C Lench, ‘Arousal at Encoding, Arousal at Retrieval, Interviewer Support, and Children’s Memory for a Mild Stressor’ (2007) 21(3) *Applied Cognitive Psychology* 289.

¹⁷⁸ James Hopper and David Lisak, ‘Why Rape and Trauma Survivors Have Fragmented and Incomplete Memories’, *Time* (online), 10 December 2014. Available at < <http://time.com/3625414/rape-trauma-brain-memory/> >

¹⁷⁹ Martin Corbett, ‘From Law to Folklore: Work Stress and the Yerkes-Dodson Law’ 30(6) *Journal of Managerial Psychology* 741.

¹⁸⁰ Yong Zhu et al, ‘Enhanced Memory for Both Threat and Neutral Information under Conditions of Intergroup Threat’ (2015) 6 *Frontiers in Psychology* 1; Kamil K Imbir, ‘Does Reading Words Differing in Arousal Load Influence Interference Control in Flanker Tasks?’ (2017) 36(1) *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues* 157.

¹⁸¹ The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 1, 14

¹⁸² *Ibid.*

Consolidation

The storing of memory is complex. During consolidation, a memory that is resting in a sensitive state (in which it is susceptible to change) or in short-term memory is converted into a long-term memory, free from disruption.¹⁸³ The conversion is influenced by an individual's understanding and knowledge at the time and the personal significance of the event.

Memories do not remain in a fixed long-term state forever. After memories have been retrieved, they can enter a sensitive state repeatedly before they are reconsolidated as long-term memories.¹⁸⁴ Less memorable details may be modified, weakened or strengthened before reconsolidation.¹⁸⁵ Older consolidated memories are more resistant to disruption than are younger memories.¹⁸⁶

Adults and children condense, modify and embellish information based on personal knowledge and expectations.¹⁸⁷ People shape their memories of past events into cohesive and coherent personal narratives. Reliable memory reports about the core actions and features of an event are often accompanied by minor inconsistencies. Normal adult autobiographical memory often includes self-contradictions about dates, times and the number of people present at an event. People are particularly poor at reconstructing the time frame of an event. As a result, common errors arise through transposing a memory from one time frame to another.¹⁸⁸ Specific questions about time frames may produce such contradictions.¹⁸⁹

Retrieval

The process of recall entails actively constructing information about the past that was encoded and can be remembered. Motivations, emotions and goals at the time of retrieval can cause people to ignore or override certain information.¹⁹⁰ When adults narrate a childhood experience, they use their current language abilities, insights and understanding to

¹⁸³ Cristina Alberini, 'The Role of Reconsolidation and the Dynamic Process of Long-Term Memory Formation and Storage' (2011) 5(12) *Frontiers in Behavioral Neuroscience* 1.

¹⁸⁴ Karim Nader and Einar Örn Einarsson, 'Memory Reconsolidation: an Update' (2010) 1191(1) *Annals of the New York Academy of Sciences* 27

¹⁸⁵ Cristina Alberini and Joseph E LeDoux, 'Memory Reconsolidation' (2013) 23(17) *Current Biology* 746.

¹⁸⁶ Cristina Alberini, 'The Role of Reconsolidation and the Dynamic Process of Long-Term Memory Formation and Storage' (2011) 5(12) *Frontiers in Behavioral Neuroscience* 1.

¹⁸⁷ Frederic C Bartlett, *Remembering: A Study in Experimental and Social Psychology* (Cambridge University Press, 1932).

¹⁸⁸ The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 2, 10–11.

¹⁸⁹ Christine Wells, Catriona M Morrison and Martin Conway, 'Adult Recollections of Childhood Memories: What Details Can Be Recalled?' (2014) 67(7) *The Quarterly Journal of Experimental Psychology* 1249.

¹⁹⁰ Rachel Zajac et al, 'Misconceptions about Childhood Sexual Abuse and Child Witnesses: Implications for Psychological Experts in the Courtroom' (2013) 21(5) *Memory* 608.

fill in knowledge gaps of information that was not encoded at the time of the event. This reconstructive process is a normal memory function.¹⁹¹

Reporting of child sexual abuse involves recalling one or more personal life events based on both autobiographical and event memory. A person's knowledge of their personal life is more stable and less error-prone than memory for one-off episodic events. In other words, according to the British Psychological Society Research Board: 'memories of the knowledge of a person's life are more likely to be accurate than memories for specific events'¹⁹² and stronger than episodic recall for event locations, times and dates. In response to questions about similar or repeated events, people typically remember and report the gist of what usually happened, rather than specific features of the individual events.¹⁹³ However, when studying autobiographical memories, this phenomenon was not found to be widespread, as this phenomenon is influenced by the presence of suggestion, level of consistency of the schema and the extent to which the memory is related to core or peripheral features of the event.¹⁹⁴

Patterns of neuronal activation detected by functional magnetic resonance imaging (fMRI) technology have revealed that different aspects of memory are processed in different regions of the brain.¹⁹⁵ An important finding is that retrieval success, memory precision and vividness are independent. In other words, a memory can be rated as vivid but lack precise details.¹⁹⁶ And just because an event is remarkable in some way does not mean it will be recalled in detail.

With the passing of time, all memories are subject to forgetting and interference.¹⁹⁷ Memory does not degrade in a linear fashion, but typically follows a forgetting curve, with an initial rapid decline after the event, followed by more stable continuous retention.¹⁹⁸ Rapid forgetting of contextual details takes place in the short term after an event. Thus, the

¹⁹¹ Mark L Howe 'Memory Development: Implications for Adults Recalling Childhood Experiences in the Courtroom' (2013) 14(12) *Nature Reviews Neuroscience* 869.

¹⁹² The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 2, 12.

¹⁹³ *Ibid*, 15.

¹⁹⁴ Misia Temler, *Autobiographical Memory Variability* (Doctoral dissertation, Macquarie University, 2016).

¹⁹⁵ Benjamin Straube 'An Overview of the Neuro-Cognitive Processes Involved in the Encoding, Consolidation, and Retrieval of True and False Memories' (2012) 8(35) *Behavioral and Brain Functions* 1.

¹⁹⁶ Franziska R Richter et al, 'Distinct Neural Mechanisms Underlie the Success, Precision, and Vividness of Episodic Memory' (2016) 5 *ELife Sciences* e18260.

¹⁹⁷ Martin Conway and Shazia Akhtar, 'Beliefs about Memory Survey' (2016 in press; copy on file with the authors).

¹⁹⁸ Recently, the original studies were replicated, confirming the original curve of forgetting. Jaap MJ Murre and Joeri Dros, 'Replication and Analysis of Ebbinghaus' Forgetting Curve' (2015) 10(7) *PLoS ONE* e0120644.

retention interval, or lapse in time, between an experience and retrieval of a memory of that experience affects the amount of information recalled.

Childhood amnesia is a robust phenomenon.¹⁹⁹ Autobiographical memories are relatively scarce for the period below the ages of five to seven years²⁰⁰, and tend to be fragmented.²⁰¹ Typically, adults recall four or five details about childhood events that occurred between the ages of four to eight.²⁰² Although there is some evidence of cultural differences²⁰³, this finding has been consistent.²⁰⁴ Compared to adults, children and adolescents report more memories of events that occurred before the age of three, and more frequently report their earliest memories as being before three-and-a-half years of age. This suggests that early autobiographical memories are fragile and typically lost over the course of normal development.²⁰⁵ Abuse has been found to be particularly memorable when it ended after the age of five and was more severe.²⁰⁶

4.2 Factors that preserve memory

Rehearsal in the form of thinking and talking about events can increase the durability of memory, while unrehearsed memories may become more difficult to retrieve over time.²⁰⁷ In children, rehearsal or reminiscence has been found to reinforce memory.²⁰⁸ Other mechanisms such as mental reinstatement of the context, multiple and varied cues (verbal and non-verbal), and repeated discussions also capitalise on reminiscence. Memories are

¹⁹⁹ David C Rubin, 'The Distribution of Early Childhood Memories' (2000) 8(4) *Memory* 265, 268. This finding was based on studies of more than 11,000 autobiographical memories using four different research methods to collect the data from samples in the US.

²⁰⁰ Patricia J Bauer, 'Development of Episodic and Autobiographical Memory: The Importance of Remembering Forgetting' (2015) 38 *Developmental Review* 146.

²⁰¹ Mark L Howe 'Memory Development: Implications for Adults Recalling Childhood Experiences in the Courtroom' (2013) 14(12) *Nature Reviews Neuroscience* 869.

²⁰² Christine Wells, Catriona M Morrison and Martin A Conway, 'Adult Recollections of Childhood Memories: What Details can be Recalled?' (2014) 67(7) *The Quarterly Journal of Experimental Psychology* 1249.

²⁰³ Qi Wang, 'Infantile Amnesia Reconsidered: A Cross-cultural Analysis' (2003) 11(1) *Memory* 65.

²⁰⁴ Tiffany A West and Patricia J Bauer, 'Assumptions of Infantile Amnesia: Are There Differences between Early and Later Memories?' (1999) 7(3) *Memory* 257; Patricia J Bauer and Marina Larkina, 'Childhood Amnesia in the Making: Different Distributions of Autobiographical Memories in Children and Adults' (2014) 143(2) *Journal of Experimental Psychology: General* 597.

²⁰⁵ Karen Tustin and Harlene Hayne, 'Defining the Boundary: Age-related Changes in Childhood Amnesia' (2010) 46(5) *Developmental Psychology* 1049.

²⁰⁶ Gail S Goodman et al, 'Predictors of Accurate and Inaccurate Memories of Traumatic Events Experienced in Childhood' (1994) 3(3-4) *Consciousness and Cognition* 269.

²⁰⁷ Heidi M Gordon, *The Influence of Directed Forgetting on Autobiographical Memory: The Role of Development, Individual Differences, and Repeated Interviews* (Dissertation, Simon Fraser University, 2009).

²⁰⁸ Karen Salmon and Elaine Reese, 'Talking (or Not Talking) about the Past: The Influence of Parent-Child Conversation about Negative Experiences on Children's Memories' (2015) 29(6) *Applied Cognitive Psychology* 791-801; Mark L Howe, 'Memory Development: Implications for Adults Recalling Childhood Experiences in the Courtroom' (2013) 14(12) *Nature Reviews* 869.

sensitive to retrieval cues and are not recalled the same way every time. Repeatedly recalling an event generally increases the memory quantity and the accuracy of the details reported. However, during the rehearsal or reminiscence process, memories can be susceptible to changes as 'each instance of recall also offers an opportunity for distortion and error to be assimilated [in]to a memory'.²⁰⁹ For example, information from an external and credible source can influence even confidently held memories.²¹⁰

The repetition of events strengthens memory. It is easier to recall events that are familiar, well learned and rehearsed. This is because they are repeated, which helps to lay down a more robust 'trace' in long-term memory.²¹¹ As is discussed in more detail in Chapter 7, identifying minor differences and precise temporal information about one instance among many repeated events is difficult for both adults and children.

Repeatedly recalling the same information tends to increase the amount remembered with each attempt, an effect known as hypermnesia.²¹² Although first observed in laboratory studies using wordlists, this effect was also shown when adults recalled autobiographical memories.²¹³

The subjective significance of events can make them more distinctive and enduring. For example, people who were detained in concentration camps were found to have enduring and accurate autobiographical memories of their experience even after 40 years.²¹⁴ Autobiographical memory can be enhanced by recording events (for example, in a diary) on the same day they occur.²¹⁵

²⁰⁹ The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 2, 16.

²¹⁰ Ruth Horry et al, 'Memory Conformity for Confidently Recognized Items: The Power of Social Influence on Memory Reports' (2012) 48(3) *Journal of Experimental Social Psychology* 783.

²¹¹ Wayne Wickelgren, 'Trace Resistance and the Decay of Long-term Memory' (1972) 9(4) *Journal of Mathematical Psychology* 418.

²¹² David G Payne, 'Hypermnesia and Reminiscence in Recall: A Historical and Empirical Review' (1987) 101(1) *Psychological Bulletin* 5.

²¹³ Susan Bluck, Linda J Levine and Tracy M Lauhere, 'Autobiographical Remembering and Hypermnesia: A Comparison of Older and Younger Adults' (1999) 14(4) *Psychology and Aging* 671.

²¹⁴ Australian Law Reform Commission, NSW Law Reform Commission and Victorian Law Reform Commission (2006) *Uniform Evidence Law Report (ALRC Report 102; NSWLRC Report 112; VLRC Final Report)*, Australian Law Reform Commission: Sydney, note 26, [8.100]; The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 2, 10.

²¹⁵ Agnes Szollosi et al, 'A Diary after Dinner: How the Time of Event Recording Influences Later Accessibility of Diary Events' (2015) 68(11) *Experimental Psychology* 2119.

Vividness, or the presence of emotion associated with events, can make memories more durable.²¹⁶ Some studies found that it was common to recall only three to five features of both negative and positive experiences. In studies of memory for negative experiences, participants remembered highly relevant, core details of the experience; memory for minor details was also found to decay more rapidly than memory for core details.²¹⁷

4.3 Autobiographical memory

Research on children's memory began approximately 100 years ago, but only in the last few decades has more systematic study been undertaken. Recent research has broadened the area of memory by focusing on recognition, retrieval processes and cross-cultural influence.²¹⁸ Research about the development of autobiographical memory has focused on the role adults play in supporting and structuring the memory of children (a process known as scaffolding). Ideal scaffolding acknowledges and builds on the child's contribution, while prompting them to remember key features about the 'who, what, when, why and how' of past events. When parents use ideal scaffolding in discussions with their child, the child remembers more in the discussion, as well as in subsequent interviews that are conducted without their parents.²¹⁹

The ability to report abusive events or experiences depends on cognitive, developmental and social factors at the time of both encoding and retrieval. For example, children raised in more dysfunctional families have fewer specific memories.²²⁰ The severity of the abusive experiences impacts memory accuracy. A longitudinal study revealed that cognitively and socially matured adolescents and young adults who had experienced more severe abuse

²¹⁶ Alisha C Holland and Elizabeth A Kensinger, 'Emotion and Autobiographical Memory' (2010) 7(1) *Physics of Life Reviews* 88.

²¹⁷ Mark L Howe, 'Memory Development: Implications for Adults Recalling Childhood Experiences in the Courtroom' (2013) 14(12) *Nature Reviews* 869. In one study, 124 members of the general public wrote down their earliest childhood memories of two positive events and two negative events. The following episodic features were not remembered well in response to both positive and negative events: clothes worn (only recalled 10 per cent of the time), time of event (11 per cent), duration of event (35 per cent), age of the participant at the time (50 per cent), weather conditions (55 per cent) and what the participant thought at the time (61 per cent). The event features that were best remembered included the nature of the activity (88 per cent), the location (85 per cent) and who was present (76 per cent). Christine Wells, Catriona M Morrison and Martin Conway, 'Adult Recollections of Childhood Memories: What Details Can Be Recalled?' (2014) 67(7) *The Quarterly Journal of Experimental Psychology* 1249.

²¹⁸ Peter A Ornstein, 'Introduction: The Study of Children's Memory' in Peter A Ornstein (ed), *Memory Development in Children* (Psychology Press, 2014) 1.

²¹⁹ Robyn Fivush, 'The Development of Autobiographical Memory' (2011) 62 *Annual Review of Psychology* 559.

²²⁰ Lina Shacter, Steven Weiner and Michael R Nash, 'Family Functioning Moderating the Effects of Childhood Sexual Abuse on Memory Specificity' (2009) 18(8) *Journal of Aggression, Maltreatment & Trauma* 859.

demonstrated greater memory accuracy than their counterparts who experienced milder forms of abuse.²²¹

*Memories in infancy*²²²

Generally, the underlying memory process in infancy is similar to that in older childhood.²²³ Younger children may need longer to encode than older children and may forget things more quickly. They may also store memories as images or movements, and express these memories during retrieval in a manner that more closely matches the way they encoded the experience.²²⁴ This is in line with the principle of encoding specificity, which takes into account the fact that contextual information affects memory retrieval.²²⁵

Infants can remember events, especially if they receive periodic non-verbal reminders, but they may not report the experience using words.²²⁶ Children as young as two can provide behavioural re-enactments of one-off events, even when they are unable to provide a verbal account of the experience.²²⁷ Sexualised behaviour could reflect a non-verbal memory of sexual abuse.²²⁸

*Memories of very young and pre-school age children*²²⁹

Young children encode fewer episodic details and process conceptual information more slowly than older children. Episodic memory is developed in childhood, with the ability to link events to a context forming the foundation for autobiographical memory. At the age of two, children can provide accounts of recent events in their lives, particularly when supported by adults who can structure their narratives. From then onwards, children's autobiographical narrative and independent memory strategy skills develop rapidly. After the age of three to

²²¹ Jodi A Quas et al, 'Long-Term Autobiographical Memory for Legal Involvement: Individual and Sociocontextual Predictors' (2010) 25(4) *Cognitive Development* 394.

²²² Infants are children below the age of one year.

²²³ Carolyn Rovee-Collier, 'Some Parts of Memory Still Developing Deep into Childhood' (1999) 8 *Current Directions in Psychological Science* 80.

²²⁴ Harlene Hayne, 'Infant Memory Development' (2004) 24(1) *Developmental Review* 33.

²²⁵ Endel Tulving and Donald M Thomson, 'Encoding Specificity and Retrieval Processes in Episodic Memory' (1973) 80(5) *Psychological Review* 352.

²²⁶ Harlene Hayne, Damian Scarf and Kana Imuta, 'Childhood Memories' in James D Wright (ed), *International Encyclopedia of the Social and Behavioural Sciences* (Elsevier, 2nd revised ed, 2015) vol. 3, 465–470.

²²⁷ Gabrielle Simcock and Harlene Hayne, 'Age-related Changes in Verbal and Non-Verbal Memory through Early Childhood' (2003) 39(5) *Developmental Psychology* 805.

²²⁸ Brett Hayes, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 16, lines 2–10.

²²⁹ Children aged one to three. In most states and territories in Australia, pre-schoolers are four to five years old.

four, memories of events increase and form the basis of autobiographical memories.²³⁰ By the age of six to seven, children can provide complete accounts of personal events without adult narrative structuring.²³¹

If the onset of abuse occurs at an early age in childhood, then the encoding of memories of child sexual abuse may be disrupted because the ability to encode develops with age. Memories that were encoded before a child acquired vocabulary relevant to the event may, once the vocabulary has been learnt, be reported verbally.²³² However, in some studies events experienced in a child's preverbal phase were not translated to language once they developed verbal skills.²³³

Rapid rates of forgetting are especially prevalent among children aged under six. A comparison of rates of forgetting for autobiographical memories showed that compared to adults, children typically forgot more events or experiences²³⁴, perhaps because they were forgotten before they were consolidated into long-term memories.²³⁵

The ability to describe events in terms of time – hours, days, weeks, months, years or seasons – may facilitate the reconstruction of personal past events and, ultimately, the formation of autobiographical memories.²³⁶ When children aged four, six and eight were questioned about temporal aspects of unique events over a four-month period, age-related improvements in the accuracy of time estimates on these conventional scales emerged. On average, children aged four to five were able to arrange a day's events in a temporal sequence, whereas

²³⁰ Patricia J Bauer and Marina Larkina, 'The Onset of Childhood Amnesia in Childhood: A Prospective Investigation of the Course and Determinants of Forgetting of Early-life Events' (2013) 22(8) *Memory* 907.

²³¹ Katherine Nelson and Robyn Fivush, 'The Emergence of Autobiographical Memory: A Social Cultural Developmental Theory'. (2004) 111(2) *Psychological Review* 486

²³² Gwynn Morris and Lynne Baker-Ward, 'Fragile but Real: Children's Capacity to Use Newly Acquired Words to Convey Verbal Memories' (2007) 78(2) *Child Development* 448.

²³³ Gabrielle Simcock and Harlene Hayne, 'Breaking the Barrier? Children Fail to Translate Their Preverbal Memories into Language' (2002) 13(3) *Psychological Science* 225

²³⁴ Patricia J Bauer and Marina Larkina, 'Predicting Remembering and Forgetting of Autobiographical Memories in Children and Adults: A 4-Year Prospective Study' (2015) 24(10) *Memory* 1345. Compared to nine-year-olds, rates of forgetting events were four times greater among children aged four and twice as great among six-year-olds.

²³⁵ Children aged three talked with their parents about six different events which took place recently and more than six months ago. Children were then interviewed at the age of seven to nine about the events they had reported at the age of three. The proportion of events remembered decreased significantly with age; Dana van Abbema and Patricia Bauer, 'Autobiographical Memory in Middle Childhood: Recollections of the Recent and Distant Past' (2005) 13(8) *Memory* 829; Patricia J Bauer and Marina Larkina, 'The Onset of Childhood Amnesia in Childhood: A Prospective Investigation of the Course and Determinants of Forgetting of Early-life Events' (2013) 22(8) *Memory* 907.

²³⁶ Thanujeni Pathman et al, 'Young Children's Memory for the Times of Personal Past Events' (2013) 14(1) *Journal of Cognition and Development* 120.

children aged six to seven could correctly sequence seasonal events.²³⁷ Adults are more likely to provide the precise time frame if an event happened in the last 100 days than if it happened more than 100 days ago. Additionally, adults place recent events further back in time, and place remote events forward in time.²³⁸

*Memories of primary school age children*²³⁹

While researchers claim that children in middle childhood testify in court more frequently than younger children, most research has focused on early childhood memory, with comparatively fewer studies on children's memory in middle childhood.²⁴⁰

In one study, children aged seven to eight were able to list days of the week and months of the year.²⁴¹ Compared to younger children, they were also better able to estimate when personally experienced events took place using conventional time scales.²⁴² When children aged four to 10 provide a free-narrative account, they may spontaneously produce temporal information. These abilities, which are discussed in more detail in Chapter 7, are important in terms of being able to link events, especially repeated events, to a specific point in time.

Differences have been found in the working memory performance of children aged seven to nine. Working memory stores information and simultaneously uses that information for complex cognitive tasks. One study found no age differences in relation to children's storage capacity in complex tasks; however, the older children typically performed better and faster than the seven-year-olds.²⁴³

Older children's accounts of sexual abuse include more perceptual and contextual information, actions and descriptions of internal states (for example, emotions or thoughts) than those of younger children.²⁴⁴

²³⁷ Judith Hudson and Estelle Mayhem, 'The Development of Memory for Recurring Events' in Mary Courage and Nelson Cowan (eds), *The Development of Memory in Infancy and Childhood* (Psychology Press, 2008) 69–91.

²³⁸ Steve MJ Janssen, Antonio G Chessa and Jaap M J Murre, 'Memory for Time: How People Date Events' (2006) 34(1) *Memory & Cognition* 138.

²³⁹ Children aged six to 11.

²⁴⁰ Mark L Howe 'Memory Development: Implications for Adults Recalling Childhood Experiences in the Courtroom' (2013) 14(12) *Nature Reviews Neuroscience* 869; Deryn Strange and Harlene Hayne, 'The Devil is in the Detail: Children's Recollection of Details about their Prior Experiences' (2013) 21(4) *Memory* 431.

²⁴¹ Judith Hudson and Estelle Mayhem, 'The Development of Memory for Recurring Events' in Mary Courage and Nelson Cowan (eds), *The Development of Memory in Infancy and Childhood* (Psychology Press, 2008) 69–91.

²⁴² Thanujeni Pathman et al, 'Young Children's Memory for the Times of Personal Past Events' (2013) 14(1) *Journal of Cognition and Development* 120.

²⁴³ Juliet A Conlin, Susan E Gathercole and John W Adams, 'Children's Working Memory: Investigating Performance Limitations in Complex Span Tasks' (2005) 90(4) *Journal of Experimental Child Psychology* 303.

²⁴⁴ Kim P Roberts and Michael E Lamb, 'Reality-Monitoring Characteristics in Confirmed and Doubtful Allegations of Child Sexual Abuse' (2010) 24(8) *Applied Cognitive Psychology* 1049.

*Memories of high school age children*²⁴⁵

Memory abilities continue to develop into adolescence. Adolescents provide more information than children²⁴⁶ about events they have observed, but less information than adults.²⁴⁷

Adolescence marks a transition to a more adult-like organisation of autobiographical memories. The ability to link autobiographical memories and arrange them into a chronological story with 'chapters' begins in early adolescence and continues to develop into later adolescence.²⁴⁸

Parents continue to influence how their adolescents remember during discussions about past events. However, as adolescents become more competent at independent remembering, scaffolding from parents tends to shift from supporting specific details about past events to helping them to reflect on the meaning of events.²⁴⁹

Only a few studies have focused on children's memories of abusive events. Maltreated children (victims of physical and sexual abuse, as well as children suspected of having suffered abuse but there was no substantiating evidence) between the ages of three and 16 were interviewed about an invasive physical examination, which was part of the inpatient abuse-assessment program. The younger children provided fewer details than their older counterparts.²⁵⁰

4.4 Memory development and suggestibility

A common misconception is that children, and especially younger children, are unreliable witnesses because they are highly susceptible to suggestion and false reporting.²⁵¹ Many studies of children's suggestibility have not involved memory for real events children participated in. In some studies in which children's participation in a real-world event was the

²⁴⁵ Children aged 11–17.

²⁴⁶ Fiona Jack, Jessica Leov & Rachel Zajac, 'Age-Related Differences in the Free-Recall Accounts of Child, Adolescent, and Adult Witnesses' (2014) 28(1) *Applied Cognitive Psychology* 30.

²⁴⁷ Karen A Willoughby et al, 'Episodic and Semantic Autobiographical Memory and Everyday Memory during Late Childhood and Early Adolescence' (2012) 3(53) *Frontiers in Psychology* 1.

²⁴⁸ Yan Chen, Helena M McAnally and Elaine Reese, 'Development in the Organization of Episodic Memories in Middle Childhood and Adolescence' (2013) 7(84) *Frontiers in Behavioral Neuroscience* 1.

²⁴⁹ Tilmann Habermas, Alexa Negele, and Fernanda Brenneisen Mayer, "'Honey, You're Jumping About"—Mothers' Scaffolding of their Children's and Adolescents' Life Narration' (2010) 25(4) *Cognitive* 339.

²⁵⁰ Mitchell L Eisen et al, 'Memory and Suggestibility in Maltreated Children: Age, Stress Arousal, Dissociation, and Psychopathology' (2002) 83(3) *Journal of Experimental Child Psychology* 167.

²⁵¹ Stephen J Ceci et al, 'Unwarranted Assumptions about Children's Testimonial Accuracy' (2007) 3 *Annual Review of Clinical Psychology* 311.

basis for memory, no age differences emerged in the number of memory errors reported.²⁵² However, other studies found age differences in children's suggestibility.²⁵³

More recently, leading researchers on child suggestibility have endorsed the contemporary view that children's event memory is not significantly related to suggestibility.²⁵⁴ They have advised caution in associating the demographic characteristics of witnesses or victims, such as their age or gender, with suggestibility.²⁵⁵

In the past decade, a number of studies have confirmed what are called 'developmental reversal effects', showing that older adolescents and adults are more susceptible to erroneous or false memories than children. These effects are robust and have been demonstrated extensively with respect to spontaneous false memories using the DRM paradigm²⁵⁶. They have also been shown in forensically relevant studies using other paradigms, including the suggestion-induced misinformation effects²⁵⁷, eyewitness identification, the group conformity paradigm²⁵⁸, the rumour paradigm, narrative memory and memories of emotionally arousing events.²⁵⁹ Compared to adolescents and young adults, young children have been found to produce fewer false memory reports²⁶⁰, particularly for

²⁵² Leslie Rudy and Gail Goodman, 'Effects of Participation on Children's Reports: Implications for Children's Testimony' (1991) 27(4) *Developmental Psychology* 527. In this study, memories of children aged four were compared with those of children aged seven.

²⁵³ Deirdre A Brown, Charlie N Lewis and Michael E Lamb, 'Preserving the Past: An Early Interview Improves Delayed Event Memory in Children With Intellectual Disabilities' (2015) 86(4) *Child Development* 1031; Mitchell L Eisen et al, 'Memory and Suggestibility in Maltreated Children: Age, Stress Arousal, Dissociation, and Psychopathology' (2002) 83(3) *Journal of Experimental Child Psychology* 167; Pedro M Paz-Alonso and Gail S Goodman, 'Developmental Differences across Middle Childhood in Memory and Suggestibility for Negative and Positive Events' (2016) 34 *Behavioral Sciences & the Law* 30.

²⁵⁴ Amelia C Hritz et al, 'Children's Suggestibility Research: Things to Know before Interviewing a Child' (2015) 25(1) *Anuario de Psicología Jurídica* 3.

²⁵⁵ Ibid.

²⁵⁶ Charles J Brainerd, Valerie F Reyna and Stephen J Ceci, 'Developmental Reversals in False Memory: A Review of Data and Theory' (2008) 134(3) *Psychological Bulletin* 343; Charles J Brainerd, Valerie F Reyna and Eric Zember, 'Theoretical and Forensic Implications of Developmental Studies of the DRM Illusion' (2011) 39(3) *Memory and Cognition* 365; Nathalie Brackmann et al, 'When Children are the Least Vulnerable to False Memories: A True Report or a Case of Autosuggestion?' (2016) 62(s1) *Psychiatry and Behavioural Science* S271; Charles J Brainerd and Valerie F Reyna, 'Reliability of Children's Testimony in the Era of Developmental Reversals' (2012) 32(3) *Developmental Review* 224. The latter review of 51 studies disclosed that in 88 per cent of the studies, susceptibility to memory errors increased as the age of the participants increased.

²⁵⁷ Henry Otgaar et al, 'Eliminating Age Differences in Children's and Adults' Suggestibility and Memory Conformity Effects' (2017) 53(5) *Developmental Psychology* 962.

²⁵⁸ Amelia C Hritz et al, 'Children's Suggestibility Research: Things to Know before Interviewing a Child' (2015) 25(1) *Anuario de Psicología Jurídica* 3; In-Kyeong Kim, Enoch S Kwon and Stephen J Ceci, 'Developmental Reversals in Report Conformity: Psycho-legal Implications' (2017) 31(2) *Applied Cognitive Psychology* 128.

²⁵⁹ Charles J Brainerd, 'Developmental Reversals in False Memory: A New Look at the Reliability of Children's Evidence' (2013) 22(5) *Current Directions in Psychological Science* 335.

²⁶⁰ Children of six, eight and 11 participated in a study in which they were asked to provide short narratives of objects and events in everyday life. Higher numbers of spontaneous false memory reports were found with

negative events.²⁶¹ As a consequence, the view that children are more suggestible than adults is regarded by many contemporary memory researchers as ‘outdated’.²⁶²

Increasing susceptibility to false memory has been linked to improvements in gist memory and semantic knowledge.²⁶³ As adults and older children tend to rely more on semantic knowledge, gist memory or scripts when remembering an event, they often make spontaneous inferences ‘to join the dots’.²⁶⁴ Young children may make a similar spontaneous error, but they will only ‘join the dots’ if the schema related to the event they are remembering is apparent to them.²⁶⁵ Relying on gist memory as opposed to episodic features is believed to increase spontaneous false memory errors.²⁶⁶ In other words, adults rely on their inferences about what happened, whereas children who are still developing schemas and gist memory rely more on recall of what actually happened. Gist-based false memories increase with age.²⁶⁷

Susceptibility to misinformation

Susceptibility to misinformation is thought to either decrease between early childhood and later childhood or to remain stable across development.²⁶⁸ As such, children do not appear to be more or less susceptible to misinformation than adults. In addition, as noted above, some misinformation studies have reported reverse developmental effects. However, the

the increase in age; Charles J Brainerd and Ambrocio H Mojardin, ‘Children’s and Adults’ Spontaneous False Memories: Long-Term Persistence and Mere-Testing Effects’ (1998) 69(5) *Child Development* 1361.

²⁶¹ Charles J. Brainerd and Valerie F Reyna, ‘Explaining Developmental Reversals in False Memory’ (2007) 18(5) *Psychological Science* 442.

²⁶² Nathalie Brackmann et al, ‘When Children are the Least Vulnerable to False Memories: A True Report or a Case of Autosuggestion?’ (2016) 62(s1) *Psychiatry and Behavioural Science* S271, S273.

²⁶³ Charles J Brainerd, Valerie F Reyna and T J Forrest, ‘Are Young Children Susceptible to the False-Memory Illusion?’ (2002) 73(5) *Child Development* 1363.

²⁶⁴ Brett Hayes, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 18, lines 28–30; Ellen R Swannell and Stephen A Dewhurst, ‘Effects of Presentation Format and List Length on Children’s False Memories’ (2013) 14(2) *Journal of Cognition and Development* 332; Henry Otgaar et al, ‘The Production of Spontaneous False Memories Across Childhood’ (2014) 121 *Journal of Experimental Child Psychology* 28; Katrina Sugrue and Harlene Hayne, ‘False Memories Produced by Children and Adults in the DRM Paradigm’ (2006) 20 *Applied Cognitive Psychology* 625

²⁶⁵ Ellen R Swannell and Stephen A Dewhurst, ‘Effects of Presentation Format and List Length on Children’s False Memories’ (2013) 14(2) *Journal of Cognition and Development* 332.

²⁶⁶ Carlos F A Gomes and Charles J Brainerd, ‘Dual Processes in the Development of Reasoning: The Memory Side of the Story’ in Pierre Barrouillet and Caroline Gauffroy (eds), *The Development of Thinking and Reasoning* (Psychology Press, 2013).

²⁶⁷ In-Kyeong Kim, Enoch S Kwon and Stephen J Ceci, ‘Developmental Reversals in Report Conformity: Psycho-Legal Implications’ (2017) 31(2) *Applied Cognitive Psychology* 128.

²⁶⁸ Brett Hayes, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 18, lines 7–9.

younger the child, the more support (in the form of adult-provided cues) is required to produce verbal details about experiences. Thus, there is a tension between providing adequate support for a child to help them provide a coherent account of an experience and avoiding the introduction of false memories into the child's narrative through inappropriate leading questions or assumptions about the child's experience.²⁶⁹

The focus in recent research has been on ways in which police officers and legal professionals can maximise the accuracy of children's recall while minimising the risks of errors and false memories. Research on investigative interviewing strategies or procedures to facilitate memory have received extensive research attention and refinement, as is discussed in Chapter 8.²⁷⁰

Key points on the nature of human memory

- Three cognitive processes affect memory reporting: encoding, consolidation and retrieval (recall).
- No memory is an exact replica of an experience or event because memory is dynamic and reconstructive. People shape their memories of past events into cohesive and coherent personal narratives. Memory often includes self-contradictions about dates, times, and the number of items or people present. People are especially poor at reconstructing the time frame of an event.
- Generally, the underlying memory processes of infants²⁷¹ and young children²⁷² are similar to those of older children²⁷³ and adults.²⁷⁴ There are some differences in the way infants and pre-schoolers²⁷⁵ encode, consolidate and retrieve memories, and in the quantity of their memory capacity compared to older children and adults. If the onset of abuse is early in childhood, encoding of memories of child sexual abuse may be disrupted because the ability to encode develops with age. Very young children²⁷⁶ are more likely than adults to encode and store information as non-verbal images or movements because they may not have developed verbal skills.

²⁶⁹ Gail S Goodman, Olivia Jones and Cynthia McLeod, 'Is There Consensus about Children's Memory and Suggestibility?' (2017) 32(6) *Journal of Interpersonal Violence* 926; Gail S Goodman et al, 'Children's Eyewitness Memory: The Influence of Cognitive and Socio-Emotional Factors' (2014) 19(2) *Roger Williams University Law Review* 476.

²⁷⁰ Charles J Brainerd and Valerie F Reyna, 'Explaining Developmental Reversals in False Memory' (2007) 18(5) *Psychological Science* 442.

²⁷¹ Infants are children younger than one.

²⁷² Children aged 1–10.

²⁷³ Children aged 11–17.

²⁷⁴ Adults are persons 18 years and older.

²⁷⁵ In most states and territories in Australia, pre-schoolers are aged 4–5.

²⁷⁶ Children aged 1–3.

- Consolidation is the conversion of a short-term memory trace into long-term memory, taking into account an individual's understanding and knowledge at the time and the personal significance of the event. When a memory is retrieved, it is in a sensitive state during which less memorable details may be modified, weakened or strengthened before reconsolidation.
- Memories do not remain in a fixed long-term state. Many aspects attended to during encoding are forgotten soon after an event if they are not consolidated into long-term memory. Shortly after an event, individuals initially experience a rapid decline in memory for that event followed by more stable retention of memory over time. The core features and meaning of an event are most likely to be remembered, while other information is not as well preserved.
- Thinking and talking about events, also known as rehearsing, generally increases the durability of memory; unrehearsed memories may become more difficult to retrieve. Memories are sensitive to retrieval cues and are not recalled the same way every time. Memories are usually triggered by a range of salient retrieval cues that are personal. Some obvious examples are a particular taste or touch, returning to the location of an event, reading about or seeing a similar event in the media or on television, becoming a parent, etc. Thus, when very young children retrieve memories, they typically express them in a form that closely matches the way they encoded the event (including non-verbally).
- Reporting of child sexual abuse involves recalling one or a series of personal life events, based on both autobiographical and event memory. Memory capacity to convey a coherent autobiographical narrative about child sexual abuse varies based on the strength of parental attachment, developmental maturation and cultural background, coping style and the presence of psychopathology.
- Most adults' earliest childhood memories relate to events that occurred between the ages of five and seven, although young children retain memories of earlier events for a period. Regardless of the age at the time of encoding, memories retrieved by adolescents²⁷⁷ generally include more specific information about events than those of younger children, but adolescents, in turn, tend to recall less detail than adults.
- Young children take less time than adults to encode events. Children under pre-school age encode fewer episodic details and process conceptual information more slowly than older children. During the primary school years, as more conceptual information is learned and organised in memory, children's ability to encode, interpret and recall events improves.
- Susceptibility to misinformation varies according to social, familial and cognitive factors. After encoding, young children, who rely on their episodic memories, are

²⁷⁷ Adolescents are aged 12–17.

more resistant than adolescents and adults to misinformation, social conformity pressures and spontaneous reports of false memories. Adolescents and adults rely more on general world knowledge to fill in memory gaps, while young children tend to rely on their episodic memories.

Chapter 5

Effects of delay on memory

Children can remember a remarkable amount of information in response to free-recall questions, even after long delays. The quantity of information recalled decreases over time. Rapid forgetting of details generally occurs soon after an event and stabilises over time. Children remember core information about distinctive events better than minor details. Generally, children make few errors, and errors that occur after long delays are often intrusion errors. Young children tend to forget more rapidly than older children. Abuse at a very young age may be acknowledged only later due to children's lack of knowledge or awareness at the time of the event that the offender's behaviours was inappropriate. Older children may have memories of abuse but may be more reluctant to report abuse due to social taboos. As the time between the police interview and the trial increases, children may experience external and internal pressures to retract their allegations or may be exposed to misinformation. Adults with memories of child sexual abuse may be reluctant to report them due to embarrassment or guilt. Reconstructive processes upon retrieval and reconsolidation can modify, strengthen or weaken memories. Discontinuous memories of sexual abuse revealed during therapy, using guided imagery, hypnosis and other techniques, have a high propensity to be false, whereas spontaneously recovered memories are associated with forgetting.

In most cases of child sexual abuse, a considerable period of time passes between (1) the abusive events and disclosure; (2) disclosure and the forensic interview; and (3) the interview and the trial. An analysis of New South Wales cases of child sexual abuse between 1995 and 2014 revealed that roughly half of the incidents were reported within three months of the offence. Reporting was delayed for periods ranging from three months to 20 years in the remaining cases.²⁷⁸ A three-month delay may be considered short in legal procedures, but in psychological terms such a delay may have a significant impact on the memory of the victim.²⁷⁹ A collection of studies in which adults were retrospectively questioned about sexual abuse experienced during childhood showed that only one-third had reported the abuse during childhood; two-thirds never disclosed the abuse to anyone in childhood.²⁸⁰ This

²⁷⁸ Judy Cashmore et al, *The Impact of Delayed Reporting of the Prosecution and Outcomes of Child Sexual Abuse Cases* (Report for the Royal Commission into Institutional Responses to Child Sexual Abuse, August 2016) 72.

²⁷⁹ As discussed below in section 5.2, most rapid forgetting of details occurs soon after the event, after up to one month of delay: Carolyn H Jones and Margaret-Ellen Pipe, 'How Quickly do Children Forget Events? A Systematic Study of Children's Event Reports as a Function of Delay' (2002) 16(7) *Applied Cognitive Psychology* 755.

²⁸⁰ Kamala London et al, 'Disclosure of Child Sexual Abuse: What Does the Research Tell Us about the Ways That Children Tell?' (2005) 11(1) *Psychology, Public Policy, and Law* 194, 198; Kamala London et al, 'Review of the

chapter focuses on the effects of delay on memory. First, we examine the effects of delay on children's memories, then the effects of delay on adults' memories of child sexual abuse.

5.1 Delay between the time of abuse and reporting

Several factors can lead to a delay between the experience of abuse and reporting it to the authorities. Some factors relate to the memory encoding process described in Chapter 4. This section discusses factors influencing the encoding of sexually abusive events, such as the child's age at the time of abuse; their knowledge of the nature of the event; the offenders' grooming process²⁸¹; and the presence of stress or trauma.

Knowledge and understanding of sexually abusive events during childhood

If the abuse took place during the infantile or childhood amnesic period, children's encoding capacity may not yet have developed sufficiently to lay down a memory trace. For encoding to occur, children must pay attention to the abusive conduct.²⁸² For instance, when a child is abused during sleep, the offender's behaviour is not registered or encoded.

Children's knowledge at the time of the abusive event also influences encoding. A lack of understanding about the perpetrator's behaviour and failure to interpret it as abusive or sexual may influence the way the event is encoded and remembered.²⁸³ For example, a female child abused when aged under four reported a pressing weight on her chest, which was caused by the weight of the perpetrator leaning on her. Adults did not recognise her account as a description of abuse until she was in early secondary school²⁸⁴ and was able to convey this experience so that others understood.²⁸⁵

The encoding of events as sexually abusive experiences may be influenced by the perpetrator's modus operandi or the circumstances in which the abuse occurred. For instance, abusing a child in the course of daily care or using grooming processes that involve appropriate touching intermingled with inappropriate touching may obscure and hide the abuse. Common grooming methods used by institutional and non-institutional child sex offenders include a variety of strategies, some of which are aggressive, while others are

Contemporary Literature on how Children Report Sexual Abuse to Others: Findings, Methodological Issues, and Implications for Forensic Interviewers' (2008(1)) 16 *Memory* 29.

²⁸¹ Deborah A Connolly and J Don Read, 'Remembering Historical Child Sexual Abuse' (2003) 47 *Criminal Law Quarterly* 438.

²⁸² Christiane Sanderson, *Counselling Adult Survivors of Child Sexual Abuse* (Jessica Kingsley Publishers, 2006), 209.

²⁸³ *Stogner v. California*, 539 U.S. 607 (2003).

²⁸⁴ Children in secondary school are aged 11–18 in New South Wales.

²⁸⁵ Katie Seidler, Transcript of Proceedings, *Public Roundtable Criminal Justice Memory of Childhood Sexual Abuse and The Law* (Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, March 31 2017), 16, lines 23–41.

non-aggressive and have been classified as ‘intimate’ and ‘coercive or manipulative’.²⁸⁶ The ambiguity of ‘sanctioned’ touching that occurs, for example, under the guise of teaching a child to play a computer game, a musical instrument or a sports game is a key feature exploited by predatory sex offenders.²⁸⁷ The offender may have normalised these behaviours, and as a result of their misrepresentations, children do not recognise the behaviours as abusive or sexual at the time, or they appear less salient; thus, they may attract less attention and not be encoded in memory.

For these reasons, incidents of sexual touching may not be remembered. Abusive events also may not stand out as distinctive or personally salient if a child did not experience pain at the time. To assess whether the experience of pain or genital touching facilitates the distinctiveness and memory of an event, researchers conducted an analogue study in which children aged five to seven underwent either an invasive physical examination involving genital touch or no genital touch, and were interviewed one to five weeks later. Younger children who experienced genital touch reported more details than older children in the same experimental group.²⁸⁸ Older children, through their greater general knowledge, cognitive abilities and past experiences, were more aware of stereotypes and social taboos that discouraged them from mentioning genital touching. Regardless of age and the delay between the examination and questioning, children reported more details about the core actions than peripheral details.²⁸⁹ An important finding was that children who did not experience the examination involving genital touching did not report any genital touching in response to free-recall questions.

5.2 Delay between abuse and the investigative interview

Eyewitness studies on event memory and delay

Children’s memories of staged or laboratory events (for example, visits to a pirate room and interactions with a magician) were assessed after varying periods of delay, ranging from immediate questioning to six months²⁹⁰, one or two years²⁹¹ later. When asked appropriate

²⁸⁶ Celia H Brackenridge, Daz Bishopp, Sybille Moussalli and James Tapp, ‘The Characteristics of Sexual Abuse in Sport: A Multidimensional Scaling Analysis of Events Described in Media Reports’ (2008) 6(4) *International Journal of Sport and Exercise Psychology* 385.

²⁸⁷ Natalie Martschuk, Jane Goodman-Delahunty, Martine B Powell and Nina Westera, ‘Grooming Similarities in Institutional and Non-institutional Child Sexual Abuse Cases: A Systematic Comparison’ (2017) (submitted for peer review, copy on file with authors).

²⁸⁸ Karen J Saywitz et al, ‘Children’s Memories of a Physical Examination Involving Genital Touch: Implications for Reports of Child Sexual Abuse’ (1991) 59(5) *Journal of Consulting and Clinical Psychology* 682.

²⁸⁹ Ibid.

²⁹⁰ Carolyn H Jones and Margaret-Ellen Pipe, ‘How Quickly do Children Forget Events? A Systematic Study of Children’s Event Reports as a Function of Delay’ (2002) 16(7) *Applied Cognitive Psychology* 755.

²⁹¹ Margaret-Ellen Pipe et al, ‘Children’s Recall 1 or 2 Years after an Event’ (1999) 35(3) *Developmental Psychology* 781.

questions (using free-recall prompts), children provided accurate accounts after long periods of delay. However, the quantity of information reported decreased over time.²⁹² The most rapid forgetting of details occurred soon after the event, after up to one month of delay.²⁹³ Rapid forgetting after short periods of delay is in line with the Ebbinghaus curve of forgetting, showing an initial rapid decline in memory followed by more stable memory retention.²⁹⁴ Children with mild and moderate intellectual disabilities are no more adversely affected by delay than children without intellectual disabilities. Children with mild and moderate intellectual disabilities can, when asked appropriate free-recall questions, provide accurate accounts of events.²⁹⁵

Children's reports after periods of delay revealed relatively few errors. Over time, children made more intrusion errors (the reporting of a detail that did not occur during the incident recalled, but during another, similar incident) rather than experiencing memory distortions (incorrectly reporting core actions or objects). Intrusion errors stem from children's tendency to revert to script-like information or general knowledge of an event rather than recalling specific episodic details of the event. As delay increases, episodic details are forgotten and the information retained is more like gist memory.

In laboratory studies, relatively short follow-up periods (for example, same day or one week) are typical. The memory stimuli used in laboratory experiments are often emotional narratives, pictures and brief videos. These memory stimuli are poor analogues for the experiences of most child sexual abuse victims.²⁹⁶ Additionally, these tests of the impact of delay on children's rates of forgetting do not take into account other factors that influence real-world event memory, such as the nature and frequency of the events, the victim's age, or the extent of emotional arousal or trauma at the time of encoding and retrieval. These factors apply both to children and adult victims after periods of delay.²⁹⁷ Moreover, events staged in a laboratory experiment are unlikely to become part of a research participant's personal autobiographical memories, whereas events in analogue studies in which children underwent routine or emergency medical procedures potentially comprise autobiographical

²⁹² Ibid.

²⁹³ Carolyn H Jones and Margaret-Ellen Pipe, 'How Quickly do Children Forget Events? A Systematic Study of Children's Event Reports as a Function of Delay' (2002) 16(7) *Applied Cognitive Psychology* 755.

²⁹⁴ Matthew H Erdelyi 'The Historical Background of Hypermnnesia and Reminiscence in Experimental Psychology' in *The Recovery of Unconscious Memories: Hypermnnesia and Reminiscence* (University of Chicago Press, 1996) 1.

²⁹⁵ Deirdre A Brown et al, 'The Influences of Delay and Severity of Intellectual Disability on Event Memory in Children' (2012) 80(5) *Journal of Consulting and Clinical Psychology* 829.

²⁹⁶ Alafair Burke, Friederike Heuer and Daniel Reisberg, 'Remembering Emotional Events' (1992) 20(3) *Memory & Cognition*, 277.

²⁹⁷ Annie Cossins and Jane Goodman-Delahunty, 'The Application of the Uniform Evidence Law to Delay in Child Sexual Assault Trials' in *Critical Perspectives on the Uniform Evidence Law* (2017) 104.

memories. Next, we review findings from studies examining personal autobiographical event memories.

Analogue studies on memory and delay

Some analogue studies of children's reports of medical procedures (for example, voiding cystourethrogram procedures²⁹⁸) tested children's memory after a six-week delay. After this delay, analogous in some cases to the period between an abuse event and a police interview, children provided accurate responses, even to misleading questions, and showed minimal rates of forgetting²⁹⁹, particularly of core details of the events.³⁰⁰

In other analogue studies, children who visited an emergency room for an injury were questioned about their injury and treatment after delays of up to five years, a period more analogous to cases in which there is a longer lapse of time between the abusive event and a police interview, or between the police interview and trial date. One research team developed a coding procedure to assess the extent to which completeness of core or gist details were recalled, rather than merely the quantity of information recalled.³⁰¹ Interviews were conducted one week after the injury and five years later. Features, representative of all aspects of the emergency room visit were recalled at similar levels on both occasions.³⁰² The type of injury sustained did not make a difference. Even after the long delay, children retrieved a remarkable quantity of details, although details surrounding the hospital treatment (for example, who took them to the hospital) were less accurately recalled than features of the injury. Children as young as three at the time they visited the emergency room accurately recalled around 80 per cent of the core information about their injuries.³⁰³ Other injury memories persisted well when tested after intervals of five years.³⁰⁴

²⁹⁸ Involving catheterisation and X-ray techniques to examine children's bladder functioning while urinating.

²⁹⁹ Kathy Ann Merritt, Peter A Ornstein and Brenda Spicker, 'Children's memory for a salient medical procedure: Implications for testimony' (1994) 94(1) *Pediatrics* 17.

³⁰⁰ Children were aged 2–13: Carole Peterson and Michael Bell, 'Children's Memory for Traumatic Injury' (1996) 67(6) *Child Development* 3045

³⁰¹ Children recalled treatment of injury in the emergency room. Carole Peterson and Kelly L Warren, 'Injuries, Emergency Rooms and Children's Memory' in Jodi Quas and Robyn Fivush (eds), *Emotion in Memory and Development: Biological, Cognitive and Social Considerations* (Oxford University Press, 2009).

³⁰² 75 per cent versus 73 per cent, respectively.

³⁰³ Carole Peterson and Nikki Whalen, 'Five Years Later: Children's Memory for Medical Emergencies' (2001) 15(7) *Applied Cognitive Psychology* s7.

³⁰⁴ In this study, 145 children aged 2–13 recalled experiences of injury and treatment in the emergency room. Carole Peterson "'And I Was Very Very Crying": Child Self-Descriptions Of Distress As Predictors Of Recall' (2010) 24(7) *Applied Cognitive Psychology* 909; participants were children aged 2–13 years, who had been injured seriously enough to require emergency room medical treatment. Carole Peterson, 'Children's Autobiographical Memories across the Years: Forensic Implications of Childhood Amnesia and Eyewitness Memory for Stressful Events' (2012) 32(3) *Developmental Review* 287.

Despite consensus that children's autobiographical memories of salient personal events (for example, hospital or emergency visits) are accurate and stable over significant periods of delay, research has revealed individual memory differences. For instance, in a study in which children were interviewed one year after surgery for an injury related to sport or an animal, different parenting styles were associated with the amount of information reported and with susceptibility to suggestion.³⁰⁵ The amount of information recalled was reduced among children whose parents were authority figures who demanded obedience. Children who scored high on achievement-motivation tests were less suggestible, and children whose parents emphasised open-mindedness and respect for the opinions of others were more susceptible to suggestion.³⁰⁶

Field studies on memory and delay

Only a few studies have examined memory reports of child sexual abuse victims after periods of delay. A limitation of these studies is that the accuracy of information reported cannot be determined because of a lack of corroborative records of the abuse. Additionally, measuring the effect of delay on children's reports is complicated by the influence of other factors, combined with the delay. Children who were interviewed a long time after the sexual abuse event reported fewer details than children interviewed soon after the event; younger children interviewed after a long delay reported fewer details than older children who experienced a long delay between the event and the interview.³⁰⁷

Highly distinctive events, including events from early childhood, are remembered well, even after long delays.³⁰⁸ Some research has shown that memories for striking or remarkable events can be enduring. For example, in a field study, the memory of 13 adult bystanders at a violent robbery was assessed four to five months after the event. Their memory was largely accurate, unaffected by stress and resistant to suggested misinformation.³⁰⁹

5.3 Delay between investigative interview and trial

After children report sexual abuse in a formal police interview, there are often significant delays before they are cross-examined at trial. Research with Australian child sexual abuse

³⁰⁵ Children were aged 3–7, and recalled 70 per cent after one year: Elaine Burgwyn-Bailes et al, 'Children's Memory for Emergency Medical Treatment After One Year: the Impact of Individual Difference Variables on Recall and Suggestibility' (2001) 15(7) *Applied Cognitive Psychology* 25.

³⁰⁶ Ibid.

³⁰⁷ Michael E Lamb, Kathleen J Sternberg and Phillip W Esplin, 'Effects of Age and Delay on the Amount of Information Provided by Alleged Sex Abuse Victims in Investigative Interviews' (2000) 71(6) *Child Development* 1586.

³⁰⁸ Robyn Fivush and April Schwarzmüller, 'Children Remember Childhood: Implications for Childhood Amnesia' (1998) 12(5) *Applied Cognitive Psychology* 455.

³⁰⁹ John Yuille and Judith Cutshall, 'A Case Study of Eyewitness Memory of a Crime' (1986) 71(2) *Journal of Applied Psychology* 291, 299.

victims and their parents or guardians showed lapses between reporting and the case reaching trial ranged from eight months to three years. The waiting period in New South Wales was an average of 16.4 months. The delay following the interview impacted the complainants' psychological wellbeing by obstructing their ability to 'close' off the experience. Instead, reminders caused children to suffer from nightmares, fear of further victimisation by the offender and fear of testifying at the trial. Despite attempts to prioritise cases of child molestation, only in Western Australia have trial delays been avoided by pre-recording children's evidence, including cross-examination.³¹⁰

Two major concerns about the memory of victims of child sexual abuse centre on the period after the police interview and before the trial. The first is memory susceptibility to social pressure and the second is memory susceptibility to post-event misinformation. For example, informal discussions with family members and friends following an investigative interview(s) may expose children to deliberate coaching or misleading information before the case reaches court. Children's susceptibility to false information has been extensively studied. This section provides a general overview of the findings on social influence and post-event misinformation during periods of delay.

Eyewitness studies on delay, social influence and post-event misinformation

Theoretically, misinformation effects are claimed to stem from children's inability to differentiate memories of the original event from subsequent misinformation; that is, due to source amnesia and poor monitoring of the sources of information. Post-event misinformation has been posited to take precedence over an original memory trace, particularly when the misinformation was repeated or was more salient than the original event at the time of encoding.³¹¹

Other researchers have theorised that children's susceptibility to misinformation stems from their conformity to guidance from trusted adults or authority figures³¹², such as their parents. Studies of false feedback showed a small increase in belief that a suggested event occurred, but the events were still rated as unlikely to have happened.³¹³ Other studies have shown that when children were explicitly asked about the source of the misinformation, older

³¹⁰ Christine Eastwood, 'The Experiences of Child Complainants of Sexual Abuse in the Criminal Justice System' (2013) 250 *Trends & Issues in Crime and Criminal Justice* 1. Victims aged 8–17 were in Queensland, New South Wales and Western Australia.

³¹¹ Lucy Akehurst, Natalie Burden and Jane Buckle, 'Effect of Socially Encountered Misinformation and Delay on Children's Eyewitness Testimony' (2009) 16(s1) *Psychiatry, Psychology, and Law* 125.

³¹² Stephen J Ceci, David F Ross and Michael P Toglia, 'Suggestibility of Children's Memory: Psycholegal Implications'. (1987) 116(1) *Journal of Experimental Psychology: General* 38.

³¹³ Chris R Brewin and Bernice Andrews, 'Creating Memories for False Autobiographical Events in Childhood: A Systematic Review' (2017) 31(1) *Applied Cognitive Psychology* 2.

children correctly reported that their parents were the source.³¹⁴ Social pressure may not alter memory but merely reflect conformity and social contagion in reporting.³¹⁵ Developmental psychologists emphasise that suggestibility is prevalent across all ages, but ‘younger children are quite vulnerable when they’re interviewed by an authority figure or somebody else who allegedly knows more about the event than they do, as often comes across in interviews. Then, children are much more susceptible to suggestibility’.³¹⁶

During and after the abuse, the offender may subject the victim to manipulative cognitive distortions to minimise the reporting of the event. The effects of these influences on victims are under-researched as most research on cognitive distortions about child sexual assault have been conducted with offenders, not with victims.

As part of the offending process or during the post-reporting period, children may experience significant pressure from offenders or family members to alter their report of an abuse event.³¹⁷ Coaching efforts to persuade the victim to alter their report may have an influence. In a laboratory experiment, children were susceptible to false suggestions by their parents.³¹⁸ Research has shown that extensive coaching of children to provide false reports was associated with lying and inaccurate reporting.³¹⁹

Before giving evidence in court, child victims may discuss their experiences of abuse with their parents and peers. Research on children’s conformity to misinformation presented by peers and adults showed that adults had more effect on children’s accuracy than peers. The effect was stronger for younger children and decreased with age.³²⁰

³¹⁴ Children aged 3–8 were exposed to a demonstration, following which their parents read a story that did or did not include misinformation, and then they were interviewed; Debra Ann Poole and D Stephen Lindsay, ‘Children’s Eyewitness Reports After Exposure to Misinformation from Parents’ (2001) 7(1) *Journal of Experimental Psychology: Applied* 27.

³¹⁵ In-Kyeong Kim, Enoch S Kwon and Stephen J Ceci, ‘Developmental Reversals in Report Conformity: Psycho-Legal Implications’ (2017) 31(2) *Applied Cognitive Psychology* 128.

³¹⁶ Kay Bussey, Royal Commission into Institutional Responses to Child Sexual Abuse Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 20, lines 3–7.

³¹⁷ Evianne L van Gijn, and Michael E Lamb, ‘Alleged Sex Abuse Victims’ Accounts of Their Abusers’ Modus Operandi’ (2013) 3(2) *Journal of Forensic Social Work* 133.

³¹⁸ Children aged 3–8 were exposed to a demonstration, then their parents read a story and lastly they were interviewed; Debra Ann Poole and D Stephen Lindsay, ‘Children’s Eyewitness Reports After Exposure to Misinformation from Parents’ (2001) 7(1) *Journal of Experimental Psychology: Applied* 27.

³¹⁹ In this study, 198 children aged 4–7, who had experienced substantiated maltreatment either participated in a play event with a toy house or not, Thomas D Lyon et al, ‘Coaching, Truth Induction, and Young Maltreated Children’s False Allegations and False Denials’ (2008) 79(4) *Child Development* 914.

³²⁰ Rolando N Carol and Nadja Schreiber Compo, ‘Other People: A Child’s Age Predicts a Source’s Effect on Memory’ (2015) 22(1) *Legal and Criminological Psychology* 74.

Analogue studies on delay and resistance to misinformation

When misleading post-event information was presented to children a long time (for example, a year) after a personally salient autobiographical event involving a visit to an emergency room for injuries, children did not incorporate the misleading suggestions into their long-term memories of the event. After long periods of delay, children successfully differentiated and accurately described the original event, omitting the misleading post-event information.³²¹

Field studies on delay and social influence

After children's disclosures of sexual abuse and prior to the trial, child victims may be under considerable pressure from parents or others to retract their allegations of abuse. Close to one-quarter of child victims retract allegations of abuse.³²² Retraction pressures can build as time passes. One study revealed that retraction was most prevalent at the fourth interview.³²³ Parental abuse has been associated with higher retraction rates as these child victims experienced more external or internal pressure; for example, a non-offending parent seeking to remain in a relationship with the alleged offender or to protect the alleged offender may put pressure on the child. Lack of support from non-offending family members and the child's age were associated with higher retraction rates³²⁴, and younger children retracted more often than older children.³²⁵

5.4 The effects of delay on adult memories

Research on the temporal distribution of autobiographical memories retained by adults revealed three noteworthy trends. First, little is recalled about infancy and very early childhood, including the pre-school years, due to infantile and childhood amnesia. Second, a

³²¹ Carole Peterson, Tina Parsons and Myra Dean, 'Providing Misleading and Reinstatement Information a Year After it Happened: Effects on Long-Term Memory' (2004) 12(1) *Memory* 1.

³²² This study included 257 substantiated cases of sexual abuse. All cases resulted in dependency court cases (where parental rights can be terminated on the basis of neglect or abuse of children) between 1999 and 2000. The children were aged 2–17. Perpetrators included parent figures (71 per cent), relatives (16 per cent) and others (13 per cent). In 23 per cent of cases, children recanted; Lindsay C Malloy, Thomas D Lyon and Jodi A Quas, 'Filial Dependency and Recantation of Child Sexual Abuse Allegations' (2007) 46(2) *Journal of the American Academy of Child & Adolescent Psychiatry* 162; Lindsay C Malloy and Allison P Mugno, 'Children's Recantation of Adult Wrongdoing: An Experimental Investigation' (2016) 145 *Journal of Experimental Child Psychology* 11.

³²³ In this study, 57 per cent of the child survivors who recanted maintained in their last interview that the abuse did not occur; Lindsay C Malloy, Thomas D Lyon and Jodi A Quas, 'Filial Dependency and Recantation of Child Sexual Abuse Allegations' (2007) 46(2) *Journal of the American Academy of Child & Adolescent Psychiatry* 162.

³²⁴ *Ibid.*

³²⁵ Stacy Gordon and Paula K Jaudes, 'Sexual Abuse Evaluations in the Emergency Department: Is the History Reliable?' (1996) 20(4) *Child Abuse & Neglect* 315; Marcus Choi Tye et al, 'The Willingness of Children to Lie and the Assessment of Credibility in an Ecologically Relevant Laboratory Setting' (1999) 3(2) *Applied Developmental Science* 92.

reminiscence 'bump' occurs, showing an abundance of memories for the period of late adolescence and early adulthood, from around the age of 15 to 25. Third, adults report more events occurring in the past several years, due to recency effects.³²⁶

With respect to delay, research has suggested that the quantity and quality of long-term autobiographical memory 'is best characterized as a power function in which effects of delay upon recall are most substantial within the first 10–15 years following an event and generally diminish over the next 20–30 years'.³²⁷

As time passes, memories of specific emotional, temporal or verbatim details (precisely what was said) are not retained. For example, a longitudinal comparison of the autobiographical memory of adolescent males compared with their statements at age 48 revealed differences in what was reported and the perspectives taken. In particular, the adult narrations of childhood events rarely included specific emotional, temporal or verbatim details.³²⁸

During reconsolidation, memories are reactivated and can subsequently be deleted, modified, weakened or strengthened.³²⁹ If memories during the consolidation process are modified, they can become distorted. For example, during the consolidation process, original childhood memories can be affected and blended with information from discussions, photographs or movies. Information reported about childhood events may be influenced by information gained from parents and other family members.³³⁰ Since the consolidation process occurs outside an individual's awareness, adults may not have the ability to differentiate between details of the memories of an underlying event and post-event influences.

5.5 Historical cases of child sexual abuse

Historical cases of child sexual abuse, or cases where adults report experiences of child sexual abuse, have been investigated to assess people's ability to recall childhood events and the veracity of their memories. Most adults who have experienced child sexual abuse have continuous memories of the abuse. A number of factors have been posited as influencing the accuracy and veracity of these reports, including the victims' developmental capabilities at the time of the abuse, cognitive changes during the delay period, social factors, levels of stress

³²⁶ Henry L Roediger, Franklin M Zaromb and Michael K Goode, 'A Typology of Memory Terms' in Randolph Menzel (eds), *Learning Theory and Behavior* (Elsevier, 2008) vol 1, 21.

³²⁷ Deborah A Connolly and J Don Read, 'Remembering Historical Child Sexual Abuse' (2003) 47 *Criminal Law Quarterly* 438, 450.

³²⁸ Daniel Offer et al, 'The Altering of Reported Experiences' (2000) 39(6) *Journal of the American Academy of Child & Adolescent Psychiatry* 735.

³²⁹ Cristina Alberini and Joseph LeDoux, 'Memory Reconsolidation' (2013) 23(17) *Current Biology* 746.

³³⁰ Cathy Spatz Widom and Elise L Landry, 'Research on Child Abuse and Neglect' in Barry Rosenfeld and Steven Penrod (eds), *Research Methods in Forensic Psychology* (John Wiley & Sons, 2011) 487, 492.

and interpersonal trauma, and the way in which the memory was elicited. Special attention has been paid to the forgetting of child sexual abuse.

Unreported traumatic memories

The Australian Psychological Society uses the term ‘unreported traumatic’ memories to refer to apparently forgotten but subsequently remembered memories, including memories of child sexual abuse. Studies have yielded relatively small but somewhat divergent proportions of adult victims who claimed to have temporarily forgotten experiences of child sexual abuse, ranging from 7 per cent³³¹ to 14 per cent³³² to roughly 25 per cent.³³³

Instances in which sexual abuse occurred in very early childhood or when the victims did not experience the abuse as distinctive, abusive or sexual in nature at the time of encoding³³⁴ may account for unreported traumatic memories. For example, according to a participant at the Royal Commission roundtable, a victim ‘may have some awareness of an event, but your interpretation of that event might change dramatically over time’.³³⁵ Sexually abusive events, particularly if they were not experienced as stressful or distinctive, are prone to normal forgetting.³³⁶ Forgetting can occur when the victims experience few reminders of the abuse, because, for instance, they have moved to a different environment.³³⁷ Psychological mechanisms such as cognitive avoidance and dissociation, which are associated with forgetting traumatic abuse, are discussed in Chapter 6.

³³¹ Deborah A Connolly and J Don Read, ‘Remembering Historical Child Sexual Abuse’ (2003) 47 *Criminal Law Quarterly* 438.

³³² Bette L Bottoms et al, ‘Trauma Severity and Defensive Emotion-Regulation Reactions as Predictors of Forgetting Childhood Trauma’ (2012) 13(3) *Journal of Trauma and Dissociation* 291.

³³³ Sharon C Wilsnack et al, ‘Self-Reports of forgetting and remembering childhood sexual abuse in a nationally representative sample of US women’ (2002) 26(2) *Child Abuse & Neglect* 139.

³³⁴ Chris Lennings, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 8, lines 39-41.

³³⁵ Richard Kemp, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 59, lines 28-30.

³³⁶ Geraerts et al, ‘Cognitive Mechanisms Underlying Recovered-Memory Experiences of Childhood Sexual Abuse’ (2009) 20(1) *Psychological Science* 92; Richard J McNally and Elke Geraerts, ‘A New Solution to the Recovered Memory Debate’ (2009) 4(2) *Perspectives on Psychological Science* 126; Svein Magnussen and Annika Melinder, ‘What Psychologists Know and Believe about Memory: A Survey of Practitioners’ (2011) 26(1) *Applied Cognitive Psychology* 54.

³³⁷ William J Cromie, ‘Not Unusual to Forget Childhood Sexual Abuse’ *Harvard Gazette*, October 12, 2006 <<http://news.harvard.edu/gazette/story/2006/10/not-unusual-to-forget-childhood-sexual-abuse/>>; Elke Geraerts, Linsey Raymaekers and Harald Merckelbach, ‘Recovered Memories of Childhood Sexual Abuse: Current Findings and Their Legal Implications’ (2008) 13(2) *Legal and Criminological Psychology* 165.

Spontaneous recovery of memories of child sexual abuse

Forgotten memories of child sexual abuse can be recovered spontaneously, whether inside or outside of therapy, upon encountering a salient retrieval cue (for example, returning to the scene of the abuse, seeing a similar event on film or encountering the perpetrator).³³⁸ Interpretation of spontaneously recovered memories of child sexual abuse (even outside a therapeutic setting) can have considerable legal implications.³³⁹

Research has been conducted on whether people who claim to have spontaneously recovered memories of child sexual abuse, that were initially inaccessible, also report poor autobiographical memories for non-abusive events.³⁴⁰ The researchers concluded that people with recovered memories, in general, do not have more difficulty retrieving autobiographical memories than people with continuous memories of child sexual abuse. However, all sexually abused victims generally had more difficulty with their autobiographical memories compared to the control group who had never experienced sexual abuse. The authors speculated that sexual abuse victims may have deliberately avoided thinking about the abuse and that as a result, their autobiographical memories for non-traumatic events were reduced.³⁴¹ Chapter 6 describes these processes in more detail.

Studies show that corroboration rates for discontinuous, unreported traumatic memories are similar to those for continuous memories.³⁴² Evidence supporting sexual abuse was more likely to exist in cases of adults who reported spontaneous recovery of discontinuous memories outside of therapy, rather than in therapy.³⁴³ Methodological issues in studies in which adults were questioned about periods when they had no memories of events included

³³⁸ Ibid; Richard J McNally and Elke Geraerts, 'A New Solution to the Recovered Memory Debate' (2009) 4(2) *Perspectives on Psychological Science* 126.

³³⁹ For example, in *R v Eishauer* the NSW Court of Criminal Appeal (NSWCCA) decided that a conviction based on a 'recovered' memory was unsafe and unsatisfactory when the relevant memory was reported after the complainant read her sister's statement. There was uncertainty, according to the NSWCCA, as to whether the accused had been sexually assaulted by the defendant or by another person. It was held that since it was equally possible that MH's memories were true recovered memories or honestly experienced false memories, a reasonable doubt existed concerning the appellant's guilt. The trial judge was found to have erred when finding that a statement by the complainant ('I had put out of all my mind about him') was thought to represent relevant and important evidence of subconscious (or other) denial or suppression of memory; *R v Eishauer* (1997) 96 A Crim R 489.

³⁴⁰ Linsey Raymaekers et al, 'Autobiographical Memory Specificity Among People with Recovered Memories of Childhood Sexual Abuse' (2010) 41(4) *Journal of Behavior Therapy and Experimental Psychiatry* 338.

³⁴¹ Ibid.

³⁴² Elke Geraerts et al, 'The Reality of Recovered Memories: Corroborating Continuous and Discontinuous Memories of Childhood Sexual Abuse' (2007) 18(7) *Psychological Science* 564.

³⁴³ Ibid.

the potential for adults to misinterpret their own memory functioning, and to erroneously report forgetting when, in fact, participants did recall the events.³⁴⁴

5.6 False memories of child sexual abuse

During the so-called 'memory wars' some cognitive psychologists were critical of clinical psychodynamic therapists and their abreaction (or unblocking) techniques used to recover memories of abuse ostensibly rendered inaccessible by alleged psychodynamic defence mechanisms. First, it was debated whether adults could entirely repress and thus fail to remember a traumatic childhood event. Second, questions persisted as to the extent to which a non-continuous memory of childhood events was accurate. On one hand, the repression advocates³⁴⁵ submitted that the more traumatic a childhood event was, the more difficult it is to remember as the memory is outside of conscious awareness.³⁴⁶ They argued that memories of these traumatic events could only surface in psychotherapeutic settings.³⁴⁷ Studies supporting this theory were criticised because the research samples included only participants who retrospectively reported their abuse, and because their abuse reports could not be independently verified.³⁴⁸

More empirical support has been gathered for the theory that memories of child sexual abuse recovered in therapy are false than for the theory that they were unreported until recovered in therapy.³⁴⁹ Child abuse memories recovered in psychotherapeutic settings, which include features such as guided imagery, hypnosis and other techniques used by therapists to recover unreported child sexual abuse events³⁵⁰, have a heightened false propensity³⁵¹. Nonetheless,

³⁴⁴ Susan Joslyn et al, 'Memory for Memory' (2001) 29(6) *Memory & Cognition* 789; Linsey Raymaekers et al, 'Autobiographical Memory Specificity among People with Recovered Memories of Childhood Sexual Abuse' (2010) 41(4) *Journal of Behavior Therapy and Experimental Psychiatry* 338.

³⁴⁵ A notion derived from theories on hysteria espoused in the nineteenth century, Joseph Breuer and Sigmund Freud, *Studies on Hysteria* (James Strachey and Alex Strachey trans, Penguin, 1974); Chris R Brewin and Bernice Andrews, 'Recovered Memories of Trauma: Phenomenology and Cognitive Mechanisms' (1998) 18(8) *Clinical Psychology Review* 949, 950.

³⁴⁶ Renee Fredrickson, *Repressed Memories: A Journey to Recovery from Sexual Abuse* (Touchstone, 1992).

³⁴⁷ Kathleen L Ratican, 'Sexual Abuse Survivors: Identifying Symptoms and Special Treatment Considerations' (1992) 71(1) *Journal of Counselling & Development* 33.

³⁴⁸ John Briere and Jon Conte, 'Self-Reported Amnesia for Abuse in Adults Molested as Children' (1993) 6(1) *Journal of Traumatic Stress* 21; Diana M Elliott and John Briere, 'Posttraumatic Stress Associated with Delayed Recall of Sexual Abuse: A General Population Study' (1995) 8(4) *Journal of Traumatic Stress* 629.

³⁴⁹ Richard J McNally and Elke Geraerts, 'A New Solution to the Recovered Memory Debate' (2009) 4(2) *Perspectives on Psychological Science* 126.

³⁵⁰ Cynthia A Meyersburg et al, 'False Memory Propensity in People Reporting Recovered Memories of Past Lives' (2009) 118(2) *Journal of Abnormal Psychology* 399

³⁵¹ D Stephen Lindsay and John Don Read, "'Memory Work" and Recovered Memories of Childhood Sexual Abuse: Scientific Evidence and Public, Professional, and Personal Issues' (1995) 1(4) *Psychology, Public Policy, and Law* 846; Richard J McNally and Elke Geraerts, 'A New Solution to the Recovered Memory Debate' (2009) 4(2) *Perspectives on Psychological Science* 126.

survey results have shown that some psychologists believe that adults can repress memories of child sexual abuse.³⁵²

False memory implantation studies

Relevant to some claims of historical child sexual abuse is psychological research conducted over the past 25 years that examines the conditions under which adults will adopt a false autobiographical memory about a childhood event. Notably, this research relates to the small proportion of adult victims of child sexual abuse who claim to have forgotten the abuse until memories of it were recovered in a therapeutic setting.³⁵³ This research was initiated to address concerns that recovered memories of child sexual abuse were false because they were generated in response to suggestive therapeutic practices.³⁵⁴ In these studies, suggestive questioning techniques (for example, guided visualisation and false feedback) and social persuasion strategies (for example, a social authority such as a trustworthy family member providing a description³⁵⁵ or a doctored family photograph of a target implanted event³⁵⁶) are used to convince a young adult research participant that a target implanted event occurred in their childhood. In a final interview, the researchers assess whether the false memory was adopted.³⁵⁷

Two outcomes of memory implantation research are especially noteworthy. The first is that they are informative about the conditions or procedures necessary to inculcate false autobiographical memories that may apply to false memories of child abuse, although the types of events successfully implanted have never included child sexual abuse. Researchers reviewing results from false memory implantation studies with adults acknowledged: 'It is likely to be more difficult to lead people to develop false beliefs or memories of childhood sexual abuse than of, say, a childhood prank'.³⁵⁸ Second, the results confirmed that even with a combination of multiple suggestive and elaborate social persuasion techniques under controlled laboratory conditions, the greater majority of the participants (between

³⁵² Svein Magnussen and Annika Melinder, 'What Psychologists Know and Believe about Memory: A Survey of Practitioners' (2011) 26(1) *Applied Cognitive Psychology* 54.

³⁵³ Robert E Belli, 'Toward the Reconciliation of the True And False Recovered Memory Debate' in Ros Burnett (ed), *Wrongful Allegations of Sexual and Child Abuse* (Oxford University Press, 2016) 255.

³⁵⁴ D Stephen Lindsay and J Don Read, 'Psychotherapy and Memories of Child Sexual Abuse: A Cognitive Perspective' (1994) 8(4) *Applied Cognitive Psychology* 281.

³⁵⁵ Mary Anne Garry and Kimberly A Wade, 'Actually a Picture is Worth Less Than 45 Words: Narratives Produce More False Memories Than Photographs Do' (2005) 12(2) *Psychonomic Bulletin and Review* 359.

³⁵⁶ Kimberly A Wade et al, 'A Picture is Worth a Thousand Lies: Using False Photographs to Create False Childhood Memories' (2002) 9(3) *Psychonomic Bulletin and Review* 597.

³⁵⁷ Alan Scoboria et al, 'A Meta-Analysis of Memory Reports from Eight Peer-reviewed False Memory Implantation Studies' (2017) 25(2) *Memory* 146.

³⁵⁸ *Ibid.*

70 per cent³⁵⁹ and 85 per cent³⁶⁰) were *not* susceptible to these influences, and did not adopt false autobiographical memories of childhood events.

Key points on the effects of delay on memory

- Attention is crucial to encode features of an event. If actions, objects or features are not noticed or attended to during an event, that information is not encoded into short-term memory and no memory trace is formed. Distinctive and personally salient information is more likely to be attended to and thus encoded.
- Most people who have experienced child sexual abuse have continuous memories of the abuse. However, abuse memories are subject to normal forgetting. Based on their current understanding, individuals usually unconsciously update and modify their memories, filling in memory gaps regarding details that were either not encoded or were forgotten.
- Generally, false memory experiments have shown that most people (70–85 per cent) are not susceptible to misinformation. Misinformation effects are mostly for details that are not particularly memorable.
- After periods of delay, even pre-schoolers have accurate memories of core features of events, whereas other features are less well remembered, irrespective of age. Memories of school-aged children³⁶¹ with mild or moderate intellectual disabilities are generally as durable as those of children without intellectual disabilities. Children with mild or moderate intellectual disabilities can usually provide accurate accounts of events when asked appropriate free-recall questions.

³⁵⁹ Ibid.

³⁶⁰ Chris R Brewin and Bernice Andrews, 'Creating Memories for False Autobiographical Events In Childhood: A Systematic Review' (2016) *Applied Cognitive Psychology*. Advance online publication. doi:10.1002/acp.3220.

³⁶¹ In most states and territories in Australia, school-aged children are aged 6–17.

Chapter 6

Effects of emotion and trauma on memory

It is difficult to draw general conclusions about the effects of child sexual abuse on children's and adults' memory. Instead, an individualised approach to understanding each complainant is key. It is important to evaluate their interpretation of the incident at the time it occurred, the history since the incident, the nature of their experience, their reaction to the incident and how they have been interviewed and supported since then. General developmental research indicates that the ways in which children respond to child sexual abuse will depend on multiple factors, including those related to the child, their family or caregiving context, the abusive experience, the intervening events and subsequent retrieval contexts. Although research on memory involving sexually abused individuals is still in its infancy, child sexual abuse can be well retained in memory, but may be vulnerable to 'normal' memory processes such as forgetting. At times, apparent forgetting can be difficult to distinguish from intentional non-reporting. Reactions to traumatic experiences can involve diagnosable mental disorders and the fragmentation of autobiographical memory, but not in all cases. The presence of mental disorders and the extent of fragmentation are often determined by the coping strategies of victims during and after a traumatic experience, including how they manage any resultant clinical conditions. Cross-examination can be a further source of stress on memory retrieval.

The aim of this chapter is to provide a brief summary of research findings on the impact of highly stressful and traumatic events on memories of child sexual abuse. This chapter reviews research on memory under conditions of emotional arousal and distress beyond normal orienting arousal and attention. The first part of the chapter discusses types of stress and trauma, and how individuals may respond differently to stress and trauma. The second part provides an overview of research on the effects of stress and trauma on encoding, retention and retrieval of abuse and non-abuse memories.

The results of studies involving the effects of ordinary arousal and attention are excluded from this chapter. This is because earlier research reviews that did not make this distinction yielded mixed outcomes: the results from participants with ordinary levels of alert attention were often confounded with those of highly distressed participants.³⁶² To overcome this issue, a meta-analytical review of the impact of negative stress on eyewitness memory distinguished between 'stress producing an ordinary alert-orienting response' and 'negative

³⁶² See, for example, Sven-Åke Christianson, 'Emotional Stress and Eyewitness Memory: A Critical Review' (1992) 112(2) *Psychological Bulletin* 284; Kenneth A Deffenbacher 'The Influence of Arousal on Reliability of Testimony' in Sally M A Lloyd-Bostock and Brian R Clifford (eds), *Evaluating Witness Evidence* (Wiley, 1983) 235.

stress from events that are personally intrusive or threatening to bodily integrity or self-esteem', which can produce a defensive response leading to clinically diagnosable traumatic symptoms.³⁶³ Memories that have been encoded, retained or rehearsed and then retrieved by people with clinically diagnosable reactions to trauma (such as post-traumatic stress disorder (PTSD) and acute stress disorder (ASD))³⁶⁴ can yield different patterns of memory performance relative to those of people who are not suffering from such conditions.³⁶⁵

The majority of the research reported in this chapter is drawn from studies in which participants were proximally or personally involved in emotionally evocative, distressing or traumatic events. A substantial number of field studies of injured children have provided insights into children's autobiographical memory of experiences that are somewhat analogous to those of child sexual abuse victims. These findings are supplemented by studies of samples of abused children.

6.1 Types of trauma

Researchers often make distinctions about the impact of trauma on memory based on the source of the trauma, including medical procedures, natural disasters, community violence, interpersonal violence or betrayal.³⁶⁶ For example, 'betrayal trauma'³⁶⁷ is described as a social-affective response relevant to child sexual abuse at the hands of family, friends or trusted authority figures who are familiar to the victim.³⁶⁸ This includes systematic abuse perpetrated by members of the clergy, teachers and coaches within institutions like churches, schools and sporting clubs. Individual reactions to systematic institutional abuse are also

³⁶³ Kenneth A Deffenbacher et al, 'A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory' (2004) 28(6) *Law and Human Behavior* 687.

³⁶⁴ Definitions of these psychological disorders are provided in the glossary.

³⁶⁵ Kristen Weede Alexander and Karen Davis O'Hara, 'An Integrated Model of Emotional Memory' in Jodi Quas and Robyn Fivush (eds), *Emotion in Memory and Development: Biological, Cognitive and Social Considerations* (Oxford University Press, 2009) 221.

³⁶⁶ Jennifer J Freyd, Anne P DePrince and Eileen L Zurbriggen, 'Self-reported Memory for Abuse Depends upon Victim-Perpetrator Relationship' (2001) 2(3) *Journal of Trauma & Dissociation* 5.

³⁶⁷ Jennifer J Freyd, *Betrayal Trauma: The Logic of Forgetting Childhood Abuse* (Harvard University Press, 1996); Jennifer J Freyd, 'Memory and Dimensions of Trauma: Terror May Be 'All-Too-Well Remembered' and Betrayal Buried' in Jon R Conte (ed), *Critical Issues in Child Sexual Abuse: Historical, Legal, and Psychological Perspectives* (Sage Publications, 2001) 139-173; Jennifer J Freyd, Anne P DePrince and David H Gleaves, 'The State of Betrayal Trauma Theory: Reply to McNally: Conceptual Issues and Future Directions' (2007) 15(3) *Memory* 295; Jennifer J Freyd, 'Preventing Betrayal' (2013) 14(5) *Journal of Trauma & Dissociation* 495; Courtney Welton-Mitchell, 'Associations Between Thematic Content and Memory Detail in Trauma Narratives' (2013) 27(4) *Applied Cognitive Psychology* 462.

³⁶⁸ Jennifer J Freyd et al, 'The Science of Child Sexual Abuse' (2005) 308(5721) *Science* 501.

referred to as ‘institutional betrayal’.³⁶⁹ Despite attempts to isolate the impact of betrayal on resulting clinical symptoms³⁷⁰, there is much overlap between the observed cognitive and emotional consequences of betrayal trauma, including institutional betrayal, and other sources of interpersonal trauma, such as neglect, maltreatment and physical abuse.³⁷¹ There are also many experienced symptoms apparent within trauma typologies that are based on dimensions such as betrayal.³⁷² Nonetheless, betrayal trauma theory³⁷³ claims that:

Abuse perpetrated within close relationships is more harmful than abuse perpetrated by strangers because of the violation of trust within a necessary relationship . . . [and the] coping strategy that this type of trauma often necessitates: extended unawareness or ‘blindness’ to the betrayal trauma, and even complete inability to remember high betrayal trauma such as caregiver abuse.³⁷⁴ This strategy allows for the maintenance of necessary relationships, even those that contain mistreatment, in a way that supports attachment behaviours.³⁷⁵

Researchers report that betrayal trauma leads to higher rates of PTSD, dissociation, anxiety, depression and borderline personality disorder compared to interpersonal trauma perpetrated by strangers.³⁷⁶ Some studies have also demonstrated gender differences³⁷⁷, such that the nature of PTSD symptomology may be gender-specific to the extent that betrayal trauma heightens the expression of some PTSD symptoms. For example, a large Australian survey found that PTSD sufferers who had experienced intimate interpersonal trauma exhibited more distress at reminders, greater avoidant thinking about the event, greater detachment from others and more restricted affect than PTSD sufferers who

³⁶⁹ Carly Partnitzke Smith and Jennifer J Freyd, ‘Institutional Betrayal’ (2014) 69(6) *American Psychologist* 575, 575; Jennifer J Freyd and Pamela J Birrell, *Blind to Betrayal: Why We Fool Ourselves We Are Not Being Fooled / From Close Relationships to Institutional Betrayal* (John Wiley & Sons, 2013).

³⁷⁰ Christina Gamache Martin, Mark J van Ryzin and Thomas J Dishion, ‘Profiles of Childhood Trauma: Betrayal, Frequency, and Psychological Distress in Late Adolescence’ (2016) 8(2) *Psychological Trauma Theory: Research, Practice, and Policy* 206.

³⁷¹ Ibid.

³⁷² Ibid.

³⁷³ Jennifer J Freyd, *Betrayal Trauma: The Logic of Forgetting Childhood Abuse* (Harvard University Press, 1996); Jennifer J Freyd, ‘Violations of Power, Adaptive Blindness, and Betrayal Trauma Theory’ (1997) 7(1) *Feminism and Psychology* 22–32.

³⁷⁴ Jennifer J Freyd, Anne P DePrince and Eileen L Zurbriggen, ‘Self-reported Memory for Abuse Depends Upon Victim–Perpetrator Relationship’ (2001) 2(3) *Journal of Trauma & Dissociation* 5.

³⁷⁵ Carly Partnitzke Smith and Jennifer J Freyd, ‘Institutional Betrayal’ (2014) 69(6) *American Psychologist* 575, 577.

³⁷⁶ Jennifer J Freyd and Pamela J Birrell, *Blind to Betrayal: Why We Fool Ourselves We Are Not Being Fooled / From Close Relationships to Institutional Betrayal* (John Wiley & Sons, 2013).

³⁷⁷ Sharon Shin Shin Tang and Jennifer J Freyd, ‘Betrayal Trauma and Gender Differences in Posttraumatic Stress (2012) 4(5) *Psychological Trauma: Theory, Research, Practice, and Policy*, 469–478.

experienced trauma from non-interpersonal (for example, accidents, natural disasters) or non-intimate interpersonal sources.³⁷⁸ However, the nature and severity of resulting post-trauma diagnosable mental illnesses, or psychopathology (such as PTSD or ASD symptoms) that flow from *any* form of traumatic experience appear to be determined primarily by factors such as the age of onset and the duration of the trauma.³⁷⁹

6.2 Individual differences and trauma

When victims are asked to retrieve memories of child sexual abuse, individual differences need to be considered and accommodated. The ability to convey a coherent autobiographical narrative about child sexual abuse varies based on factors such as the strength of parental attachment, developmental maturation, cultural background, coping style and the presence of psychopathology.

Reactions to traumatic events such as child sexual abuse vary because of individual differences in vulnerability and resilience, and because some individuals also experience additional comorbid abuse (that is, physical or emotional abuse that occurs alongside the sexual abuse).³⁸⁰ Thus, what is distressing or traumatic for one person is not necessarily so for another, and the presence or absence of mental disorders, even in response to the same type of incident, can vary at the individual level. Furthermore, some victims may not have realised that they were being abused at the time of the abuse.³⁸¹ The objective reality that abuse occurred does not imply that subjective trauma will inevitably be experienced, nor does it predict a uniform memory outcome for different victims.³⁸²

Moreover, events that adults presume will be traumatic for children are not necessarily so, though when children do subjectively experience events as traumatic, psychopathology may

³⁷⁸ A study of 1,012 Australians aged 16–85 who reported their ‘most severe’ reactions to trauma in the 2007 Australian National Survey of Mental Health and Wellbeing. David Forbes, Emma Lockwood and Andrea Phelps, ‘Trauma at the Hands of Another: Distinguishing PTSD Patterns Following Intimate and Nonintimate Interpersonal and Noninterpersonal Trauma in a Nationally Representative Sample’ (2014) 75(2) *Journal of Clinical Psychiatry* 147.

³⁷⁹ Richard A Bryant, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 48, lines 27–43.

³⁸⁰ Karen Salmon and Richard O’Kearney, ‘Emotional Memory, Psychopathology, and Wellbeing’ in Patricia Bauer and Robyn Fivush (eds), *Wiley Handbook on the Development of Children’s Memory* (John Wiley & Sons, 2014) 743; Penelope K Trickett, Jennie G Noll and Frank W Putnam, ‘The Impact of Sexual Abuse on Female Development: Lessons from a Multigenerational, Longitudinal Research Study’ (2011) 23(2) *Development & Psychopathology* 453.

³⁸¹ Chris Lennings, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 8, lines 38–46; 9, lines 1–4.

³⁸² Tammy A Marche and Karen Salmon, ‘Children’s Memory for Emotionally Negative Experiences: An Eyewitness Memory Perspective’ In *Child Forensic Psychology* (Palgrave Macmillan, 2012) 119.

result.³⁸³ For example, a review of 45 studies on the responses of children to experiences of child sexual abuse revealed that a third of the victims did not experience any of the symptoms that were common among the other two-thirds of the victims, including fear, behavioural problems, sexualised behaviours, poor self-esteem and PTSD.³⁸⁴ The effects of distress and trauma on memory can also differ among individuals.

Gender differences in psychopathology due to gender-based violence emerged in one survey, which showed that despite women experiencing fewer traumatic events than men, they demonstrated a higher prevalence of lifelong PTSD symptoms.³⁸⁵ The women experienced three times more gender-based violence than men, and were seven times more likely to nominate this type of violence as their primary or 'index' trauma. They were also twice as likely to nominate harm from others as their index trauma. A longitudinal study of intra-familial sexual abuse revealed that the sampled female victims suffered from depression, PTSD, dissociative symptoms, cognitive deficits, asymmetrical stress responses, and other dysfunctions and intergenerational maldevelopments (such as higher rates of abusive relationships with partners and neglectful parenting) at greater rates than their non-abused female comparators.³⁸⁶

The need to consider individual difference factors is similar to the need highlighted by many clinicians for cultural sensitivity when working with trauma victims.³⁸⁷ The issues that arise range from higher levels of untreated trauma in some low- and middle-income families to relatively high rates of stigma and self-stigma in some minority group cultures within multicultural Western societies.³⁸⁸ No objectively stressful or traumatic event alone is a good predictor of memory since individual responses to high stress can reduce the quality and quantity of recall.³⁸⁹

³⁸³ Gail S Goodman, Jodi A Quas and Christin M Ogle, 'Child Maltreatment and Memory' (2010) 61 *Annual Review of Psychology* 325; Amy Hardy, Kerry Young and Emily A Holmes, 'Does Trauma Memory Play a Role in the Experience of Reporting Sexual Assault During Police Interviews? An Exploratory Study' (2009) 17(8) *Memory* 783; Latonya Harris et al, 'Coping Style and Memory Specificity in Adolescents and Adults with Histories of Child Sexual Abuse' (2016) 24(8) *Memory* 1078.

³⁸⁴ Kathleen A Kendall-Tackett, Linda A Williams and David Finkelhor, 'Impact of Sexual Abuse on Children: A Review and Synthesis of Recent Empirical Studies' (1993) 113(1) *Psychological Bulletin* 164.

³⁸⁵ Derrick Silove et al, 'The Contribution of Gender-based Violence and Network Trauma to Gender Differences in Post-Traumatic Stress Disorder' (2017) 12(2) *PLoS ONE* 1.

³⁸⁶ This 23-year, three-generational, cross-sequential longitudinal study included 84 abused participants in the greater Washington DC area and 83 non-abused participants. Penelope K Trickett, Jennie G Noll and Frank W Putnam, 'The Impact of Sexual Abuse on Female Development: Lessons from a Multigenerational, Longitudinal Research Study' (2011) 23(2) *Development and Psychopathology* 453, 468.

³⁸⁷ Ulrich Schnyder, 'Culture-Sensitive Psychotraumatology' (2016) 7 *European Journal of Psychotraumatology* (article 311790).

³⁸⁸ *Ibid.*

³⁸⁹ Mark L Howe, 'Memory Development: Implications for Adults Recalling Childhood Experiences in the Courtroom' (2013) 14(12) *Nature Reviews* 869, 684.

In this section, we first discuss research on children’s memory, and then research with university students and adults about memories of childhood events. Where comparative samples included both children and adults, we discuss all study outcomes in the section on children’s memory.

6.3 Effects of trauma on non-abuse memories

Due to the verbal focus of investigative and judicial processes, some developmental research has highlighted that younger children may still predominantly encode memories of events in a non-verbal manner while their verbal abilities are developing.³⁹⁰ These results challenge the assumption that details are encoded verbally from the outset. Traditional methods of assessing and evaluating complaint narratives need to accommodate encoding specificity to include non-verbal memories.

Children’s knowledge and understanding of emotions is linked to the quality of their parents’ discussions with them about the causes of emotion.³⁹¹ Explicit attempts to instruct mothers on the value of mother–child reminiscing about autobiographical memory (which includes using ‘who, what, when, where and how’ questions, discussing emotions they have experienced and urging them to provide detailed descriptions of events) yielded memory improvements in children, as well as greater social skills, self-understanding and knowledge of the antecedents of emotion.³⁹² Mother–child reminiscing, particularly high-quality maternal elaboration, increases the specificity of children’s independent memory.³⁹³ Related research showed that the quality of mother–child reminiscence in maltreating mothers was impaired.³⁹⁴ Arguably, the children of maltreating mothers would consequently have lower memory specificity for past events.³⁹⁵

³⁹⁰ Gabrielle Simcock and Harlene Hayne, ‘Age-related Changes in Verbal and Nonverbal Memory During Early Childhood’ (2003) 39(5) *Developmental Psychology* 805.

³⁹¹ Penny van Bergen, ‘The Association Between Parent-Child Reminiscing on Children’s Development of Autobiographical Memory and Emotion Knowledge’ (PhD thesis, University of New South Wales, 2007); Penny van Bergen et al, ‘The Effects of Mother Training in Emotion-Rich, Elaborative Reminiscing on Children’s Shared Recall and Emotion Knowledge’ (2009) 10(3) *Journal of Cognition and Development* 162; Karen Salmon and Elaine Reese, ‘Talking (or not Talking) About the Past: The Influence of Parent-child Conversation About Negative Experiences on Children’s Memories’ (2015) 29(6) *Applied Cognitive Psychology, Special Issue* 791; Penny Wareham and Karen Salmon, ‘Mother-Child Reminiscing About Everyday Experiences: Implications for Psychological Interventions in the Preschool Years’ (2006) 26(5) *Clinical Psychology Review* 535.

³⁹² Ibid.

³⁹³ Penny van Bergen, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 42, lines 21–41.

³⁹⁴ Kristin Valentino and Christina G McDonnell, ‘Distinguishing between Traumatic and Non-Traumatic Memory: A Commentary on Reminiscing and Child Maltreatment’ (2015) 29(6) *Applied Cognitive Psychology* 802.

³⁹⁵ Ibid.

Eyewitness studies of stressful and traumatic events

Some important effects of high stress on the encoding of event memory were reported in a meta-analysis of children's and adults' eyewitness memory.³⁹⁶ The events in issue involved active participation (for example, venipuncture, inoculations, dental appointments, immunisations) or live observations (for example, a staged crime or demonstration of venipuncture, or a visit by a stranger to a preschool). These events caused the participants to experience cognitive anxiety and physiological activation. The results revealed that when recalling details of the events, children's episodic memory was the same with and without stress, whereas adults' recall performance in situations of high stress decreased significantly.³⁹⁷ Specifically, children's responses to interrogative questions were not affected by stress. Thus, the accuracy of what children recalled under situations of high stress was not compromised.

These results were replicated in studies conducted with younger children, showing they had better recall following the encoding of negatively stressful, rather than neutral or positive, events. Children were better at recalling stories with a positive or negative emotional value than neutral stories, and were better at recalling stories with a negative rather than a positive emotional value.³⁹⁸ In some studies, the level of stress experienced was assessed individually with heart-rate monitors.³⁹⁹ Heart-rate increases during encoding were associated with elevated memory performance, while heart-rate increases at retrieval were unrelated to memory performance when children were questioned in a supportive manner.⁴⁰⁰

Some experimental research on avoidant coping styles at the time of encoding assessed the impact of these coping styles on memory for stressful events. For example, in one study,

³⁹⁶ This meta-analysis covered 1,946 participants and 36 tests of effect sizes derived from 13 children's studies and 23 adult studies. Kenneth A Deffenbacher et al, 'A Meta-Analytic Review of the Effects of High Stress on Eyewitness Memory' (2004) 28(6) *Law and Human Behavior* 687. Note that the results of the first reported meta-analysis on facial recognition accuracy are omitted since facial identification is not often in issue in child sexual abuse cases.

³⁹⁷ Ibid.

³⁹⁸ Children aged 5-6 years were asked to recall positive, neutral and negatively valenced stories: Penny van Bergen, Jacqui Wall and Karen Salmon, 'The Good, the Bad, and the Neutral: The Influence of Emotional Valence on Young Children's Recall' (2015) 4(1) *Journal of Applied Research in Memory and Cognition* 29.

³⁹⁹ For example, the effect on memory of stress at the time of encoding was tested in child participants aged 5-6 who viewed a fear-inducing film excerpt from the movie *Stand By Me*, which depicted children crossing train tracks and just beating an oncoming train. Increased heart rate at the time of encoding was associated with fewer incorrect responses: Jodi A Quas and Heather C Lench, 'Arousal at Encoding, Arousal at Retrieval, Interviewer Support, and Children's Memory for a Mild Stressor' (2007) 21(3) *Applied Cognitive Psychology* 289.

⁴⁰⁰ Ibid. At least on the direct or cued recall questions about details of an observed film.

participants were directed to use thought suppression, emotional inhibition and affect regulation.⁴⁰¹ These techniques neither improved nor decreased recall.⁴⁰²

Together, the results of the experimental research in which children were exposed to stressful and emotionally evocative events, both as participants and observers, showed that their memory was unaffected in terms of accuracy; however, they recalled less in highly stressful situations.

Analogue studies of stressful and traumatic events

Numerous studies examining the impact of real-life trauma on the encoding of memory have found that trauma does not impair children's memory, such that they can have robust and enduring memories of traumatic experiences. The main outcomes were that children had apparently sound and extensive recall following experiences of trauma.⁴⁰³ Children's memory for traumatic life events in which they were directly involved was the same as for other distinctive personally significant events, and better than their memory for ordinary life events.⁴⁰⁴ In some studies where the child experienced higher levels of distress, the results of memory tests yielded less extensive recall of information, although what was recalled was well retained.⁴⁰⁵ In other studies, distinctive events that involved pain were recalled better than those without pain.⁴⁰⁶ Many of these studies involved children whose physical injuries required hospitalisation. Examples of this research were discussed in Chapter 5.

Field studies of PTSD and ASD effects on non-abuse memories

The impact of PTSD and ASD on autobiographical memory has been studied in the context of recovery from personal injuries and natural disasters. A hospital injury study involving child patients⁴⁰⁷ who had witnessed, or been involved in, a potentially distressing or traumatic

⁴⁰¹ In this study, 51 students watched a clip from the *Texas Chainsaw Massacre* movie that depicted a psychopathic killer skinning a victim alive (in view of the victim's girlfriend). Sang Quang Phung and Richard A Bryant, 'The Influence of Cognitive and Emotional Suppression on Overgeneral Autobiographical Memory Retrieval' (2013) 22(3) *Consciousness and Cognition* 965.

⁴⁰² Ibid.

⁴⁰³ Deirdre A Brown, Karen Salmon, and Margaret-Ellen Pipe, 'Children's Recall of Medical Experiences: The Impact of Stress' (1999) 23(3) *Child Abuse and Neglect* 209; Karen Salmon, Melinda Price and John Kieran Pereira, 'Factors Associated with Young Children's Long-Term Recall of an Invasive Medical Procedure: A Preliminary Investigation' (2002) 23(5) *Journal of Developmental & Behavioral Pediatrics* 347.

⁴⁰⁴ Mark L Howe 'Children's Memory for Traumatic Experiences' (1997) 9(2) *Learning and Individual Differences* 153.

⁴⁰⁵ Carole Peterson and Kelly L Warren, 'Injuries, Emergency Rooms and Children's Memory' in Jodi Quas and Robyn Fivush (eds), *Emotion in Memory and Development: Biological, Cognitive and Social Considerations* (Oxford University Press, 2009).

⁴⁰⁶ Daniel Reisberg, *The Science of Perception and Memory: A Pragmatic Guide for the Justice System* (Oxford University Press, 2014) 257.

⁴⁰⁷ This study involved a sample of 67 child patients who were aged between seven and 16.

event (but who had not lost consciousness) found one measure of fragmentation⁴⁰⁸ was causally related to symptom presence and coping or adjustment style.⁴⁰⁹

One study examined the fragmentation of memories of traumatic childhood experiences following the expression of trauma symptoms by recruiting children⁴¹⁰ from the emergency department or paediatric inpatient ward of two Australian metropolitan hospitals.⁴¹¹ Children who had not lost consciousness during the traumatic experience were assessed for acute trauma and trauma symptomology, intrusive memories, depression, fear, pain and injury severity, and the quality of their autobiographical memories.⁴¹² Analyses revealed greater memory fragmentation correlated with fear and pain, and with a range of ASD symptoms, supporting the view that peritraumatic encoding strategies (related to coping strategies of dissociation and avoidance) interfere with the depth of traumatic memory processing, creating more fragmented memories and leading to intrusive memories. Any memory consists of samples of specific details about an event and includes gaps, but a memory of an event experienced as traumatic is likely to be more fragmented.

PTSD symptoms can include intrusive memories. An fMRI scanning study that examined the neural basis for intrusive memories suggested that rather than being related to deficits in visual processing while encoding the traumatic memory, intrusive memories seem to arise from changes in suppression and inhibitory memory processes related to the formation and

⁴⁰⁸ Richard Meiser-Stedman et al, 'The Trauma Memory Quality Questionnaire: Preliminary Development and Validation of a Measure of Trauma Memory Characteristics for Children and Adolescents' (2007) 15(3) *Memory* 271.

⁴⁰⁹ A memory test and a measure of Acute Stress Disorder symptomology were administered within four weeks of admission. Another memory test and a measure of PTSD symptomology were administered between four and eight weeks after the injury. Anna McKinnon et al, 'Trauma Memory Characteristics and the Development of Acute Stress Disorder and Post-Traumatic Stress Disorder in Youth' (2017) 54 *Journal of Behavior Therapy and Experimental Psychiatry* 112.

⁴¹⁰ Sample of 75 children aged between seven and 16.

⁴¹¹ Most children in the sample suffered injuries from general accidents, followed by sports injuries, motor vehicle accidents and burns. Anna C McKinnon, Reginald D V Nixon and Neil Brewer, 'The Influence of Data-Driven Processing on Perceptions of Memory Quality and Intrusive Symptoms in Children Following Traumatic Events' (2008) 46(6) *Behaviour Research and Therapy* 766.

⁴¹² This assessment used the 11-item scale in the Trauma Memory Quality Questionnaire (TMQQ), which refers to the visual quality, non-visual sensory qualities, temporal context and verbal accessibility of trauma memories, and the Child Data-Driven Processing Questionnaire (CDDPQ), which measures the shallowness or data-driven nature of the apparent memory features. Richard Meiser-Stedman et al, 'The Trauma Memory Quality Questionnaire: Preliminary Development and Validation of a Measure of Trauma Memory Characteristics for Children and Adolescents' (2007) 15(3) *Memory* 271; Anna C McKinnon, Reginald D V Nixon and Neil Brewer, 'The Influence of Data-Driven Processing on Perceptions of Memory Quality and Intrusive Symptoms in Children Following Traumatic Events' (2008) 46(6) *Behaviour Research and Therapy* 766.

experience of memories after encoding. In other words, this PTSD symptom may reflect retention and retrieval system processes rather than an encoding issue.⁴¹³

In another study, child victims⁴¹⁴ of the Indian Ocean tsunami were interviewed five years after it hit Aceh, Indonesia.⁴¹⁵ An assessment⁴¹⁶ revealed that 48 per cent of these child victims had a high probability of being diagnosed with PTSD due to reports of intrusive memories and avoidance behaviours. The results also showed that one-third of trauma memories were reconstructed. These memories had been compiled from others' reports of the event; they did not come from victims viewing the event from a direct or indirect vantage point, or from an out-of-body observer perspective.⁴¹⁷ The researchers speculated that the reconstructive nature of these traumatic autobiographical memories may be the result of the child victims not being able to encode the memories effectively at the time of the event due to their age. One clear gender difference reported in this study was that girls were 15 times more likely than boys to recall the tsunami directly. Boys who reported adopting the observer perspective displayed lower PTSD severity and less severe stress reactions.

A study of American military veterans⁴¹⁸ found differences in their autobiographical memory features depending on whether they had or had not developed clinically diagnosable PTSD.⁴¹⁹ Compared to veterans who did not develop PTSD, those with PTSD symptoms had autobiographical memories with degraded levels of specificity and overgeneralised autobiographical memories (that is, memories without any specific details, or statements about the past that were not descriptions of autobiographical events).⁴²⁰

Victims of traumatic experiences who have PTSD and use avoidant coping strategies can be protected from recalling the upsetting specific details of a traumatic memory by retrieving overgeneralised autobiographical memories. However, the study referred to above found

⁴¹³ Eva Battaglini et al, 'Intrusive Memories of Distressing Information: An fMRI Study' (2016) 11(9) *PLoS ONE* 1.

⁴¹⁴ Sample of 110 child survivors aged between seven and 13.

⁴¹⁵ Katie S Dawson and Richard A Bryant, 'Children's Vantage Point of Recalling Traumatic Events' (2016) 11(9) *PLoS ONE* 1.

⁴¹⁶ The Children's Revised Impact of Event Scale-13 (CRIES-13), a 13-item measure of PTSD symptomology: Children and War Foundation, *CRIES-13* (2005).

⁴¹⁷ Survivors were asked to describe their experiences on the day of the tsunami, and also to describe what vantage point their memories seemed to be from (that is, through their own eyes ('direct') or as if they were a spectator or onlooker ('indirect'), or both). Survivors were also asked how often they had heard stories of the tsunami from others ('second-hand reports') since it hit.

⁴¹⁸ Sample of 28 veterans aged between 19 and 50. Participants were asked to generate autobiographical memories or future simulations in response to neutral word cues, a modified version of a task used in brain imaging studies of autobiographical memory.

⁴¹⁹ Adam D Brown et al, 'Overgeneralized Autobiographical Memory and Future Thinking in Combat Veterans with Posttraumatic Stress Disorder' (2013) 44(1) *Journal of Behavioural Therapy and Experimental Psychiatry* 129.

⁴²⁰ *Ibid.*

that the memories of veterans suffering from PTSD were qualitatively different from those of veterans who did not have PTSD symptoms. After returning from their deployments, veterans who developed PTSD were more likely to incorporate content associated with negative combat experiences when remembering the past or thinking about the future. This demonstrates that PTSD sufferers show increased memory access for *negative* past events relative to non-PTSD sufferers.

Despite research that links the fragmentation of autobiographical memory to clinical symptoms of trauma, more recent reviews of research on dissociative encoding producing fragmentation emphasise individual variability in the fragmentation of memory resulting from trauma⁴²¹, as well as in the treatment of fragmentation as part of PTSD recovery.⁴²² This emerging research underscores the need for individual assessment. It is not enough to simply assume that a trauma survivor will inevitably have a fragmented set of autobiographical memories of that event.

To better understand the ways in which negative stress and traumatic events can influence memory in cases of child sexual abuse, it is helpful to consider when a victim may experience emotional arousal, stress or trauma, including (1) at the time of the abusive event (that is, the time of the memory encoding); (2) during the period after the event but before a forensic interview (that is, retention); and (3) at the time of the interview or during questioning in court (that is, retrieval). Accordingly, the next sections of this chapter discuss studies on the effects of negative stress on memory at each of these three stages.

6.4 Effects of trauma on encoding of child sexual abuse memories

Trauma that results in mental disorders, whether caused by child sexual abuse or some other source, can impair autobiographical and event memory. If a victim experiences trauma during an abusive event, encoding may be disrupted, leading to sparse information coding and fragmented memories. Because sparsely encoded information is not recalled as well as more densely encoded information, children, and particularly young children, are likely to forget details of events rapidly.

⁴²¹ Michele Bedard-Gilligan and Lori A Zoellner, 'Dissociation and Memory Fragmentation in Posttraumatic Stress Disorder: An Evaluation of the Dissociative Encoding Hypothesis' (2012) 20(3) *Memory* 277.

⁴²² Michele Bedard-Gilligan, Lori A Zoellner and Norah Feeny, 'Is Trauma Memory Special? Trauma Narrative Fragmentation in PTSD: Effects of Treatment and Response' (2017) 5(2) *Clinical Psychological Science* 212.

In some studies of adolescent and adult victims of child sexual abuse, the severity of the abuse experience at the time of encoding did not predict greater or lesser recall specificity⁴²³, but it did predict greater memory accuracy and fewer errors.⁴²⁴

As was discussed in Chapter 5, it is possible, temporarily, to entirely forget an experience of child sexual abuse or aspects of the abuse. Dissociation and complete forgetting⁴²⁵ were significant among a sample of victims whose age at the onset of abuse was in early childhood.⁴²⁶ The abuse may have been so severe that stress interfered with the encoding and recall of these experiences.

Research that used technologies to track changes in neural structure flowing from experiences of abuse⁴²⁷ found that the age at the onset of abuse, not the severity of the abuse *per se*, was associated with severe cortical thinning in brain areas associated with autobiographical memory.⁴²⁸ A review of this research concluded that a neuroanatomical basis exists for the poor recollection of specific features of child sexual abuse events. More extreme neuroanatomical changes have been noted in cases of persistent child sexual abuse.⁴²⁹ Evidence of a physiological basis for the absence of memories about specific details also comes from fMRI studies involving adult and child victims; these studies found that

⁴²³ This study included 93 adolescents and adults aged 14–37, both with and without past experiences of child sexual abuse. Latonya Harris, Stephanie D Block, Christin M Ogle, et al, 'Coping Style and Memory Specificity in Adolescents and Adults with Histories of Child Sexual Abuse' (2016) 24(8) *Memory* 1078.

⁴²⁴ Participants aged 16–30 all had experience of legal proceedings as victims in cases of child sexual abuse. Jodi A Quas et al, 'Long-Term Autobiographical Memory for Legal Involvement: Individual and Sociocontextual Predictors' (2010) 25(4) *Cognitive Development* 394; Participants were volunteer male university students aged 18–28. Lauren A Monds et al, 'Individual Differences in Susceptibility to False Memories for Neutral and Trauma-Related Words' (2013) 20(3) *Psychiatry, Psychology, and Law* 399.

⁴²⁵ Participants were child sexual abuse survivors aged 31–69. Heather B MacIntosh, Kara Fletcher, and Delphine Collin-Vézina, "'As Time Went on, I Just Forgot About It": Thematic Analysis of Spontaneous Disclosures of Recovered Memories of Childhood Sexual Abuse' (2016) 25(1) *Journal of Child Sexual Abuse* 56; Nadia Wager, 'Psychogenic Amnesia for Childhood Sexual Abuse and Risk for Sexual Revictimisation in both Adolescence and Adulthood' (2012) 12(3) *Sex Education* 331.

⁴²⁶ Participants were aged between 17 and 60, and had experience of child sexual abuse, physical abuse and/or other trauma. Bette L Bottoms et al, 'Trauma Severity and Defensive Emotion-Regulation Reactions as Predictors of Forgetting Childhood Trauma' (2012) 13(3) *Journal of Trauma and Dissociation* 291.

⁴²⁷ Benno Roozendaal, Bruce S McEwan and Sumantra Chattarji, 'Stress, Memory and the Amygdala' (2009) 10(6) *Nature Reviews Neuroscience* 423; Igor Sotgiu and Christian Mormont, 'Similarities and Differences Between Traumatic and Emotional Memories: Review and Directions for Future Research' (2008) 142(5) *The Journal of Psychology* 449; Igor Sotgiu and Maria Luisa Rusconi, 'Why Autobiographical Memories for Traumatic and Emotional Events Might Differ: Theoretical Arguments and Empirical Evidence' (2014) 148(5) *The Journal of Psychology* 523.

⁴²⁸ Maria A Oquendo, Jeffrey M Miller and M Elizabeth Sublette, 'Neuroanatomical Correlates of Childhood Sexual Abuse: Identifying Biological Substrates for Environmental Effects on Clinical Phenotypes' (2013) 170(6) *American Journal of Psychiatry* 574.

⁴²⁹ *Ibid.*

cortical adaptations in the brain prevent a child from engaging in relevant sensory processing.⁴³⁰

6.5 Effects of trauma on retention of child sexual abuse memories

Some researchers have highlighted the need to expect forgetting and developmental changes in forgetting in response to traumatic autobiographical memories.⁴³¹ Furthermore, during the memory retention period, avoidant forms of coping after exposure to child sexual abuse have been associated with reduced autobiographical memory specificity in adolescence and adulthood.⁴³² There are a number of understandable personal motives for adopting avoidant coping styles, including protecting oneself from traumatic intrusive memories by deliberately ‘crowding out’ painful negative memories and focusing instead on more positive ones. This phenomenon is relevant to memories of child sexual abuse, especially in cases where the perpetrator is a close family member – such as a parent or relative or family friend – and/or the abuse involves the betrayal of trust and the misuse of a position of authority.

In the presence of mental disorders, the consolidation of emotional or traumatic information may be inhibited. In one study of avoidant coping strategies, participants with and without histories of child sexual abuse⁴³³ completed questionnaires that assessed dissociation experiences, PTSD and other trauma symptoms, and the severity of the abuse experienced. They also completed a separate questionnaire about coping.⁴³⁴ Following this, participants were interviewed about their autobiographical memories. The results showed that avoidant coping was associated with reduced autobiographical memory specificity.⁴³⁵ A lack of

⁴³⁰ This study included a sample of 51 women aged 18–45 who had or had not experienced child sexual abuse. Christine M Heim et al, ‘Decreased Cortical Representation of Genital Somatosensory Field after Childhood Sexual Abuse’ (2013) 170(6) *American Journal of Psychiatry* 616.

⁴³¹ Patricia J Bauer, ‘Development of Episodic and Autobiographical Memory: The Importance of Remembering Forgetting’ (2015) 38 *Developmental Review* 146.

⁴³² Latonya S Harris et al, ‘Children’s Resistance to Suggestion’ in Kathryn Kuehnle and Mary Connell (eds), *The Evaluation of Child Sexual Abuse Allegations* (John Wiley & Sons, 2009) 181.

⁴³³ In this study, 48 participants (aged 14–37) with histories of child sexual abuse were compared to 45 participants (aged 14–31) with no known child sexual abuse history. Latonya Harris et al, ‘Coping Style and Memory Specificity in Adolescents and Adults with Histories of Child Sexual Abuse’ (2016) 24(8) *Memory* 1078.

⁴³⁴ This study used the 66-item Ways of Coping questionnaire. Susan Folkman and Richard S Lazarus, *Ways of Coping Questionnaire: Research edition* (Consulting Psychologists Press, 2007).

⁴³⁵ Using the semi-structured Autobiographical Memory Interview protocol; Michael D Kopelman, B A Wilson and Alan D Baddeley, ‘The Autobiographical Memory Interview: A New Assessment of Autobiographical and Personal Semantic Memory in Amnesic Patients’ (1989) 11(5) *Journal of Clinical and Experimental Neuropsychology* 724.

specificity in memory has also been observed among individuals who used avoidant coping mechanisms irrespective of the memory retention period.⁴³⁶

In one laboratory study involving non-abused teenagers, researchers found that adolescent boys exposed to pressured secrecy experienced negative stress, while girls experienced more severe depression and anxiety symptoms.⁴³⁷ This research may generalise to situations where perpetrators demand that victims keep the abuse secret, impacting the experience of victims during the period of memory consolidation.

6.6 Effects of trauma on retrieval of child sexual abuse memories

Retrieval prior to trial

In the absence of mental disorders, children and adults generally can accurately recall traumatic and negatively stressful personal life events. However, ASD or PTSD following child sexual abuse can cause deficits in autobiographical memory, depending on the severity of the symptoms.⁴³⁸ Evidence of autobiographical memory dysfunction following child abuse was confirmed in a longitudinal study of the memories of child, adolescent and adult survivors of family violence (14 per cent of participants had also experienced sexual abuse). The study found that adolescent exposure to family trauma resulted in abbreviated, fragmented and over-general memories.⁴³⁹

Memory deficits that appear in adolescence are offset by the attachment style of mothers and the avoidance of attachment that can follow abuse experiences. These atypical processes occur at retrieval, not encoding. Adolescent survivors of child sexual abuse can experience autobiographical memory dysfunction, including overly general and short memories, and poor event memory retrieval.

⁴³⁶ Latonya S Harris et al, 'Children's Resistance to Suggestion' in Kathryn Kuehnle and Mary Connell (eds), *The Evaluation of Child Sexual Abuse Allegations* (John Wiley & Sons, 2009) 181–202; Catherine B Gittins, Helen M Paterson and Louise Sharpe, 'How Does Immediate Recall of a Stressful Event Affect Psychological Response To It?' (2015) 46 *Journal of Behavior Therapy and Experimental Psychiatry* 19.

⁴³⁷ Pressured secrecy was measured by the Pressured Information Management Scale. Participants were aged between 12 and 17. Josephine Kearney and Kay Bussey, 'The Impact of Pressured Information Management on Boys' and Girls' Psychological Functioning' (2014) 35(3) *Journal of Applied Developmental Psychology* 234.

⁴³⁸ Laura Jobson et al, 'Culture and the Remembering of Trauma' (2014) 2(6) *Clinical Psychological Science* 698.

⁴³⁹ Data was collected during an initial assessment when children were aged between six and 12, and again at a follow-up assessment when participants were aged between 12 and 18. The initial assessment evaluated 363 mother-child dyads, with 296 of these were retained for a six-year follow-up assessment. Both the mothers and children were questioned about sexual abuse and exposure to other abuse or aggression. Andrea Follmer Greenhoot et al, 'Stress and Autobiographical Memory Functioning' in Jodi Quas and Robyn Fivush (eds), *Emotion in Memory and Development: Biological, Cognitive and Social Considerations* (Oxford University Press, 2009), 97.

People who adopt avoidant coping styles after subjectively traumatic experiences are prone to more memory fragmentation and superficial recall for personal life events. For example, adolescent child sexual assault victims with more severe PTSD symptoms had higher rates of false memory on wordlist tasks (but not on memory related to their abuse) than did victims with less severe PTSD symptoms and non-victims with severe PTSD symptoms.⁴⁴⁰ Adolescents with higher PTSD scores and fearful–avoidant attachment styles were less accurate at recall and recognition tasks using wordlists related to child sexual abuse.⁴⁴¹

Some studies found that adolescents and adults who had PTSD symptoms and a history of child sexual abuse displayed heightened memory specificity. This again highlights the need for case-by-case and individual-level assessments of complainants who have been diagnosed with trauma conditions after experiencing abuse.⁴⁴²

PTSD research has also shown that the presence of additional and acute stress during periods of retrieval plays a central role in reactivating intrusive memories that block individuals' ability to deliberately recall the desired aspects of autobiographical memory in free-recall tasks.⁴⁴³ Researchers have suggested that this effect and the maintenance of cycles of intrusive memories may be caused by the release of cortisol in response to the additional stressors.⁴⁴⁴

People diagnosed with stress disorders and betrayal anger often experience negative intrusive memories that may block access to memories of personal life events and verbal memory, even when asked free-recall questions. Some studies have shown that the presence of anger, which often results from perceived betrayal within a trauma narrative, can decrease the specificity of contextual autobiographical memory detail retrieved. One explanation was that rumination behaviours prevent cognitive access to memory detail.⁴⁴⁵

Overall, research has shown that adults tend to have enduring and accurate memories of traumatic or negatively stressful events, even if some traumatic events are subject to ordinary

⁴⁴⁰ This study included a sample of 49 female adolescents aged between 14 and 17, and 44 women aged between 18 and 37. Of the participants, 25 adolescents and 22 adults had histories of child sexual abuse. Gail S Goodman et al, 'False Memory for Trauma-Related Deese-Roediger-McDermott Lists in Adolescents and Adults with Histories of Child Sexual Abuse' (2011) 23(2) *Development and Psychopathology* 423.

⁴⁴¹ Ibid.

⁴⁴² This study included a sample of 49 adolescents aged between 14 and 17, and 36 adults aged between 18 and 37. Of the 49 adolescents, 25 had histories of child sexual abuse while the other 24 were 'no child sexual abuse' controls. Of the 36 adults, 19 had histories of child sexual abuse, while the other 17 did not. Christin M Ogle et al, 'Autobiographical Memory Specificity in Child Sexual Abuse Victims' (2013) 25(2) *Development and Psychopathology* 321.

⁴⁴³ Jessica Cheung, Benjamin Garber and Richard A Bryant, 'The Role of Stress during Memory Reactivation on Intrusive Memories' (2015) 123 *Neurobiology of Learning and Memory* 28.

⁴⁴⁴ In this study, participants submerged their forearms in ice-cold water (0–4 degrees Celsius) for three minutes during a memory retrieval period after having watched a video of a real-life motor vehicle accident.

⁴⁴⁵ Courtney Welton-Mitchell, 'Associations Between Thematic Content and Memory Detail in Trauma Narratives' (2013) 27(4) *Applied Cognitive Psychology* 462.

forgetting.⁴⁴⁶ Adult victims whose childhood experiences were more uncomfortable than traumatic may have forgotten them completely or only realised in adulthood that they were sexually inappropriate or abusive.⁴⁴⁷

Experiencing PTSD symptoms, in addition to mere exposure to maltreatment without developing PTSD symptomology, can also produce verbal memory deficits.⁴⁴⁸ A recent review⁴⁴⁹ concluded that in many prior studies of the memory of abused individuals, the results were undermined by a failure to understand psychiatric comorbidity and its impact on autobiographical memory. In three studies in which these effects were separated, the results showed that verbal memory deficits appeared to be specific to experiencing PTSD symptomology, and were not attributable to abuse *per se*.

Some researchers have emphasised that the narratives of child sexual abuse retrieved in adulthood can range from being quite sparse to quite detailed.⁴⁵⁰ Exposure to childhood trauma can lead to over-general memories and reduced autobiographical recall specificity in adults. Abuse with a longer duration and higher severity results in less recall.⁴⁵¹ Victims who reported weak subjective memory of abuse (self-reported forgetting of abusive events) made fewer memory errors and typically experienced more severe forms of abuse.⁴⁵²

The influence of stress on retrieval at trial

Retrieval attempts that occur in the stressful context of the courtroom at trial may influence memory. For example, in one study, children's memory for the details of a stage play

⁴⁴⁶ Cara Laney and Elizabeth Loftus, 'Traumatic Memories Are Not Necessarily Accurate Memories' (2005) 50(13) *Canadian Journal of Psychiatry* 823; Kathleen M Lalande and George A Bonanno, 'Retrospective Memory Bias for the Frequency of Potentially Traumatic Events: A Prospective Study' (2011) 3(2) *Psychological Trauma: Theory, Research, Practice, and Policy* 165; Heather B Macintosh, Kara Fletcher and Delphine Collin-Vézina, "'As Time Went On, I Just Forgot About It": Thematic Analysis of Spontaneous Disclosures of Recovered Memories of Childhood Sexual Abuse' (2016) 25(1) *Journal of Child Sexual Abuse* 56.

⁴⁴⁷ Richard J McNally and Elke Geraerts, 'A New Solution to the Recovered Memory Debate' (2009) 4(2) *Perspectives on Psychological Science* 126.

⁴⁴⁸ Heledd Hart and Katya Rubia, 'Neuroimaging of Child Abuse: A Critical Review' (2012) 6(52) *Frontiers in Human Neuroscience* 1.

⁴⁴⁹ *Ibid.*

⁴⁵⁰ Mark L Howe, 'Memory Development: Implications for Adults Recalling Childhood Experiences in the Courtroom' (2013) 14(12) *Nature Reviews* 869.

⁴⁵¹ Andrea Follmer Greenhoot et al, 'Stress and Autobiographical Memory Functioning' in Jodi Quas and Robyn Fivush (eds), *Emotion in Memory and Development: Biological, Cognitive and Social Considerations* (Oxford University Press, 2009).

⁴⁵² Simona Ghetti et al, 'What Can Subjective Forgetting Tell Us about Memory for Childhood Trauma?' (2006) 34(5) *Memory & Cognition* 1011.

previously observed in a familiar and comfortable classroom environment was less accurate when they viewed it in an unfamiliar and fear-inducing courtroom.⁴⁵³

Cross-examination can be a clear source of stress for child complainants. Commentators have criticised the use of aggressive leading question techniques⁴⁵⁴, and experimental researchers have shown that child witnesses experience impaired memory performance when challenged under cross-examination; in some cases, this led them to recant central elements of their complaint.⁴⁵⁵ In addition to these memory performance issues, fairness concerns have also been raised about the cross-examination of child witnesses.⁴⁵⁶

It is possible to support a child witness during cross-examination by offering them a child communicator or intermediary – a professional in communicating with children. An intermediary can intervene when questions are asked in age-inappropriate language, and ensure that the language used accords with the assessment of the communication needs of a particular child complainant or child witness.⁴⁵⁷

⁴⁵³ This study involved 34 primary school students aged between eight and 10. Karen J Saywitz and Rebecca Nathanson, 'Children's Testimony and Perceived Stress in and out of the Courtroom' (1993) 17(5) *Child Abuse and Neglect* 613; in another study, 81 primary school students aged between eight and 10 participated in a staged event involving bodily touching and then had their memory of the event tested two weeks later. Rebecca Nathanson and Karen J Saywitz, 'The Effects of the Courtroom Context on Children's Memory and Anxiety' (2003) 31 *Journal of Psychiatry & Law* 67:

⁴⁵⁴ Kay Bussey, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 100, lines 3–29; 42–47; 101, lines 2–17.

⁴⁵⁵ In this study, 149 kindergarten (with a mean age of six) and Year 3 (with a mean age of 8 years 10 months) students participated in the staged events. Rhiannon Fogliati and Kay Bussey, 'The Effects of Cross-examination on Children's Reports of Neutral and Transgressive events' (2013) 19(2) *Legal and Criminological Psychology* 296; Rhiannon Fogliati and Kay Bussey, 'The Effects of Cross-Examination on Children's Coached Reports' (2015) 21(1) *Psychology, Public Policy and Law* 10.

⁴⁵⁶ This study used transcripts of evidence given by child sexual abuse complainants aged between six and 17. Emma Davies, Emily Henderson and Frederick W Seymour, 'In the Interests of Justice? The Cross-Examination of Child Complainants of Sexual Abuse in Criminal Proceedings' (1997) 4(2) *Psychiatry, Psychology, and Law* 217; in this study, transcripts were collected of all trials (65 in total) involving child witnesses that were heard between December 2008 to May 2009 in the High Court and District Courts in Auckland, Manukau, Wellington and Christchurch. Police officers and prosecutors filled out questionnaires on trials involving 71 child witnesses, including 55 complainants (52 alleged some form of sexual or physical crimes). Emma Davies, Emily Henderson and Kristen Hanna, 'Facilitating Children to Give Best Evidence: Are There Better Ways to Challenge Children's Testimony?' (2010) 34 *Criminal Law Journal* 347; this study was based on court transcripts of evidence from 18 children who testified as complainants or witnesses in physical and/or sexual abuse trials. The children were aged between eight and 15 at the time of the forensic interview (if any), and between nine and 17 at the time of the trial. Kristen Hanna et al, 'Questioning Child Witnesses in New Zealand's Criminal Justice System: Is Cross-Examination Fair?' (2012) 19(4) *Psychiatry, Psychology, and Law* 530; Emily Henderson, 'Best Evidence or Best Interests? What Does the Case Law Say about the Function of Criminal Cross-Examination?' (2016) 20(3) *The International Journal of Evidence and Proof* 183.

⁴⁵⁷ Martine B Powell et al, *An Evaluation of how Evidence is Elicited from Complainants of Child Sexual Abuse* (Royal Commission into Institutional Responses to Child Sexual Abuse, 2016); Royal Commission into

One large-scale evaluation of the use of intermediaries in investigative interviews and courts in the United Kingdom reported positive benefits from a range of stakeholder perspectives.⁴⁵⁸ The most negative reactions to the intermediary scheme were from people with the least experience of it, and from those with limited understanding of it.

A number of mock transcript and vignette studies have elaborated benefits and concerns relating to intermediary schemes in New Zealand⁴⁵⁹ and the United Kingdom.⁴⁶⁰ In the United Kingdom study, perceptions were tested of the appropriateness of language in a mock interview transcript (based on a real transcript) involving a six-year old female victim of child sexual abuse. Nineteen intermediaries and nine lawyers identified when questioning was appropriate or inappropriate. Considerable disparities emerged in the perceived appropriateness of questions. The researcher concluded that any intermediary system needed to manage not only the suitability of the language for the complainant, but also differential perceptions of language and reactions of lawyers or other criminal justice professionals to the interventions chosen by intermediaries, some of which may be motivated by misperceptions about memory. Future large-scale evaluation studies of the schemes operating in Western Australia, South Africa and New Zealand are needed. In 2007, the pilot phase of the scheme in the United Kingdom was evaluated positively, leading to recommendations that it be extended nationally.

Key points on the effects of emotion and trauma on memory

- Not all instances of child sexual abuse are subjectively experienced as traumatic at the time of the abuse. If during an abusive event, trauma is experienced, encoding may be disrupted, leading to sparsely encoded information and fragmentary memories. Because sparsely encoded information is not recalled as well as more densely encoded information, young children are more likely to forget details of an event rapidly. Any

Institutional Responses to Child Sexual Abuse, *Criminal Justice Consultation Paper*, (Commonwealth of Australia, 2016), 18, 39–40, 376–378.

⁴⁵⁸ Joyce Plotnikoff and Richard Woolfson, *The 'Go-between': Evaluation of Intermediary Pathfinder Projects* (Ministry of Justice, 2007); see also Brendan M O'Mahony, Jane Creaton, Kevin Smith and Rebecca Milne, 'Developing a Professional Identity in a New Work Environment: The Views of Defendant Intermediaries Working in the Criminal Courts' (2016) 18(2) *Journal of Forensic Practice* 155; Brendan M O'Mahony, Kevin Smith and Becky Milne (2011) 13(2) 'The Early Identification of Vulnerable Witnesses Prior to an Investigative Interview' *The British Journal of Forensic Science* 114; Brendan M O'Mahony 'The Emerging Role of the Registered Intermediary with the Vulnerable Witness and Offender: Facilitating Communication with the Police and Members of the Judiciary' (2010) 38(3) *British Journal of Learning Disabilities* 232; Brendan M O'Mahony, How Do Intermediaries Experience Their Role in Facilitating Communication for Vulnerable Defendants? (Thesis submitted for Doctor of Criminal Justice degree, University of Portsmouth, 5 March 2013).

⁴⁵⁹ Kirsten Hanna et al, 'Questioning Child Witnesses: Exploring the Benefits and Risks of Intermediary Models in New Zealand' (2013) 20(4) *Psychiatry, Psychology, and Law* 527.

⁴⁶⁰ Sarah Krähenbühl, 'Effective and Appropriate Communication with Children in Legal Proceedings According to Lawyers and Intermediaries' (2011) 20(6) *Child Abuse Review* 407.

memory consists of samples of specific details about an event and includes gaps, but a memory of an event experienced as traumatic is likely to be more fragmented. The stressful or traumatic nature of an event is not a good predictor of memory, however, as some studies suggest that individual responses to high stress can reduce the quality and quantity of recall.

- A number of studies show that in the absence of mental illness, children and adults generally have accurate recall for traumatic and negatively stressful personal life events. Although uncommon, it is possible to temporarily entirely forget an experience of child sexual abuse or aspects of the abuse.
- Studies of maltreated children have shown that children who experienced subjective trauma at the time of severe abuse are more likely to develop mental disorders. Mental disorders may inhibit consolidation of emotional or traumatic information. Trauma that results in mental illness, whether caused by child sexual abuse or some other source, can impair autobiographical and event memory. Adolescents who have experienced child sexual abuse can have autobiographical memory dysfunction, such as overly general and short memories, and poor event memory retrieval.
- People diagnosed with stress disorders and betrayal anger often experience negative intrusive memories that may block access to memories of personal life events and verbal memory, even when asked free-recall questions. People who adopt avoidant coping styles after subjectively traumatic experiences are prone to more memory fragmentation and superficial recall for personal life events.
- The ability to retrieve memories can be affected by stress or emotion. Trauma that results in mental disorders, whether caused by child sexual abuse or some other source, can impair autobiographical and event memory.
- Emotional distress, shame and fear experienced at the time of an interview or in court can overwhelm a witness and impair their ability to retrieve relevant memories.

Chapter 7

Memory for recurring events

Repeated incidents of abuse – as opposed to a single, one-off incident – account for at least half of the reported cases of child sexual abuse. Children’s memories of details that recur across numerous events tend to be stronger, and their reports of gist information and invariant features of repeated events are highly accurate. Memories for the gist and invariant features of repeated events are also resistant to error and misinformation. However, errors relating to specific occasions when variable or unique features of recurring events occurred are common. Children can indicate whether abuse took place more than once, but children and adults underestimate the frequency of recurring events. When using landmark events, such as birthdays or holidays, children typically interpret them prospectively, not retrospectively. Young children lack the skill to specify the time of an event, but can link events to familiar action patterns. Most research on children’s memories of recurring events has applied an eyewitness paradigm and these type of studies included activities for which the external or ecological validity might be low. Few field and analogue studies have analysed children’s reports of recurring and personally salient events.

In many cases of child sexual abuse, the complainant reports multiple abusive events committed by the perpetrator. This chapter focuses on the effects of recurring events on memory. The first part of this chapter examines the effects of recurring events on memory for specific details about a specific event in a series of recurring events; the second part focuses on the difficulties individuals, especially children, encounter when asked to report frequency and temporal information about recurring events.

7.1 Memory for recurring events of abuse

In recent years, increased research attention has been paid to children’s memories of recurring sexually abusive events. This research has evolved in response to greater awareness of the fact that cases involving a one-off or single incident of child sexual abuse between a perpetrator and a complainant are rare, whereas cases involving complainants who experience both multiple abusive events and multiple types of abusive acts are common. For example, a study of the number and type of abusive events perpetrated on child victims, as reported by 213 sex offenders who had a parental role in relation to their victims, revealed that only 8 per cent of offenders reported a single incident of sexual abuse.⁴⁶¹ A Canadian

⁴⁶¹ Jane Goodman-Delahunty, ‘Profiling Parental Child Sex Abuse’ (2014) 465 *Trends and Issues in Criminal Justice* 1.

national report suggested that at least half of all reported child sexual abuse cases involved more than one incident.⁴⁶²

In its consultation paper, the Royal Commission noted that cases involving the most extensive abuse are often the hardest to prosecute.⁴⁶³ It highlighted a recent decision by the South Australian Court of Criminal Appeal that overturned a conviction for the persistent sexual exploitation of a child who had been sexually assaulted ‘every week or so over a period of two years’ because the child was unable to differentiate one sexual assault from another.⁴⁶⁴ The court pointed to the ‘perverse paradox’ that applies to cases of ongoing or persistent child sexual abuse – namely, ‘the more extensive the sexual exploitation of a child, the more difficult it can be proving the offence’.⁴⁶⁵

The legal difficulty that arises in cases alleging recurring incidents of child sexual abuse is that child complainants are required to provide particular details of individual sexually abusive incidents from among a series of recurring events.⁴⁶⁶ Particularisation is important in framing a criminal charge and in allowing the perpetrator to prepare a defence to the precise charges. Thus, children are often asked to recall when, where and on which occasion certain events or actions occurred.⁴⁶⁷ Recalling specific details and temporal information about individual events is challenging for anyone who has experienced a series of recurring events. This is due to the development in memory of a script or schema for recurring events, as was described in Chapter 4. People remember and report the gist of what usually happened across a series of recurring events, but have difficulty delineating and differentiating the specific features of each individual event.⁴⁶⁸ Once a schema exists, the specific details of every instance of that type of experience may not be encoded or consolidated, and thus cannot be recalled. Given this feature of memory for recurring events, it is unsurprising that research has shown that children who reported multiple abusive events, compared to children who reported a single

⁴⁶² Public Health Agency of Canada, *Canadian Incidence Study of Reported Child Abuse and Neglect – 2008* (Public Health Agency of Canada, 2010).

⁴⁶³ Royal Commission into Institutional Responses to Child Sexual Abuse, *Criminal Justice Consultation Paper*, (Commonwealth of Australia, 2016), 176.

⁴⁶⁴ *R v Johnson* [2015] SASSCF 170.

⁴⁶⁵ *Ibid*, [2].

⁴⁶⁶ Heather L Price and Deborah A Connolly, ‘Children’s Recall of Emotionally Arousing, Repeated Events: A Review and Call for Further Investigation’ (2008) 31(4) *International Journal of Law and Psychiatry* 337.

⁴⁶⁷ Deborah A Connolly and D Stephen Lindsay, ‘The Influence of Suggestions on Children’s Reports of a Unique Experience Versus an Instance of a Repeated Experience’ (2001) 15(2) *Applied Cognitive Psychology* 205; *ibid*, 343; *S v R* (1989) 168 CLR 266; Kelly Richards, ‘Child complainants and the court process in Australia’ (2009) 380 *Trends & issues in crime and criminal justice* 1.

⁴⁶⁸ The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 2, 15.

incident, were perceived as less credible and competent witnesses, and were regarded as providing less consistent accounts.⁴⁶⁹

7.2 Memory for details of a particular event in a series

Recalling the particular features of one event in a series of recurring events requires individuals to recall memories of content (that is, features that occurred in the event) and the source or the location in time of the target event (that is, features that happened on the precise target occurrence).⁴⁷⁰ The ability to link features together and to a particular point in time increases with age. Individuals are not fully proficient at this task until adulthood.⁴⁷¹

Eyewitness studies of memory for recurring events

Irrespective of age, children who were exposed to recurring events in one study provided accurate descriptions of the invariant features (that is, details that occur in each occurrence) of those recurring events. As these types of features produce stable memory traces, they are typically strengthened and less susceptible to suggestion and decay, compared to the features of one-off incidents.⁴⁷² The invariant features become part of an individual's knowledge repertoire, script or schema⁴⁷³ or gist.

When questioned about the nature of repeated events, children will provide details from a script. Scripts do not link occurrences to particular moments in time.⁴⁷⁴ Even very young children develop script knowledge after only a small number of experiences of a repeated event. Children as young as three to five years old were able to remember invariant features accurately.⁴⁷⁵

Experiencing recurring events, as opposed to a single event, strengthens memory for invariant features, but the effect is reversed for variable features. 'Memories for details that recur consistently are more resistant to error and misinformation. And that's because there's no

⁴⁶⁹ Deborah A Connolly et al, 'Perceptions and Predictors of Children's Credibility of a Unique Event and an Instance of a Repeated Event' (2008) 32(1) *Law and Human Behavior* 92.

⁴⁷⁰ Ibid.

⁴⁷¹ Joshua K Lee et al, 'A Time and Place for Everything: Developmental Differences in the Building Blocks of Episodic Memory' (2016) 87(1) *Child Development* 194–210.

⁴⁷² Heather L Price and Deborah A Connolly, 'Children's Recall of Emotionally Arousing, Repeated Events: A Review and Call for Further Investigation' (2008) 31(4) *International Journal of Law and Psychiatry* 337.

⁴⁷³ M Rose Barlow, Kathy Pezdek and Iris Blandón-Gitlin, 'Trauma and Memory' in Steven N Gold et al (eds), *APA Handbook of Trauma Psychology* (American Psychological Association, 2017) volume 1, chapter 16, 1; Martine B Powell et al, 'The Effects of Repeated Experience on Children's Suggestibility' (1999) 35(6) *Developmental Psychology* 1462.

⁴⁷⁴ Teresa McCormack and Christoph Hoerl, 'Memory and Temporal Perspective: The Role of Temporal Frameworks in Memory Development' (1999) 19(1) *Developmental Review* 154.

⁴⁷⁵ Martine B Powell et al, 'The Effects of Repeated Experience on Children's Suggestibility' (1999) 35(6) *Developmental Psychology* 1462.

real need to make a source judgement, because it's reflecting more a general knowledge of what usually occurred'.⁴⁷⁶ Research has shown that children accurately report most invariant features that took place in all occurrences, but children also commonly incorrectly attributed variable features to the target occurrence.⁴⁷⁷ As time passes and events recurred, people tended to rely more on scripts for their memories.⁴⁷⁸ As variable features do not recur in each repeated event, they were not part of the script, and were thus more difficult to recall.⁴⁷⁹ Compared to children who experienced a single event, those who were exposed to recurring events had more difficulty describing a variable feature of the target occurrence. Although children from the recurring event group had more difficulty describing a variable feature of the target occurrence, they made fewer errors in reporting details that did not occur compared with children who experienced a single event.⁴⁸⁰ Overall, details about recurring events will often be remembered, but may be unrelated to particular moments in time, while recall of specific details about a particular recurring event in a series may not be possible or may be prone to error.

In one study involving a series of four repeated events, school-aged children were better able to recall unique features (that is, features that occurred once in the series of repeated events) and were better at correctly associating them with one of the four occurrences than were pre-schoolers. The researchers believed the accurate recall of the unique features was due to their distinctiveness from the invariant features in the general script. Recurring features with low frequency tended to be incorporated into the script, whereas unique features were not.⁴⁸¹ A participant at the roundtable convened by the Royal Commission indicated that 'in a sense, a distinctive aspect of an event that allows it to be quite distinguished from others, there isn't that problem. But when there's a similarity of events, [...] to be able to recall which

⁴⁷⁶ Martine B Powell, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 29, lines 4–8.

⁴⁷⁷ The events were referred to as the 'Aussie activities', which involved a set of 24 items for each occurrence, including 'listening to a story, doing a puzzle, having a rest, getting a surprise, and getting refreshed'. Martine B Powell et al, 'The Effects of Repeated Experience on Children's Suggestibility' (1999) 35(6) *Developmental Psychology* 1462.

⁴⁷⁸ Sonja P Brubacher, Martine B Powell and Kim P Roberts, 'Recommendations for Interviewing Children about Repeated Experiences' (2014) 20(3) *Psychology, Public Policy, and Law* 325.

⁴⁷⁹ Heather L Price and Deborah A Connolly, 'Children's Recall of Emotionally Arousing, Repeated Events: A Review and Call for Further Investigation' (2008) 31(4) *International Journal of Law and Psychiatry* 337.

⁴⁸⁰ Martine B Powell et al, 'The Effects of Repeated Experience on Children's Suggestibility' (1999) 35(6) *Developmental Psychology* 1462.

⁴⁸¹ Pre-school children's memories were examined after they were exposed to a repeated event in a laboratory setting. This involved repeated classroom events that were structured identically, but with some degree of variation about the activities and the items shown to the child participants. For instance, the variable item was a change in the story, while the high- or low-frequency activity was children receiving hand sanitiser or a fan. The new detail was a 'pop the fox' or 'noisy walrus'. Children were asked to talk about the event they remembered best. Sonja P Brubacher et al, 'Children's Ability to Recall Unique Aspects of One Occurrence of a Repeated Event' (2011) 25(3) *Applied Cognitive Psychology* 351.

happened where and when is extremely difficult. The source of an event is quite often difficult to identify.⁴⁸²

When the researchers examined the effect of children's age, they observed that older children were initially better able to differentiate particular occurrences among a series of recurring events than were younger children. However, after a delay of six weeks, these age differences in source monitoring disappeared.⁴⁸³ Other research has also confirmed that as children become older, they are better able to distinguish recurring events, and that delay affects all children, irrespective of age.⁴⁸⁴

The term 'source confusion', as used in these studies, requires further explanation. In the context of recurring events, 'source' is the particular occurrence or instance (from among a series of events) in which an activity occurred or a feature was present. In these studies, source confusion thus refers to the inability to attribute an activity or feature to one specific occurrence within that group of repeated events.⁴⁸⁵ Source confusion is more likely when the sources or different instances are highly similar. Source confusion has been claimed to be especially prevalent among younger children⁴⁸⁶, who may not yet have developed the source monitoring abilities of older children and adults. The term 'source monitoring' in these studies refers to the process by which individuals distinguish and recall selected features particular to a specific target occurrence.⁴⁸⁷ In other memory studies, source monitoring and source confusion refer to the ability to determine whether the source of information was one's own experience, something seen on television or a report from another person.⁴⁸⁸

Although children may find source monitoring more challenging than adults, laboratory studies have investigated conditions that may assist children in distinguishing between recurring event occurrences. The type and order of questions asked may influence the amount of information children provide when asked about a recurring event. In one study, children who were asked to describe what happened generally before they were asked about

⁴⁸² Donald M Thompson, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 29, lines 27–33.

⁴⁸³ Children in two age groups (four to five years old, and six to eight years old) were exposed to a series of six repeated events before being questioned about the sixth occurrence. Martine B Powell and Donald M Thomson, 'Children's Memory of an Occurrence of a Repeated Event: Effects of Age, Repetition, and Retention Interval Across Three Question Types' (1996) 67(5) *Child Development* 1988.

⁴⁸⁴ Jason J Dickinson, Debra A Poole and Rachel L Laimon, 'Children's Recall and Testimony' in *Psychology and Law: An Empirical Perspective*. (Guildford Press, 2005) 151.

⁴⁸⁵ Sonja P Brubacher and David La Rooy, 'Witness Recall Across Repeated Interviews in a Case of Repeated Abuse' (2014) 38(2) *Child Abuse & Neglect* 202.

⁴⁸⁶ Ibid.

⁴⁸⁷ Ibid.

⁴⁸⁸ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 1010.

a specific occurrence within a series of recurring events provided more information and were better able to distinguish one event from another than children who were asked the questions in the reverse order.⁴⁸⁹ In addition, children who gave a practice account of two different events from an unrelated series of recurring events recalled more information about a target event and more differences between event occurrences than children who gave a practice account of a one-off event.⁴⁹⁰

Some research has found that post-event misinformation about variable features of recurring events increases suggestibility in children⁴⁹¹, while other research has found that it has no detrimental effect.⁴⁹² This discrepancy could be due to how the children were asked to respond⁴⁹³, or how similar the misinformation was to the target feature, especially for older children.⁴⁹⁴ There is, however, consensus that children exposed to recurring events are less suggestible to misinformation about invariant features than children exposed to a single event.⁴⁹⁵

The research described above applied eyewitness event paradigms in which children were exposed to repeated classroom events ('Aussie activities' or 'Deakin activities') that included a number of invariant, variable and unique features. The recurring events included reading stories to the children, having children wear stickers with different themes, using different names for a koala and featuring different types of animals producing noises. Chapters 3 and 4 noted concerns about the low external and ecological validity of eyewitness event paradigms, which may limit their application to cases in which children experience recurring

⁴⁸⁹ Sonja P Brubacher, Kim P Roberts and Martine B Powell, 'Retrieval of Episodic Versus Generic Information: Does the Order of Recall Affect the Amount and Accuracy of Details Reported by Children about Repeated Events?' (2012) 48(1) *Developmental Psychology* 111.

⁴⁹⁰ Sonja P Brubacher, Kim P Roberts and Martine B Powell, 'Effects of Practicing Episodic Versus Scripted Recall On Children's Subsequent Narratives Of A Repeated Event' (2011) 17(2) *Psychology, Public Policy, and Law* 286.

⁴⁹¹ Deborah A Connolly and D Stephen Lindsay, 'The Influence of Suggestions on Children's Reports of a Unique Experience Versus an Instance of a Repeated Experience' (2001) 15(2) *Applied Cognitive Psychology* 205.

⁴⁹² Martine B Powell et al, 'The Effects of Repeated Experience on Children's Suggestibility' (1999) 35(6) *Developmental Psychology* 1462.

⁴⁹³ Martine B Powell and Kim P Roberts, 'The Effect of Repeated Experience on Children's Suggestibility Across Two Question Types' (2002) 16(4) *Applied Cognitive Psychology* 367.

⁴⁹⁴ Children in two age groups (four to five years old, and six to seven years old) participated in either a single event or repeated events. Two weeks later, misinformation was introduced that either was or was not highly associated with the target feature, and the following day children answered free- and cued-recall questions about the target play session. Deborah Connolly and Heather Price, 'Children's Suggestibility for an Instance of a Repeated Event Versus a Unique Event: The Effect of Degree of Association Between Variable Details' (2006) 93(3) *Journal of Experimental Child Psychology* 207.

⁴⁹⁵ Martine B Powell et al, 'The Effects of Repeated Experience on Children's Suggestibility' (1999) 35(6) *Developmental Psychology* 1462; Deborah A Connolly and D Stephen Lindsay, 'The Influence of Suggestions on Children's Reports of a Unique Experience Versus an Instance of a Repeated Experience' (2001) 15(2) *Applied Cognitive Psychology* 205.

sexually abusive events. For example, experiences which are accompanied by pain or discomfort may be more distinctive or salient – and therefore more memorable – than the variable or unique features of a story or game played in a safe and familiar classroom setting.

Analogue studies of memory for recurring events

Analogue studies of memory for recurring events are rare. One innovative study, which confirmed previous research findings, examined the effect of distress upon memory for recurring events.⁴⁹⁶ In the study, children who either were or were not anxious about water engaged in either one or four private swimming lessons. Children who had four swimming lessons had more difficulty discriminating between them and describing discrete occasions. Children who had a single lesson gave a more accurate report of the lesson than children who had four lessons. Children who had four lessons made mostly source or intrusion errors; that is, they accurately described features of the lessons but misattributed them to a particular target occurrence.

In another study, adults were interviewed about their visits to the dentist in the past 10 years. Participants were asked about the frequency of their dental visits and to talk about any one visit. Their responses were compared to their dental records. The participants were better able to recall details of visits that were considered ‘unpleasant’. The adults tended to underestimate the frequency of their dental visits.⁴⁹⁷ A history of more frequent dental visits did not increase the number of details reported, with the authors noting that ‘for every 10 visits experienced the respondents could refer to between 0.5 and 1.5 visits’.⁴⁹⁸

To our knowledge, no analogue studies exist involving exposure to recurring medical procedures. Studies of this kind would likely share more similarity with recurring child sexual abuse than the eyewitness paradigm studies.

Field studies of memory for recurring events

One case study examined a child victim who, across multiple investigative interviews, reported recurring sexually abusive events. The child reported mostly generic information and occasionally provided specific episodic details that related to one particular occurrence. The child also reported a few low variable and unique details of the events.⁴⁹⁹

⁴⁹⁶ Heather Price and Deborah Connolly, ‘Anxious and Nonanxious Children’s Recall of a Repeated or Unique Event’ (2007) 98(2) *Journal of Experimental Child Psychology* 94.

⁴⁹⁷ Ibid.

⁴⁹⁸ Rebecca M Willén, Pär Anders Granhag and Leif A Strömwall, ‘Factors Affecting Two Types of Memory Specificity: Particularization of Episodes and Details’ (2016) 11(11) *PLoS ONE* 1, 9.

⁴⁹⁹ The case study involved a girl who experienced repeated sexual abuse incidents between the age of seven and 11. Sonja P Brubacher and David La Rooy, ‘Witness Recall Across Repeated Interviews in a Case of Repeated Abuse’ (2014) 38(2) *Child Abuse & Neglect* 202.

An analysis of interviews conducted by child protection workers with children reporting single or recurring incidents of physical or sexual abuse suggested that children responded to interviewer probes for episodic information with generic information about recurring events. However, the interviewers asked more generic than episodic probing questions of children reporting recurring abuse than they did of children reporting a single instance of abuse. Since generic questions tend to elicit generic responses, this question style may have influenced the opportunity for children who experience recurring abuse to provide more specific information.⁵⁰⁰

7.3 Memory for temporal location in recurring events

Repeated abusive events involving parents, which typically occur inside the family home, are often particularly difficult to ‘timestamp’ as they take place frequently and are of a highly similar nature. When trying to date occurrences, it is not uncommon for contextual information about the timing of an event (for example, ‘I was in Grade 3’) to be better remembered than purely temporal information (for example, the day, month or year).⁵⁰¹ Nevertheless, some information about when and where the abuse took place is often considered important for the legal purpose of holding the perpetrator criminally liable for specific acts. It is important for legal professionals to understand children’s capabilities regarding reports of temporal information, as this may reduce the likelihood of them labelling children who provide few temporal details as unreliable, incompetent witnesses.⁵⁰²

Eyewitness studies of memory for temporal location in recurring events

Temporal location memory (that is, the ability to link details to a particular point in time using conventional time scales, such as the day of the week, the month or the season) develops during childhood.⁵⁰³ One study found that school-aged children could link an event that took place seven weeks ago to a day of the week, month or season, and that they were similarly able to link the time to a day of the week, day of the month or day of the season.⁵⁰⁴ A participant at the roundtable convened by the Royal Commission indicated that ‘children may

⁵⁰⁰ Interviews conducted by child abuse investigators included 34 involving repeated physical or sexual abuse, and 17 single incident reports with children aged 4–16; Luke Schneider et al, ‘Children’s Episodic And Generic Reports Of Alleged Abuse’ (2011) 25(6) *Applied Cognitive Psychology* 862.

⁵⁰¹ Martine B Powell, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 21, lines 39–41.

⁵⁰² Yael Orbach and Michael E Lamb, ‘Young Children’s References to Temporal Attributes of Allegedly Experienced Events in the Course of Forensic Interviews’ (2007) 78(4) *Child Development* 1100.

⁵⁰³ Stephen J Ceci, Martine B Powell and Gabrielle F Principe, ‘Children’s Ability to Recall a Single Occurrence of a Repeated Event’ in David L Faigman et al (eds), *Modern Scientific Evidence: The Law and Science of Expert Testimony* (Thomson Reuters, 2017) volume 2, 1–3.

⁵⁰⁴ William J Friedman, ‘The Development of Children’s Memory for the Time of Past Events’ (1991) 62(1) *Child Development* 139.

emerge first with times of the day that they can relate, in terms of context, to things like breakfast time, or when they go to sport, rather than specific time periods that adults would use. That ability develops later.⁵⁰⁵

Some legal professionals have proposed that children do not need to provide exact dates and times of abuse, but instead should indicate whether the abuse took place near a particular 'landmark' event (for example, the child's birthday or Christmas). Research has revealed two problems with linking abusive events to landmark events. First, landmark events may return regularly throughout the year, and it can be confusing to a child to determine which landmark event is associated with a particular abusive event. Second, the way in which the temporal distance between the landmark event and the abusive event is specified may be ambiguous (for example, 'around the time of' the landmark event, 'close in time to' the landmark event or 'shortly after' the landmark event). Another difficulty with using landmark events as markers of when abusive events took place is that children interpret landmark events in a prospective linear fashion, and not from a cyclical perspective.⁵⁰⁶ For example, children will deny that an abusive event took place close to Christmas when it happened shortly *after* and not *prior to* Christmas.⁵⁰⁷

A further consideration is the ability of children to report when a target feature happened within a series of recurring events relative to the other occurrences. Children have difficulty providing accurate responses when asked whether a target feature happened before or after an occurrence containing another variant feature. Older and younger children were more accurate when using a visual aid to indicate the variant feature in the first occurrence in a series of repeated events. Older children, but not younger children, were also more accurate in indicating the variant feature in the last occurrence in a series of repeated events.⁵⁰⁸

⁵⁰⁵ Penny van Bergen, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 23, lines 9–13.

⁵⁰⁶ Deirdre Brown, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 23, lines 15–29; Kelly McWilliams, Thomas D Lyon and Jodi A Quas, 'Maltreated Children's Ability to Make Temporal Judgments Using a Recurring Landmark Event' (2016) *Journal of Interpersonal Violence*, doi: 10.1177/0886260516645812.

⁵⁰⁷ *Ibid.*

⁵⁰⁸ Children aged between four and eight were exposed to four occurrences of a similar event and subsequently asked if a target variant feature happened in an occurrence before or after that in which a different variant feature occurred. Older children performed slightly above chance when the target was in the first occurrence. The children were asked to identify which version of a similar activity (for example, four puzzles each with different pictures on them) they had completed as part of the first, second, third and fourth occurrence. Kim P Roberts et al, 'Developmental Differences in the Ability to Provide Temporal Information About Repeated Events' (2015) 29(3) *Applied Cognitive Psychology* 407, 417.

Overall, memory for dates and time frames can be inaccurate in providing information about the duration, sequence and dates of recurring events as this is a skill that develops with age.

Field studies of memory for temporal location in recurring events

Researchers have examined references to temporal information (that is, sequences, dates, frequency and duration) in investigative interviews with sexually abused victims⁵⁰⁹ to facilitate the retrieval of event-specific details. The results of these studies showed an age-related increase in references to temporal attributes. Most children mentioned the temporal markers spontaneously or in response to interviewers' prompts, while younger children were less likely to mention temporal features spontaneously, possibly due to their unfamiliarity with temporal markers. The researchers had expected older children to link events using conventional time scales (for example, days, weeks, months or seasons) as an earlier study⁵¹⁰ showed children typically develop this ability between the ages of eight and nine. However, they did not find an increase in references to events using conventional time scales among the older children. This may indicate that there is no clear minimum age at which children should be expected to be able to link events to these types of conventional time scales, thus these should be avoided in legal settings. It may be easier for children to link events to certain familiar daily activities (for example, after dinner), particularly if the child is abused by a family member in their own home. Even some of the younger children were able to mention and link events to familiar short time patterns, or to non-specific points in time.⁵¹¹

An analysis of police interviews with children reporting recurring sexual abuse found that children spontaneously provided a label for specific incidents (for example, 'the time behind the shop'). This behaviour increased with the age of the child. Investigators tended not to use the child's spontaneous label in probing for more specific information and demonstrated a preference for temporal labels (for example, 'the first time'). When investigators did adopt the child's labels in follow-up questions, they reported a greater amount of specific

⁵⁰⁹ The child victims were aged between four and 10; Yael Orbach and Michael E Lamb, 'Young Children's References to Temporal Attributes of Allegedly Experienced Events in the Course of Forensic Interviews' (2007) 78 *Child Development* 1100.

⁵¹⁰ William J Friedman 'The Development of Children's Memory for the Time of Past Events' (1991) 62(1) *Child Development* 139.

⁵¹¹ Yael Orbach and Michael E Lamb, 'Young Children's References to Temporal Attributes of Allegedly Experienced Events in the Course of Forensic Interviews' (2007) 78(4) *Child Development* 1100.

information.⁵¹² Australian prosecutors favoured the use of the child's own language to label discrete abuse incidents.⁵¹³

7.4 Estimates of the frequency and duration of recurring events

Eyewitness studies of memory for the frequency of repeated events

Children who report multiple abusive events are often questioned about the frequency with which the abuse took place and the duration of the abusive events. Eyewitness paradigm studies have focused on children's ability to report numerical and qualitative estimates of event frequency.

In one study,⁵¹⁴ children who experienced a recurring classroom event four times were able to tell the interviewer that it happened a number of times, but couldn't accurately indicate the total number of events. A participant at the roundtable convened by the Royal Commission indicated that 'they [children] can say they have done it once, that's really easy, but if they have done it more than once, then they often have trouble estimating how many times they participated in those events.'⁵¹⁵ Children's ability to provide numerical estimates increased with age and decreased when the interval between the event and the interview was longer. Overall, the research suggests that, irrespective of age, individuals who experienced recurring events usually indicated that more than one event took place, but tended to underestimate the event frequency, particularly when it is higher.⁵¹⁶

⁵¹² This study analysed 97 interviews conducted by police with children aged between five and 13 who reported repeated sexual abuse. Most children produced at least one spontaneous label. Interviewers ignored or rephrased the label in 66 per cent of cases; this was associated with the elicitation of proportionally fewer episodic details. Sonja P Brubacher et al, 'How Do Interviewers and Children Discuss Individual Occurrences of Alleged Repeated Abuse in Forensic Interviews?' (2013) 27(4) *Applied Cognitive Psychology* 443.

⁵¹³ This is based on two focus groups with 13 Crown prosecutors who specialised in child sexual assault. Martine B Powell et al, 'Prosecutors' Perceptions on Questioning Children about Repeated Abuse, Psychiatry' (2017) 24(1) *Psychology and Law* 74.

⁵¹⁴ Kim P Roberts et al, 'Developmental Differences in the Ability to Provide Temporal Information About Repeated Events' (2015) 29(3) *Applied Cognitive Psychology* 407.

⁵¹⁵ Stephanie Sharman, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 21, lines 22–25.

⁵¹⁶ Children aged between four and eight were exposed to either (a) one event, (b) six events over three weeks or (c) 11 events over five-and-a-half weeks as part of the Deakin classroom studies. Stefanie J Sharman, Martine B Powell and Kim P Roberts, 'Children's Ability to Estimate the Frequency of Single and Repeated Events' (2011) 13(3) *International Journal of Police Science & Management* 234.

Field studies of memory for the frequency of recurring events

To our knowledge, only one study⁵¹⁷ has focused on children's memory for salient and repeated events outside a laboratory setting. Although this study did not focus on sexually abusive events, the children involved had all experienced some form of maltreatment. Participants were asked to provide temporal information about their first and last foster home placement or court attendance. They were also asked how frequently they had attended court or been placed in a foster home. The results showed that very few children were able to correctly provide temporal information about the first and last occurrences of these events. Only about half of the children could provide their age at the time of their first and last foster home placement or court attendance. Additionally, the children performed poorly when reporting the number of times they had attended court or been placed in foster homes.⁵¹⁸

No other analogue or field studies exist, to our knowledge, that have examined children's ability to describe the frequency of repeated abuse events. It may be difficult to determine the objective number of times abuse took place if some of the events were 'hidden' in the perpetrator's grooming process. The gradual process of inappropriate touching may be well underway before a child recognises their sexual or inappropriate nature and that they have already been abused on numerous occasions in the past.⁵¹⁹

7.5 Memory for the first and the most recent event in a series

Researchers have found that adults' memory for repeated events can be represented with a U shape. Adults have good memories of the first event (referred to as 'the primacy effect') and the most recent event (referred to as 'the recency effect') in a series of repeated events, although the latter is more susceptible to memory loss than the former. Limited research involving children has been conducted on this topic. In one eyewitness paradigm study, children's performance on memory tasks was examined following exposure to an experiment involving a series of classroom activities. The older children's memory performance was parallel to that of the adults, yielding a U-shaped pattern for repeated events, and a tendency to forget the most recent event. The older children showed a primacy effect and recency

⁵¹⁷ Lindsay Wandrey et al, 'Maltreated Children's Ability to Estimate Temporal Location and Numerosity of Placement Changes and Court Visits' (2012) 18 *Psychology, Public Policy, and Law* 79.

⁵¹⁸ Only 8 per cent of the children were able to correctly indicate the month in which they were last placed in a foster home, whereas only 11 per cent of the children correctly indicated the month in which they last visited court. Only 23 per cent were accurate about the number of times they had been placed in foster homes and in 14 per cent of the cases children accurately estimated the number of times they had visited the court. Lindsay Wandrey et al, 'Maltreated Children's Ability to Estimate Temporal Location and Numerosity of Placement Changes and Court Visits'. (2012) 18 *Psychology, Public Policy, and Law* 79.

⁵¹⁹ Mary L Paine and David J Hansen, 'Factors Influencing Children to Self-Disclose Sexual Abuse' (2002) 22(2) *Clinical Psychology Review* 271.

effect similar to that of adults. However, these effects emerged only some of the time for the younger children. ⁵²⁰

Key points on children's memory for recurring events

- One factor that can influence memory processes is whether the event recurs in someone's life or is a one-off. For repeated or familiar events, a person generally develops a schema for the core or gist features of that type of experience. Even reliable memory reports of core events and actions in recurring events are often accompanied by minor inconsistencies related to the core features. Once a schema exists, specific details of every instance of that type of experience may not be encoded or consolidated, and thus cannot be recalled. Memories for details that recur consistently are more resistant to error and misinformation. Details about recurring events will often be remembered, but may be unrelated to particular moments in time, and recall of specific details about a particular recurring event in a series may not be possible or may be prone to error.
- Although memory for dates and time frames can be inaccurate, providing information about the duration, sequence and dates of recurring events is a skill that develops with age. When recalling the time of an event, children below primary school age may only be able to report contextual and non-cyclical information (for example, 'I was in kindergarten') because their ability to provide specific timing information will only develop with age. Primary school children may recall not only contextual information but may specify when an event happened (that is, day, month and year; for example, 'the event happened on a Monday in March in 2013').
- Irrespective of age, individuals who experience recurring events can usually indicate that the events took place more than once, but tend to underestimate their frequency.

⁵²⁰ Overall performance on the memory tasks declined after a period of delay. Children aged 6–8 performed better on the memory tasks (that is, recalling one specific event among a series of events and sequencing the activities in the correct order), compared to the children aged 4–5; Martine B Powell, Donald M Thomson and Stephen J Ceci, 'Children's Memory of Recurring Events: is the First Event Always the Best Remembered?' (2003) 17(2) *Applied Cognitive Psychology* 127; findings from a study involving 177 children aged 5–9 showed no strategy, and that all children had difficulty describing why they remembered a certain occasion best: Meaghan C Danby et al, 'Children's Reasoning About Which Episode of a Repeated Event is Best Remembered' (2016) 31(1) *Applied Cognitive Psychology* 99.

Chapter 8

Eliciting memory reports

Best-practice interviewing aimed at facilitating memory contains a number of recognised and empirically supported components such as established ground rules, practice narratives (practice at being interviewed), rapport-based support, age-appropriate open questioning and accommodation of individual differences. Although best-practice interviewing has a range of benefits for victims, the key reason for using psychological approaches in interviews is to improve memory retrieval. For example, cognitive interview mnemonics are explicitly based on psychological understanding of memory processes, and developmental narrative elaboration techniques are based on theories relating to category-based cued retrieval. A range of interviewing frameworks emphasise the benefits of using evidence-based best-practice components. Other frameworks focus on the type of evidence of sexual abuse that should be elicited. Training, ongoing assessment and evaluation of investigative interviewing techniques should focus on evidence-based approaches. Research on the impact of question type on memory can guide choices during narrative evidence gathering that is often allowed in Australian courts instead of traditional examination and cross-examination. Conducting multiple interviews using appropriate questioning shortly after an event, with short gaps between each interview, can aid memory. Research on using intermediaries during investigative interviews and in court examined whether this innovation aids memory and the communication challenges that exist in both contexts.

The quality of an investigative interview will influence the quality of memory reports regarding child sexual abuse. In this sense, sound investigative interviewing (and appropriate questioning of a complainant in court) is key to helping complainants accurately report any evidence they can still access despite having encoded and consolidated their memory of the abuse.

This chapter focuses on the memory implications of best-practice interviewing during investigations of child sexual abuse. Knowledge of best-practice interview tactics gained from empirical research and their impact on memory is useful to investigators, lawyers, courts and juries that need to discuss the quality of investigative interviewing. These courtroom discussions – and any prior prosecutorial evaluations of the interview quality and resulting evidence – should be shaped by a thorough understanding of the types of questions victims were asked during the investigative interviews. Understanding the ways interviewers handle apparent inconsistencies in the flow of an interview is very relevant in these discussions and evaluations. This chapter goes on to discuss the benefits of conducting multiple interviews with child victims of sexual abuse before examining best-practice methods for training investigative interviewers.

8.1 Best-practice features of interviews to enhance memory

Various interview methods, frameworks and approaches have been designed and studied to try to determine which enhance memory the most when interviewing child and adult victims of child sexual abuse. Most approaches, and especially the cognitive interview, were designed with explicit reference to psychological research on memory using trainable mnemonics or question prompts to enhance retrieval at reporting. Some of the memory-related features focus on identifying *how* to interview to facilitate memory performance, while others consider the *nature* of the evidence that should be elicited. Ideally, interview methods incorporate both features.⁵²¹

The following components are present in a variety of investigative interviewing approaches. The following have emerged as best practice when aiming to elicit more accurate memories of events without unduly increasing rates of reporting of false information: (1) establishing ground rules; (2) practicing being interviewed and providing narratives; (3) using rapport-based approaches; (4) asking open-ended questions; (5) giving free-recall prompts (such as mental and physical reinstatement); (6) asking age-appropriate and sensitive questions; (7) appropriately using props and other non-verbal techniques; and (8) accommodating individual differences.

Table 8.1 designates where research conducted with children or adults has supported the use of features that aid memory in investigative interviews. The table also notes where the research evidence was mixed or where it showed that an interview technique was contraindicated.

⁵²¹ Examples are provided in Table 8.2.

Table 8.1: Features that facilitate memory retrieval

Memory-related features	Children	Adults
Ground rules	Supported ^a , mixed support ^b	–
Practice narrative	Supported ^c	–
Rapport-based	Supported ^d	Supported ^e
Open-ended questions	Supported ^f	Supported ^g
Minimise closed questions	Supported ^h	Supported ⁱ
Supportive statements	Supported ^j	–
Elicit evidence of grooming	Supported ^k	–
Physical context reinstatement	Supported ^l	Supported ^m
Mental context reinstatement	Supported ⁿ	Supported ^o
Non-verbal aids/touch inquiry	Unsupported ^p	–
Children permitted to draw	Supported ^q	N/A

Note: Superscripts refer to empirical studies listed in Appendix 8.1 that specify support, mixed outcomes or non-support for each memory-related feature.

Table 8.2 summarises the attributes of three widely used evidence-based interview approaches that have increased memory performance, both in terms of accuracy and quantity of retrieved detail relative to other investigative approaches. In addition, the approaches accommodate individual differences. In some instances, memory-related benefits have also been associated with increased rates of allegations recorded and/or increased charge recommendations. The three interviewing approaches specified in table 8.2 are well researched and have either been adapted for use with children, using approaches designed for adults (for example, the cognitive interview), or have been developed specifically for use with children reporting child sexual abuse (for example, the National Institute of Child Health and Human Development protocol, revised version (NICHD-R)⁵²² and the Developmental Narrative Elaboration (DNE) Interview, which uses free-recall and category-cued elaboration via visual remembering cards or verbal prompts.⁵²³

⁵²² <http://nichdprotocol.com/>

⁵²³ Karen J Saywitz and Lorinda B Camparo, *Evidence-based Child Forensic Interviewing: Developmental Narrative Elaboration Interview* (Oxford University Press, 2013) 32.

Table 8.2: Empirical support for interview approaches

Memory-related features	NICHD-R	Cognitive interview	DNE
Increased memory accuracy	Supported ^a	Supported ^b , mixed support ^c , unsupported ^d	Supported ^e
Increased memory quantity	Supported ^f	Supported ^g	Supported ^h
Developmentally appropriate	Supported ⁱ	Supported ^j , unsupported ^k	Supported ^l
Sensitive to intellectual impairment	Supported ^m	Supported ⁿ , mixed support ^o	Supported ^p
Cross-cultural application	Supported ^q	Unsupported ^r	Supported ^s
Increased allegation rates	Supported ^t	–	–
Increased charge recommendations	–	Supported ^u	–

Note: NICHD-R = National Institute of Child Health and Human Development protocol, revised version; DNE = Developmental Narrative Elaboration Interview. Superscripts refer to empirical studies listed in Appendix 8.2 that specify support, mixed outcomes or non-support for each memory-related feature.

Facilitating memory performance with best-practice interview features

In the introductory phase, the interviewer will explain the purpose of the interview and set procedural ground rules.⁵²⁴ These will include emphasising that it is vital to tell the truth, urging the child not to guess, advising them to respond ‘I don’t understand’ or ‘I don’t know’ when appropriate, and to correct facts the interviewer gets wrong. These ground rules are aimed at improving the quality of retrieved memories of pre-school and older children.⁵²⁵ The advantages of using ground rules were also shown in an analysis of interviews conducted with Australian Aboriginal child victims of sexual abuse with most rules being seen to be used

⁵²⁴ Sonia P Brubacher, Deborah Ann Poole and Jason J Dickinson, ‘The Use of Ground Rules in Investigative Interviews With Children: A Synthesis and Call for Research’ (2015) 36 *Developmental Review* 15; Meaghan C Danby et al, ‘The Effects of Practice on Children’s Ability to Apply Ground Rules in Narrative Interview’ (2015) 33(4) *Behavioral Sciences and the Law* 446; Gemma Hamilton, Sonja P Brubacher and Martine B Powell, ‘Investigative Interviewing of Aboriginal Children in Cases of Suspected Sexual Abuse’ (2016) 25(4) *Journal of Child Sexual Abuse* 3.

⁵²⁵ Jason J Dickinson, Sonja P Brubacher and Deborah A Poole, ‘Children’s Performance on Ground Rules Questions: Implications for Forensic Interviewing’ (2015) 39(1) *Law and Human Behaviour* 87.

spontaneously by interviewees in the interviews following a ground rules discussion.⁵²⁶ The ground rules phase has sometimes been criticised as taking up too much time during the interview, especially with children who have a limited attention span.⁵²⁷ Ground rules have been associated with minor improvements in memory accuracy⁵²⁸, so interviewers should use them, and not cut them short.

Forensic interviews may include a practice narrative phase aimed at optimising the victim's memory performance. Practice sessions have been shown to increase responses on target topics by allowing interviewees to practice remembering unrelated autobiographical and event memories.⁵²⁹ Although a practice narrative phase can be perceived as impractical⁵³⁰, studies have shown that it reduces the suggestibility of pre-schoolers and increases accurate recall of action-related information in school-aged children.⁵³¹ A practice narrative phase yielded memory benefits in forensic interviews with children of Australian Aboriginal background.⁵³²

⁵²⁶ Gemma Hamilton, Sonja P Brubacher and Martine Powell, 'Investigative Interviewing of Aboriginal Children in Cases of Suspected Sexual Abuse' (2016) 25(4) *Journal of Child Sexual Abuse* 363.

⁵²⁷ J Anderson et al, 'The CornerHouse Forensic Interview Protocol: RATAc (2010) 12 *Journal of Practical and Clinical Law* 193.

⁵²⁸ This study included 49 children of pre-school age who participated in three activities. Half of the children were given ground rules prior to the interview questions, while the other half in the control group did not receive them. The researchers found marginal differences between the two groups. Children who received the ground rules were slightly more accurate in their reports than children in the control group. The researchers concluded that the impact of the ground rules is negligible: Lisa M Ellis et al, 'Do Simple "Groundrules" Reduce Preschoolers' Suggestibility about Experienced and Nonexperienced Events?' (2003) 10(2) *Psychiatry, Psychology, and Law* 334

⁵²⁹ Deirdre Brown et al, 'The NICHD Investigative Interview Protocol: An Analogue Study' (2013) 19(4) *Journal of Experimental Psychology: Applied* 367; Kim P Roberts et al, 'The Effects of Rapport-building Style on Children's Reports of a Staged Event' (2004) 18(2) *Applied Cognitive Psychology* 189.

⁵³⁰ Sonia P Brubacher, Debra A Poole and Jason J Dickinson, 'The Use of Ground Rules in Investigative Interviews with Children: Synthesis and Call for Research' (2015) 36 *Developmental Review* 15.

⁵³¹ In one study, 58 pre-schoolers (aged 48–70 months) and school-aged (aged 84–103 months) children witnessed a pretend trip to the beach (involving 11 event features and the research assistant touching the child innocuously 16 times) and a game of shape recognition (featuring 11 events in which the children were touched innocuously 36 times). Before recall, half the children who participated in the Event Report Training (ERT), were shown what it means to recall an event and it was explained when and why they left out an important event feature. In ERT, child eyewitnesses are trained via video about which action components they should state to provide a complete report. This is done to counteract the tendency of children to give sparse narrative accounts (for example, they tend to only order events temporally with no high point and no evaluation, are affected by an egocentric perspective and leapfrog between event features). Using ERT training before conducting the recall reduced suggestibility to abuse-related questions in pre-schoolers, though it did not increase their recall rates to open-ended questioning. However, school-aged children trained with ERT recalled 32 per cent more action information, without increasing recall of incorrect information; see Elisa Krackow and Steven J Lynn, 'Event Report Training An Examination of the Efficacy of a New Intervention to Improve Children's Eyewitness Reports' (2010) 24(6) *Applied Cognitive Psychology* 868, 871.

⁵³² A field study that analysed interview transcripts with Australian Aboriginal child complainants aged 16 or younger showed that in interviews containing practice of ground rules, children were more likely to use the

Using a comfortable setting (for example, a comfortable room as opposed to a neutral room) and providing breaks throughout the interview have been shown to facilitate disclosure of more information and more accurate memories held by both children⁵³³ and adults. In a staged event, children were taught about different body parts and experienced some bodily touching. Two weeks after the event, they were interviewed either in a mock courtroom or in a private room. Compared with the children who were interviewed in the private room, the children interviewed in the mock courtroom had higher heart rate variability and impaired memory performance.⁵³⁴ Researchers have shown that building rapport during interviews also benefits adults. They found that by creating a comfortable interview environment in which rapport was built, witnesses provided more accurate memory reports of a mock crime video, and reported less misinformation.⁵³⁵

It is important that the interviewer includes an explicit and guided closure phase to ensure that the interviewee is motivated to cooperate if any future supplementary interviews are needed to improve the memory report.⁵³⁶ Such a phase can include being attentive at the end of the interview and during the transition from the interview to the individual's presentation, experience and needs.⁵³⁷

8.2 Eliciting a full account of events

One of the most important aims of a forensic interview is to elicit retrieval of the full account of the abusive events. The 'whole story' approach is a newer Australian-based recommendation for interviewing victims of child sexual abuse⁵³⁸, and was developed for this purpose.⁵³⁹ It emphasises the importance of achieving clarity and coherence in victims'

ground rules spontaneously during the interview. In addition, when practice narratives were used, children tended to speak more and produce more words; see Gemma Hamilton, Sonja P Brubacher and Martine Powell, 'Investigative Interviewing of Aboriginal Children in Cases of Suspected Sexual Abuse' (2016) 25(4) *Journal of Child Sexual Abuse* 363.

⁵³³ Karen J Saywitz and Lorinda B Camparo, *Evidence-based Child Forensic Interviewing: Developmental Narrative Elaboration Interview* (Oxford University Press, 2013).

⁵³⁴ This study included 80 children aged 8–10: Rebecca Nathanson and Karen J Saywitz, 'The Effects of the Courtroom Context on Children's Memory and Anxiety' (2003) 31 *The Journal of Psychiatry & Law* 67.

⁵³⁵ Jonathan P Vallano and Nadja Schreiber Compo, 'A Comfortable Witness is a Good Witness: Rapport-Building and Susceptibility to Misinformation in an Investigative Mock-Crime Interview' (2011) 25(6) *Applied Cognitive Psychology* 960; Marc G Berman, John Jonides and Stephen Kaplan, 'The Cognitive Benefits of Interacting With Nature' (2008) 19(12) *Psychological Science* 1207.

⁵³⁶ Karen J Saywitz and Lorinda B Camparo, *Evidence-based Child Forensic Interviewing: Developmental Narrative Elaboration Interview* (Oxford University Press, 2013).

⁵³⁷ Jennifer N Anderson, 24(1) *National Center for the Prosecution of Child Abuse Update* 1.

⁵³⁸ Patrick Tidmarsh, Martine B Powell and Elli Darwinkel, 'Whole Story: A New Framework for Conducting Investigative Interviews about Sexual Assault' (2012) 4(2) *Investigative Interviewing: Research and Practice* 33; < <http://www.theage.com.au/victoria/telling-the-whole-truth-20120929-26sft.html> >

⁵³⁹ This approach was developed by the Specialist Development Unit of the Sexual Offence and Child Abuse Investigation Team Project (SOCIT) of Victoria Police.

accounts by committing to eliciting particular types of evidence in interviews with child sexual abuse victims.⁵⁴⁰ Designers of the whole story approach began with the premise that a clear understanding of the circumstances of the offending and of the victim–offender relationship is required. Specific types of evidence elicited include: (1) grooming evidence, especially regarding how the victim–perpetrator relationship evolved⁵⁴¹; (2) unique signifiers such as particular details specific to the offending relationship; and (3) points of confirmation such as details in victim narratives that overlap with suspect narratives to substantiate the offending relationship.⁵⁴²

Among other motives for developing this approach is concern that: (1) victim-blaming and distrust in the victim’s account stems from a failure to understand the complex reality of abusive behaviour and the relationship between the victim and the perpetrator, including how that is remembered and portrayed by the victim⁵⁴³; (2) some traditional investigative practices in child sexual assault trials produce low-quality interviews (for example, with few reliable memories of events) that lead to poor justice outcomes; and (3) the only evidence admitted from a victim may be a single recorded interview.⁵⁴⁴

In related research⁵⁴⁵, the concept paper for the whole story approach was provided to prosecutors who were then asked to reflect in interviews and focus groups about the utility of eliciting evidence of grooming and a relationship between the complainant and the perpetrator. Prosecutors observed that eliciting relationship evidence at an early stage of the investigation was important for improving understanding of sexual offending. They further agreed that eliciting this type of remembered information in a forensic interview is more likely to be detailed and accurate⁵⁴⁶, and accepted at trial. Prosecutors therefore suggested that taking the whole story approach elicits important contextual and autobiographical memory details instead of focusing on episodic detail of single events.

The whole story approach is more focused on *what* evidence or narrative can be elicited – and how it should be interpreted for investigatory or prosecutorial purposes – rather than

⁵⁴⁰ Ibid.

⁵⁴¹ Natalie Bennett and William T O’Donohue, ‘Child Abuser’s Threats and Grooming Techniques’ in William T O’Donohue and Mathew Fanetti (eds), *Forensic Interviews Regarding Child Sexual Abuse* (Springer International Publishing, 2016) 307; Natalie Bennett and William O’Donohue, ‘The Construct of Grooming in Child Sexual Abuse: Conceptual and Measurement Issues’ (2014) 23(8) *Journal of Child Sexual Abuse: Research, Treatment, & Program Innovations for Victims, Survivors, & Offenders* 957.

⁵⁴² Elli Darwinkel, Evaluation of Victoria Police SOCIT-MDC Reforms for Sexual Assault Investigation (Doctoral Dissertation, Deakin University, 2014).

⁵⁴³ Ibid, 36.

⁵⁴⁴ Ibid, 34.

⁵⁴⁵ Elli Darwinkel, Martine B Powell and Patrick Tidmarsh, ‘Prosecutors’ Perceptions of the Utility of ‘Relationship’ Evidence in Sexual Abuse Trials’ (2014) 47(1) *Australian and New Zealand Journal of Criminology* 44.

⁵⁴⁶ Ibid, 48.

how to use particular interview methods. The whole story approach eschews event-focused interviewing in favour of relationship-focused interviewing. In doing so, it aims to uncover the dynamics between the victim and perpetrator to explain both the offending and the behaviour of the complainant in and around the time of abuse episodes. The next paragraphs discuss strategies for eliciting this full account of the events.

In many interview approaches, the interviewer uses open-ended questions to prompt a free-recall narrative, makes supportive statements and minimises the use of closed questions. One of the most important Australian contributions to this field was a detailed study of effective question types to use with child victims of sexual abuse.⁵⁴⁷ This research produced clear descriptions and rationales for using open-ended, open presumptive⁵⁴⁸, depth and breadth questioning, as well as other verbal interview strategies to enhance memory performance. This type of questioning gives the interviewee time to more comfortably expand the flow of their autobiographical account and narrative. These questioning techniques are successfully supplemented by para-verbal strategies such as the use of 'minimal encouragers' like 'uh-huh'.⁵⁴⁹

Findings by other research teams have supported using narrative interviewing approaches. These include narrative elaboration training⁵⁵⁰, encouraging narrative approaches⁵⁵¹ and using appropriate question types.⁵⁵² The Developmental Narrative Elaboration Interview is a semi-structured interview procedure for forensic interviews of children aged 4–12. This approach assists children to structure their memory search. Memory support is provided via scaffolding, using non-suggestive verbal memory prompts and/or visual cues (reminder

⁵⁴⁷ Carolyn H Hughes-Scholes and Martine B Powell, 'Techniques used by Investigative Interviewers to Elicit Disclosures of Abuse from Child Witnesses: A Critique' (2013) 14(1) *Police Practice and Research* 45; Nina Westera et al, 'Sexual Assault Complainants on the Stand: A Historical Comparison of Courtroom Questioning' (2017) 23(1) *Psychology, Crime and Law* 15; Martine B Powell et al, 'Errors in the Identification of Question Types in Investigative Interviews of Children' (2013) 15(2) *International Journal of Police Science and Management* 144.

⁵⁴⁸ Stefanie J Sharman, Catherine Boyd and Martine B Powell, 'Disrupting the Encoding of Misinformation Delivered in Closed Specific and Open Presumptive Questions' (2015) 22(4) *Psychiatry, Psychology, and Law* 535.

⁵⁴⁹ Martine B Powell and Pamela C Snow, 'Guide to Questioning Children During the Free-Narrative Phase of an Investigative Interview' (2007) 42(1) *Australian Psychologist* 57.

⁵⁵⁰ Deirdre Brown and Margaret-Ellen Pipe, 'Individual Difference in Children's Event Memory Reports and the Narrative Elaboration Technique' (2003) 88(2) *Journal of Applied Psychology* 195; Deirdre Brown and Margaret-Ellen Pipe, 'Variations on a Technique: Enhancing Children's Recall Using Narrative Elaboration Training' (2003) 17(4) *Applied Cognitive Psychology* 377.

⁵⁵¹ Michael E Lamb and Deirdre A Brown, 'Conversational Apprentices: Helping Children Become Competent Informants about their Own Experiences' (2006) 24(1) *British Journal of Developmental Psychology* 215.

⁵⁵² Deirdre A Brown and Michael E Lamb, 'Can Children Be Useful Witnesses? It Depends How they are Questioned' (2015) 9(4) *Child Development Perspectives* 250; Missy Wolfman, Deirdre Brown and Paul Jose, 'Talking Past Each Other: Interviewer and Child Verbal Exchanges in Forensic Interviews' (2016) 40(2) *Law and Human Behavior* 107.

cards). The essence of the narrative elaboration technique is to create opportunities for a child to expand on retrieved autobiographical memories by describing the participants, setting, actions, conversations and affective states, as well as the context, timing, objects and sensory memories. This technique allows children to tell their experiences in their own words. The interview process is conducted in three phases: introduction, core interview and concluding phase. The introduction includes a practice narrative and discussion of ground rules that prepare the interviewee. Depending on the age of the interviewee, this phase may be based on the retelling of a story from a book or of events that occurred before the interview. In the core interview, first the child provides a spontaneous free-recall description of a forensically relevant event. The next phase involves cued elaboration using visual reminder cards and/or verbal prompts, and then short follow-up questions are asked before beginning the closure phase. Appropriate question types include positively phrased questions, questions posed in the active voice, separate questions for separate topics, questions asked in a logical temporal sequence, and questions that include concrete anchors that children are familiar with.⁵⁵³ Some questions that might encourage an elaboration on forensically relevant events include ‘what happened?’ or ‘tell me more about that’.⁵⁵⁴

Although not directly associated with memory retrieval, rapport-based interviewing techniques are beneficial when interviewing children⁵⁵⁵ and adults.⁵⁵⁶ For example, research on rapport-based approaches used in the pre-substantive phase of the NICHD interviews showed that creating rapport can form a solid basis for the complainant feeling supported. This feeling of support can help child sexual abuse victims overcome their reluctance to answer questions and can facilitate positive interview dynamics.⁵⁵⁷ The CornerHouse Forensic Interview Protocol™⁵⁵⁸ includes rapport-building because it helps establish a foundation for the interview process by orienting, learning about and facilitating the individual’s best possible functioning – including memory function – during the interview. This, in turn, can increase the amount and quality of information disclosed in an interview. Furthermore, eyewitness studies have confirmed that interviews conducted using a rapport-laden style

⁵⁵³ The 2015 Australasian Institute of Judicial Administration, *Bench Book for Children Giving Evidence in Australian Courts*; Mark Nolan and Jane Goodman-Delahunty, *Legal Psychology in Australia* (Thomson Reuters, 2015), 239.

⁵⁵⁴ Karen J Saywitz and Lorinda B Camparo, *Evidence-based Child Forensic Interviewing: Developmental Narrative Elaboration Interview* (Oxford University Press, 2013) 100-102.

⁵⁵⁵ Karen J Saywitz et al, ‘Developing Rapport with Children in Forensic Interviews’ (2015) 33(4) *Behavioral Sciences and the Law* 372.

⁵⁵⁶ Roger Collins, Robyn Lincoln and Mark G Frank, ‘The Effect of Rapport in Forensic Interviewing’ (2002) 9(1) *Psychiatry, Psychology and the Law* 69.

⁵⁵⁷ Elizabeth C Ahern et al, ‘Support and Reluctance in the Pre-Substantive Phase of Alleged Child Abuse Victim Investigative Interviews: Revised versus Standard NICHD Protocols’ (2014) 32(6) *Behavioral Sciences and the Law* 762.

⁵⁵⁸ Jennifer N Anderson, 24(1) National Center for the Prosecution of Child Abuse Update 1.

produce memory benefits by yielding more correct information than neutral or abrupt interviews.⁵⁵⁹

Use of multiple interviews

The question of whether supplementary interviews (additional or subsequent interviews, not repeated interviews on the same topic⁵⁶⁰) assist or impede in the elicitation of a full account of abusive events is controversial in practice. Repeated recall questions on the same topic may lead children to infer that their previous answer was incorrect, so they may doubt and change their answers, leading to inaccurate and inconsistent responses. There is a view within investigative and legal circles that it is best to interview child victims only once, to protect them from the re-traumatisation of recounting abusive events. Additionally, there are claims that the credibility of the testimony may be at stake if accounts become over-rehearsed and contaminated.⁵⁶¹ Some claim multiple interviews can lead to false memory reports because of memory reconstruction⁵⁶² and interviewers providing suggestive information.⁵⁶³ Thus, multiple interviews are associated with increased reporting of inconsistencies and contradictions, which reduce the overall credibility of interviewees' testimonies.⁵⁶⁴ There are also claims they affect the victims' confidence and cooperation in the legal process.⁵⁶⁵ Before participating in an investigative interview, children may already have been questioned about the abuse by parents, social workers and police officers.⁵⁶⁶ Supplementary investigative interviews may thus impose too great a burden on child victims. Finally, the overestimation of information required from victims for prosecution has been cited as a reason to avoid

⁵⁵⁹ Roger Collins, Robyn Lincoln and Mark G Frank, 'The Effect of Rapport in Forensic Interviewing' (2002) 9(1) *Psychiatry, Psychology and the Law* 69.

⁵⁶⁰ Greg Dear, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, 'Memory of Childhood Sexual Abuse and The Law Criminal Justice', March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 98, lines 35–36.

⁵⁶¹ Australian Law Reform Commission, *Seen and Heard: Priority for Children in the Legal Process* (Chapter 14, 'Children's evidence. Investigations and pre-trial processes') available at <<http://www.alrc.gov.au/publications/14-childrens-evidence/investigations-and-pre-trial-processes>>

⁵⁶² Charles J Brainerd, and Valerie F Reyna, *The Science of False Memory* (Oxford University Press 2005), 196; Stephen J Ceci, et al, 'The Possible Role of Source Misattributions in the Creation of False Beliefs Among Preschoolers' (1994) 42(4) *International Journal of Clinical and Experimental Hypnosis* 304.

⁵⁶³ David La Rooy, Michael Lamb and Margaret-Ellen Pipe, 'Repeated Interviewing: A Critical Evaluation of the Risks and Potential Benefits' in *The Evaluation of Child Sexual Abuse: A Comprehensive Guide to Assessment and Testimony*. (John Wiley & Sons, Inc, 2009) 327.

⁵⁶⁴ Genevieve F Waterhouse et al, 'Dynamics of Repeated Interviews with Children' (2016) 30(5) *Applied Cognitive Psychology* 713.

⁵⁶⁵ Australian Law Reform Commission, *Seen and Heard: Priority for Children in the Legal Process* (Chapter 14, 'Children's evidence. Investigations and pre-trial processes').

⁵⁶⁶ David La Rooy, Michael Lamb and Margaret-Ellen Pipe, 'Repeated Interviewing: A Critical Evaluation of the Risks and Potential Benefits' in *The Evaluation of Child Sexual Abuse: A Comprehensive Guide to Assessment and Testimony*. (John Wiley & Sons, Inc, 2009) 327.

conducting multiple interviews when sufficient information to proceed was obtained in the first interview.⁵⁶⁷

The use of supplementary interviews is also a controversial topic in the research domain. Researchers claim that negative views about supplementary interviews of children stem from the cumulative impact of poor interviewing techniques and questioning in multiple interviews, rather than a single supplementary interview. Supplementary interviews received a bad reputation in the 1980s, when repeated *and also suggestive* interviewing was the norm. As one set of researchers concluded:

‘Repeated interviews are most likely to be useful in jurisdictions that provide high quality training, regularly review interview quality, and emphasize continued professional development, with attention paid to fundamental memory concepts’.⁵⁶⁸

Recent studies support supplementary interviewing of children as long as the interviews are conducted appropriately.⁵⁶⁹ Researchers who found a beneficial effect claimed that supplementary interviews using best-practice protocols⁵⁷⁰ helped children to rehearse and remember original details as the information eventually becomes part of their gist memory, which is less prone to suggestion.⁵⁷¹ These supplementary interviews also provided reminder cues from which additional information stored in their memory could be activated through reminiscence (that is, remembering new, previously unreported, information across interviews) and hypermnnesia (that is, an increase in the amount of information recalled).⁵⁷² A supplementary interview allows child complainants who have had traumatic experiences to overcome their resistance to reporting these events at investigative interviews, and is suited to the complexity of the autobiographical memories implicated in cases of child sexual abuse. More complete and informative reports can be obtained if complainants are interviewed two

⁵⁶⁷ Martine Powell, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 94, lines 7–31; lines 39–44.

⁵⁶⁸ David La Rooy et al, ‘Do We Need to Rethink Guidance on Repeated Interviews?’ (2010) 16(4) *Psychology, Public Policy, and Law* 373, 386.

⁵⁶⁹ Genevieve F Waterhouse et al, ‘Dynamics of Repeated Interviews with Children’ (2016) 30(5) *Applied Cognitive Psychology* 713.

⁵⁷⁰ Tomoyoshi Inoue and Makiko Naka (2012) cited in Makiko Naka, *Forensic/Investigative Interviews with Children: Theory, Practice and Training* (Yukikaku, 2016) [in Japanese], 58.

⁵⁷¹ Children aged three or five participated in a play event and were interviewed once three weeks later or three times with a gap of one week between each interview. The interviewers asked children direct and free-recall questions, some of which were biased or misleading; 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’ (2007) 43(4) *Developmental Psychology* 823, 823.

⁵⁷² 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’ (2007) 43(4) *Developmental Psychology* 823, 823.

or more times⁵⁷³, fostering incremental reporting across multiple interviews, with short gaps between interviews.

Even children with intellectual disabilities (mild to moderate intellectual disabilities, attention deficit hyperactivity disorder (ADHD), attention deficit disorder (ADD) and forms of autism) can benefit from multiple interviews. In the second interview, 80 per cent of the information they reported was new or they elaborated on previously mentioned information. They repeated few details and provided little to no contradictory information in the second interview, compared to the first.⁵⁷⁴

Analogue studies in which children were interviewed on multiple occasions after experiencing a medical vaccination, confirmed the benefit of supplemental interviews. Children who had a single interview made more errors, whereas children interviewed again were more accurate and less susceptible to misleading questions. As time passed, children in the long-delay, single-interview situation may have simply forgotten more details.⁵⁷⁵

After participating in play events, children who experienced supplementary interviews provided very accurate accounts, irrespective of the interviewers' misleading questions. Being interviewed on multiple occasions – after short delays between the event and the first interview – did not increase the number of errors children made. In fact, these children were less susceptible to the interviewers' biases or misleading questions compared with children who were interviewed only once.

Findings such as these emphasise the positive interaction of short delays between the event and the first interview and the benefit of supplemental interviewing. Researchers have also tested the impact of longer intervals between the event and the final interview. After a two-year delay, children provided consistent answers to questions within the same interview. However, the answers they provided in the initial interview differed from the answers provided after a two-year delay.⁵⁷⁶ The researchers suggested that children may have forgotten the event or the answers they gave in the first interview. Thus, recommended best

⁵⁷³ Lina Leander, 'Police Interviews with Child Sexual Abuse Victims: Patterns of Reporting, Avoidance and Denial.' (2010) 34(3) *Child Abuse & Neglect* 192.

⁵⁷⁴ Ann-Christin Cederborg, David La Rooy and Michael E Lamb, 'Repeated Interviews with Children Who have Intellectual Disabilities' (2008) 21(2) *Journal of Applied Research in Intellectual Disabilities* 103.

⁵⁷⁵ Children were either interviewed once four weeks after the event, or twice, two and four weeks after the event; Gail S Goodman et al, 'Children's Testimony About a Stressful Event: Improving Children's Reports' (1991) 1(1) *Journal of Narrative and Life History* 69; Gail S Goodman, and Jodi A Quas, 'Repeated Interviews and Children's Memory' (2008) 17(6) *Current Directions in Psychological Science* 386.

⁵⁷⁶ Children aged six, eight or 10 were exposed to an event and interviewed either immediately afterwards or one week later. Subsequently, the researchers did a follow-up study and interviewed them again about the event two years later; Debra A Poole, and Lawrence T White, 'Two Years Later: Effect of Question Repetition and Retention Interval on the Eyewitness Testimony of Children and Adults' (1993) 29(5) *Developmental Psychology* 844.

practice is to conduct supplementary interviews soon after the target event, so that the final interview is not too long after the event. These procedures are most beneficial for preserving memory and maximising reminiscence of new details.⁵⁷⁷

8.3 Eliciting reliable information

Besides eliciting victims' full accounts of the events, a further aim of forensic interviews is to elicit reliable information. The information should contain the maximum amount of accurate and detailed information, and the minimum amount of false information. Common interviewing protocols deal with this aim directly or indirectly, and the following section discusses their strategies along with findings on the reliability of retrieved information.

In general, using open-ended questions and narratives, and avoiding closed questions produce more complete and accurate accounts of the information recalled.⁵⁷⁸

Research has demonstrated the inadequacy of questioning children using cross-examination style questions in terms of question comprehension, stress and memory performance.⁵⁷⁹ This style includes using negative rhetorical questions, multi-faceted questions, compound

⁵⁷⁷ David La Rooy et al, 'Do We Need to Rethink Guidance on Repeated Interviews?' (2010) 16(4) *Psychology, Public Policy, and Law* 373.

⁵⁷⁸ Sarah Agnew and Martine B Powell 'The Effect of Intellectual Disability on Children's Recall of an Event Across Different Question Types' (2004) 28(3) *Law and Human Behavior* 273; Stephen J Ceci and Maggie Bruck, 'Suggestibility of the Child Witness: A Historical Review and Synthesis' (1993) 113(3) *Psychological Bulletin* 403; Martine Powell, 'P.R.I.D.E.: The Essential Elements of a Forensic Interview with an Aboriginal Person' (2000) 35(3) *Australian Psychologist* 186; Martine Powell, 'Child Witnesses – Best Practice for Courts' in *Improving the Reliability of Child Witness Testimony in Court: The Importance of Focusing on Questioning Techniques* (The Australasian Institute of Judicial Administration, 2004) 1.

⁵⁷⁹ Emma Davies, Emily Henderson and Fred W Seymour, 'In the Interests of Justice? The Cross-Examination of Child Complainants of Sexual Abuse in Criminal Proceedings' (1997) 4(2) *Psychiatry, Psychology, and Law* 217; Rhiannon Fogliati and Kay Bussey, 'The Effects of Cross-Examination on Children's Reports of Neutral and Transgressive Events' (2013) 19(2) *Legal and Criminological Psychology* 296; Rhiannon Fogliati and Kay Bussey, 'The Effects of Cross-Examination on Children's Coached Reports' (2015) 21(1) *Psychology, Public Policy and Law* 10; Emma Davies, Emily Henderson and Kristen Hanna, 'Facilitating Children to Give Best Evidence: Are There Better Ways to Challenge Children's Testimony?' (2010) 34 *Criminal Law Journal* 347; Kristen Hanna et al, 'Questioning Child Witnesses in New Zealand's Criminal Justice System: Is Cross-Examination Fair?' (2012) 19(4) *Psychiatry, Psychology, and Law* 530; Emily Henderson, 'Best Evidence or Best Interests? What Does the Case Law Say about the Function of Criminal Cross-Examination?' (2016) 20(3) *The International Journal of Evidence and Proof* 183; Fiona Jack and Rachel Zajac, 'The Effect of Age and Reminders on Witnesses' Responses to Cross-Examination-Style Questioning' (2014) 3 *Journal of Applied Research in Memory and Cognition* 1; Sarah O'Neil and Rachel Zajac, 'The Role of Repeated Interviewing in Children's Responses to Cross-Examination-Style Questioning' (2013) 104(1) *British Journal of Psychology* 14; Saskia Righarts et al, 'Young Children's Responses to Cross-Examination Style Questioning: The Effects of Delay and Subsequent Questioning' (2015) 21(3) *Psychology, Crime and Law* 274; Rachel Zajac et al, 'The Diagnostic Value of Children's Responses to Cross-Examination Questioning' (2016) 34(1) *Behavioral Sciences and the Law* 160.

questions, passive voice, embedding, backward referencing, nominalisation and so on.⁵⁸⁰ Traditional cross-examination also impairs memory reports. Everything researchers have learned about appropriate questioning applies beyond the investigative victim interview, but empirically based questioning styles should be adopted in lieu of traditional examination and cross-examination whenever courts allow narrative questioning⁵⁸¹ of child victims of child sexual abuse.

In some jurisdictions, intermediaries or support persons are used to ensure age-appropriate and interview-appropriate communication during investigative interviewing, and at trial, and this process has received positive reviews.⁵⁸²

Some interview approaches have incorporated memory cues such as reinstating the physical context (for example, 'what do you remember about the room you were in?') and/or the mental context⁵⁸³ (for example, 'what did you think or how did you feel at the time?'). Tactics that encourage the child to illustrate the reinstated context have had a minimal positive impact during the interview phase. For example, drawing the physical and other contexts of the victim facilitated resistance to suggestive questioning but did not generally improve recall when open-ended prompts were used.⁵⁸⁴

⁵⁸⁰ The 2015 Australasian Institute of Judicial Administration, *Bench Book for Children Giving Evidence in Australian Courts*; Mark Nolan and Jane Goodman-Delahunty, *Legal Psychology in Australia* (Thomson Reuters, 2015), 239.

⁵⁸¹ For example, under *Evidence Act 1995* (NSW), s 29: '29 (1) A party may question a witness in any way the party thinks fit, except as provided by this Chapter or as directed by the court. (2) A court may, on its own motion or on the application of the party that called the witness, direct the witness to give evidence wholly or partly in narrative form. (3) Such a direction may include directions about the way in which evidence is to be given in that form. (4) Evidence may be given in the form of charts, summaries or other explanatory material if it appears to the court that the material would be likely to aid its comprehension of other evidence that has been given or is to be given'.

⁵⁸² Joyce Plotnikoff and Richard Woolfson, *The 'Go-between': Evaluation of Intermediary Pathfinder Projects* (London: Ministry of Justice, 2007).

⁵⁸³ Elli C Darwinkel, Martine B Powell and Stefanie J Sharman, 'Does Extensive Free Narrative Prompting Minimise the Effect of Mental Reinstatement on Children's Recall of Events?' (2014) 21(3) *Psychiatry, Psychology, and Law* 351; Paul M Dietze, Martine B Powell and Donald M Thomson, 'Mental Reinstatement of Context with Child Witnesses: Does it Matter Whether Context is reinstated 'Out Loud'?' (2010) 16(5) *Psychology, Crime and Law* 439; Paul M Dietze et al, 'Context Reinstatement Effects in Children's Cued Recall of Strongly and Weakly Associated Word Pairs' (2011) 28(2) *The Australian Educational and Developmental Psychologist* 91; Paul M Dietze, Martine B Powell and Donald M Thomson, 'Examination of the Effect of Mental Reinstatement of Context Across Developmental Level, Retention Interval and Type of Mnemonic Instruction' (2012) 19(1) *Psychiatry, Psychology, and Law* 89; Paul M Dietze et al, 'Does Free Recall Moderate the Effect of Mental Context Reinstatement Instructions on Children's Cued Recall?' (2013) 19(10) *Psychology, Crime and Law* 881; Donna M Drohan-Jennings, Kim P Roberts, and Martine B Powell, 2010, 'Mental Context Reinstatement Increases Resistance to False Suggestions After Children Have Experienced a Repeated Event' (2010) 17(4) *Psychiatry, Psychology, and Law* 594.

⁵⁸⁴ Mia Gentle, Martine B Powell and Stefanie J Sharman, 'Mental Context Reinstatement or Drawing: Which Better Enhances Children's Recall of Witnessed Events and Protects Against Suggestive Questions?' (2014) 66(3) *Australian Journal of Psychology* 158.

The *cognitive interview*, based extensively on the psychology of memory processes, applies mnemonics and question prompts relating to context reinstatement; calls on the interviewee to report everything; uses change-of-perspective techniques; and even calls on the interviewee to report events backwards. Each of these approaches has a justificatory basis in memory research.⁵⁸⁵ The cognitive interview has been found to facilitate memory in younger adults.⁵⁸⁶ Some mnemonics (that is, reporting events by changing perspectives and recalling events backwards) are viewed as inappropriate for child victims of traumatic sexual abuse.⁵⁸⁷ Concerns that some cognitive interview instructions may create false memories, even with adult interviewees, have not received empirical support.⁵⁸⁸ Conversely, some research suggests that cognitive interview techniques can protect against suggestion.⁵⁸⁹

One emerging interview approach that may prove useful to preserve memory and facilitate recall of autobiographical memory in children is the *Self-Administered Interview*⁵⁹⁰ developed for adult eyewitnesses. Future research may show that children who are able to read and write can self-administer the questionnaire. This could be cost-effective and benefit child victims as it could be used instead of making the child wait for an in-person interview.

⁵⁸⁵ Mark A Nolan and Jane Delahunty, *Legal Psychology in Australia* (Thomson Reuters Lawbook Co, 2015).

⁵⁸⁶ Lauren Wysman et al, 'The Cognitive Interview Buffers the Effects of Subsequent Repeated Questioning in the Absence of Negative Feedback' (2014) 32(2) *Behavioral Sciences and the Law* 207.

⁵⁸⁷ See the review by Robyn E. Holliday et al, 'The Cognitive Interview: Research and Practice Across the Lifespan' in Ray Bull, Tim Valentine and Tom Williamson (eds), *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* (John Wiley & Sons, 2009) 137; David J la Rooy et al, 'Suggestibility and Witness Interviewing Using the Cognitive Interview and NICHD Protocol' in Anne M Ridley, Fiona Gabbert and David J La Rooy (eds), *Suggestibility in Legal Contexts: Psychological Research and Forensic Implications* (Wiley-Blackwell, 2013) 197; and the meta-analysis by Amina Memon et al, 'The Cognitive Interview: A Meta-analytic Review and Study Space Analysis of the Past 25 Years' (2010) 16(4) *Psychology, Public Policy and Law* 340.

⁵⁸⁸ Stefanie J Sharman and Martine B Powell, 'Do Cognitive Interview Instructions Contribute to False Beliefs and Memories' (2013) 10(1) *Journal of Investigative Psychology and Offender Profiling* 114.

⁵⁸⁹ Amina Memon et al, 'Inoculation or Antidote? The Effects of Cognitive Interview Timing on False Memory for Forcibly Fabricated Events' (2010) 34(2) *Law & Human Behavior* 105.

⁵⁹⁰ Fiona Gabbert et al, 'Protecting Against Misleading Post-Event Information with a Self-Administered Interview' (2012) 26(4) *Applied Cognitive Psychology* 568; Fiona Gabbert, Lorraine Hope and Ronald P Fisher, 'Protecting Eyewitness Evidence: Examining the Efficacy of a Self-Administered Interview Tool' (2009) 33(4) *Law and Human Behavior* 298; Julie Gawrylowicz, Amina Memon and Alan Scoboria, 'Equipping Witnesses with Transferable Skills: the Self-Administered Interview' (2014) 20(4) *Psychology, Crime and Law* 315; E Roos af Hjelmsater, Leif A Stromwall and Par Anders Granhag, 'The Self-Administered Interview: A Means of Improving Children's Eyewitness Performance?' (2012) 18(10) *Psychology, Crime and Law* 897; Lorraine Hope et al, 'Protecting and Enhancing Eyewitness Memory: The Impact of an Initial Recall Attempt on Performance in an Investigative Interview' (2014) 28(3) *Applied Cognitive Psychology* 304; Alana C Krix et al, 'Eyewitness Evidence Obtained with the Self-Administered Interview is Unaffected by Stress' (2016) 30(1) *Applied Cognitive Psychology* 103; Katie L Maras et al, 'Evaluating the Effectiveness of the Self-administered Interview for Witnesses with Autism Spectrum Disorder' (2014) 28(5) *Applied Cognitive Psychology* 693; Helen M Paterson, Hester Eijkemans, and Richard I Kemp, 'Investigating the Impact of Delayed Administration on the Efficacy of the Self-Administered Interview' (2015) 22(2) *Psychology and Law* 307.

Although not used or evaluated for use with children, it may be possible to adapt the Self-Administered Interview protocol for use in child sexual assault investigations to preserve memory. The protocol has been tested with adult eyewitnesses and may be useful with adult victims of child sexual abuse. The protocol was developed in reaction to police dissatisfaction with the length of time needed for cognitive interviews and difficulties implementing them. This shorter protocol can be used with multiple witnesses quickly. Witnesses answer five prompts in a booklet to record their recollections. The sections include: general instructions; instructions to reinstate the context of the event, presented in the style of a cognitive interview; instructions to report everything; instructions to describe other people, including the positions of other witnesses; a place to sketch the scene and describe spatial relationships and other spatial information; and an invitation to recall easy-to-ignore elements of the event such as whether their view was clear or obstructed etc.⁵⁹¹

Evaluation studies demonstrated that the Self-Administered Interview significantly increased accurate recall compared to free-recall conditions.⁵⁹² Some studies showed significantly less suggestion when the Self-Administered Interview was used.⁵⁹³ However, other research showed that the Self-Administered Interview may be most effective when used within 24 hours of an incident⁵⁹⁴, perhaps in line with the benefits of early interviewing to inoculate a witness against misinformation.⁵⁹⁵

Interviewing aids

Preverbal children and pre-schoolers in particular may convey their experiences non-verbally, which invites the use of non-verbal techniques. However, these techniques require careful use if at all as some non-verbal techniques can increase recall error rates despite increasing amount recalled. Some interview protocols condone the use of anatomically correct dolls⁵⁹⁶ to help children further explain already-disclosed complaints (as can be the case in up to 49

⁵⁹¹ Fiona Gabbert et al, 'Protecting Eyewitness Evidence: Examining the Efficacy of a Self-administered Interview Tool' (2009) 33(4) *Law and Human Behavior* 298, 301.

⁵⁹² Ibid.

⁵⁹³ Fiona Gabbert et al, 'Protecting against Misleading Post-Event Information with a Self-administered Interview' (2012) 26(4) *Applied Cognitive Psychology* 568.

⁵⁹⁴ Helen M Paterson, Hester Eijkemans and Richard I Kemp, 'Investigating the Impact of Delayed Administration on the Efficiency of the Self-Administered Interview' (2015) 22(2) *Psychiatry, Psychology, and Law* 307.

⁵⁹⁵ Emyo Wang, Helen Paterson and Richard Kemp, 'The Effects of Immediate Recall on Eyewitnesses Accuracy and Susceptibility to Misinformation' (2014) 20(7) *Psychology, Crime and Law* 619.

⁵⁹⁶ Mark D Everson and Barbara W Boat, 'Putting the Anatomical Doll Controversy in Perspective: An Examination of the Major uses and Criticisms of the Dolls in Child Sexual Abuse Evaluations' (1994) 18(2) *Child Abuse & Neglect* 113

per cent of RATAc interviews).⁵⁹⁷ However, research has shown little or no support⁵⁹⁸ for the use of anatomical dolls or body diagrams. Some research on non-verbal aids described dolls and drawing as providing a facilitation or support role when there are short or long interview delays. But studies have found only slight or no benefits when using dolls over drawings.⁵⁹⁹ Supplementary techniques – such as interviewers’ using props, toys, photographs and human figure diagrams⁶⁰⁰ – may help children to narrate their abusive experiences. These must be used carefully, and ideally after earlier spontaneous disclosure. Props may also help build rapport, act as retrieval cues or serve as a non-verbal response to questions, particularly when children have linguistic difficulties.⁶⁰¹ Additional anatomy identification techniques⁶⁰² include asking children below the age of six if they can discriminate gender based on anatomically detailed drawings and children below the age of 10 if they can name body parts on similar drawings.

Finally, touch inquiry includes yes/no questions, with follow-up questions about whether children understand the difference between appropriate and inappropriate touching. Some

⁵⁹⁷ Patti Toth, ‘Comparing the NICHd and RATAc Child Forensic Interview Approaches: Do the Differences Matter?’ (2011) 20(1) *The Link* 1, 4. RATAc stands for an interviewing approach based on the following elements: Rapport, Anatomy Identification, Touch Inquiry, Abuse Scenario, and Closure.

⁵⁹⁸ Maggie Bruck, Stephen J Ceci, Emmett Francoeur and Ashley Renick, ‘Anatomically Detailed Dolls do Not Facilitate Preschoolers’ Reports of a Pediatric Examination Involving Genital Touching’ (1995) 1(2) *Journal of Experimental Psychology: Applied* 95; Lisa Dupree et al, ‘How Children Verbally Reported Their Experiences of a Genital Exam’ (2016) 26(1) *Journal of Human Behavior in the Social Environment* 110; Gail S Goodman and Christine Aman, ‘Children’s Use of Anatomically Detailed Dolls to Recount an Event’ (1990) 61(6) *Child Development* 1859; Nicole Lytle, Kamala London, and Maggie Bruck, ‘Young Children’s Ability to Use Two-Dimensional and Three-Dimensional Symbols to Show Placements of Body Touches and Hidden Objects’ (2015) 134 *Journal of Experimental Child Psychology* 30; Henry Otgaar, Tom Smeets and Maarten Peters, ‘Children’s Implanted False Memories and Additional Script Knowledge’ (2012) 26(5) *Applied Cognitive Psychology* 709; Debra A Poole and Jason J Dickinson, ‘Evidence Supporting Restrictions on Uses of Body Diagrams in Forensic Interviews’ (2011) 35(9) *Child Abuse & Neglect* 654; Emma Willcock, Kirstie Morgan, Harlene Hayne, ‘Body Maps do not Facilitate Children’s Reports of Touch’ (2006) 20(5) *Applied Cognitive Psychology* 607.

⁵⁹⁹ Karen Salmon and Margaret-Ellen Pipe, ‘Recalling an Event One Year Later: The Impact of Props, Drawing and a Prior Interview’ (2000) 14(2) *Applied Cognitive Psychology* 99.

⁶⁰⁰ Deirdre A Brown et al, ‘Supportive or Suggestive: Do Human Figure Drawings Help 5- to 7-year-old Children to Report Touch?’ (2007) 75(1) *Journal of Consulting and Clinical Psychology* 33; Deirdre A Brown et al, ‘How Do Body Diagrams Affect the Accuracy and Consistency of Children’s Reports of Bodily Touch Across Repeated Interviews’ (2012) 26(2) *Applied Cognitive Psychology* 174; Maggie Bruck, Kristen Kelley and Debra Anne Poole, ‘Children’s Reports of Body Touching in Medical Examinations: The Benefits and Risks of Using Body Diagrams’ (2016) 22(1) *Psychology, Public Policy, and Law* 1.

⁶⁰¹ Deirdre A Brown, ‘The Use of Supplementary Techniques in Forensic Interviews with Children’ in Michael E Lamb et al (eds), *Children’s Testimony: A Handbook of Psychological Research and Forensic Practice* (John Wiley & Sons, 2nd ed, 2011) 217.

⁶⁰² Research using the NICHd protocol and examining the benefit, if any, of using nonverbal aids such as body diagrams, drawing and puzzles with children aged between five and seven confirmed that touch disclosures did not show significant benefits of non-verbal props at interview: Karen Salmon et al, ‘Do Non-Verbal Aids Increase the Effectiveness of ‘Best-Practice’ Verbal Interview Techniques? An Experimental Study’ (2012) 26(3) *Applied Cognitive Psychology* 370.

researchers doubted the utility of these questions⁶⁰³, and mixed⁶⁰⁴ or non-supportive⁶⁰⁵ results for touch inquiry emerged.

8.4 Accommodating individual differences

When evaluating forensic interviews with child sexual abuse victims, it is important to consider whether they are developmentally appropriate and sensitive to the memory capacities of interviewees. This includes carefully matching interview techniques with the known or estimated memory capacities of interviewees with intellectual impairments; and whether the techniques are adaptive and valid in cross-cultural interviews. Examples of developmentally appropriate approaches include narrative-based interviewing⁶⁰⁶, with emphasis on how to use appropriate question types with children, including child victims of sexual abuse.⁶⁰⁷

In terms of interviewing individuals with intellectual disabilities, research shows that the NICHD-R protocol, especially if used soon after an event⁶⁰⁸ and with open prompting questions⁶⁰⁹, may be appropriate and can have memory benefits.⁶¹⁰ Some researchers

⁶⁰³ Debra A Poole, Jason J Dickson and Sonja P Brubacher, 'Sources of Unreliable Testimony from Children' (2014) 19(2) *Roger Williams University Law Review* 382.

⁶⁰⁴ Patricia Y Hashima, Keith Barton and Margaret S Steward, 'What Does 'Touch' Mean to Young Children? An Empirical Study' (1988) 67(3) *Perceptual and Motor Skills* 683.

⁶⁰⁵ Maggie Bruck, 'Human Figure Drawings and Children's Recall of Touching' (2009) 15(4) *Journal of Experimental Psychology: Applied* 361.

⁶⁰⁶ A narrative approach can be said to be 'non-directive, non-leading open-ended questions; these are questions that encourage elaborate detail without presuming or suggesting information and without dictating what information needs to be recalled': Patrick Tidmarsh, Martine B Powell and Elli Darwinkel, 'Whole Story: A New Framework for Conducting Investigative Interviews About Sexual Assault' (2012) 4(2) *Investigative Interviewing: Research and Practice* 35, 34. For approaches such as the Developmental Narrative Elaboration Interview, see Karen J Saywitz and Lorinda B Camparo, *Evidence-based Child Forensic Interviewing: The Developmental Narrative Elaboration Interview* (Oxford University Press, 2014).

⁶⁰⁷ Martine B Powell and Pamela C Snow, 'Guide to Questioning Children During the Free-narrative Phase of an Investigative Interview' (2007) 42(1) *Australian Psychologist* 57; see also Martine B Powell et al, *An Evaluation of How Evidence is Elicited from Complainants of Child Sexual Abuse* (Royal Commission in Institutional Responses to Child Sexual Abuse, 2016).

⁶⁰⁸ Deirdre A Brown, Charlie N Lewis and Michael E Lamb, 'Preserving the Past: An Early Interview Improves Delayed Event Memory in Children with Intellectual Disabilities' (2015) 86(4) *Child Development* 1031.

⁶⁰⁹ Deirdre A Brown, et al, 'Interviewers' Approaches to Questioning Vulnerable Child Witnesses: The Influences of Developmental Level Versus Intellectual Disability Status' (2017) *Legal and Criminological Psychology*, doi: 10.1111/lcrp.12104.

⁶¹⁰ Deirdre A Brown, and Michael E Lamb, 'Can Children Be Useful Witnesses? It Depends How They Are Questioned' (2015) 9(4) *Child Development Perspectives* 250; Deirdre A Brown and Charlie N Lewis, 'Competence is in the Eye of the Beholder: Perceptions of Intellectually Disabled Child Witnesses' (2013) 60(1) *Journal of Disability, Development and Education* 3; Deirdre A Brown et al, 'The NICHD Investigative Interview Protocol: An Analogue Study' (2013) 19(4) *Journal of Experimental Psychology: Applied* 367; Deirdre A Brown et al, 'The Influences of Delay and Severity of Intellectual Disability on Event Memory in Children' (2012) 80(5) *Journal of Consulting and Clinical Psychology* 829. See also: Rebecca Nathanson, 'Helping Children Tell What Happened: Implications for Reducing Child Abuse in Children with Disabilities'

expressed doubts about the utility of the cognitive interview with distressed victims with intellectual disabilities.⁶¹¹ However, evidence is mixed when memory performance with a cognitive interview is compared to a standard interview.⁶¹² Some studies supported using the cognitive interview for severely intellectually disabled child victims.⁶¹³ It is critical to avoid asking leading questions with interviewees with intellectual disabilities.⁶¹⁴

8.5 Interview training and operational implementation

Researchers have studied the baseline and untrained ability of investigative officers to interview child victims in a way that facilitates their memory performance. Understanding their abilities can allow the implementation of core features in interview protocol training.⁶¹⁵ Furthermore, understanding best-practice techniques can improve the quality of investigations and avoid heuristic biases in investigative choices.⁶¹⁶ Training in interview skills such as using open-ended and other important question types is essential in eliciting a disclosure of child sexual abuse, and has been shown to significantly increase the proportion of open-ended questions used, even when learned interview skills are tested in real-time and online with actors as the interviewees.⁶¹⁷

Experiential reflections and research on training programs have emphasised that the following crucial elements should be included in training programs for interviewing children: beliefs about effective interviewing; a framework that maximises recall of narrative detail;

(2000) 4(4) *Multicultural and Diversity Newsletter*; Rebecca Nathanson and Joe N Crank, 'Interviewing Children with Disabilities' (2004) *Children's Law Manual* 31.

⁶¹¹ Robyn E. Holliday et al, 'The Cognitive Interview: Research and Practice across the Lifespan' in Ray Bull, Tim Valentine and Tom Williamson (eds), *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* (John Wiley & Sons, 2009) 137.

⁶¹² Mia Gentle et al, 'Does the Cognitive Interview Promote the Coherence of Narrative Accounts in Children With and Without an Intellectual Disability?' (2013) 60(1) *International Journal of Disability, Development and Education* 30.

⁶¹³ Rebecca Milne et al, 'Assessing the Effectiveness of the Cognitive Interview for Children with Severe Intellectual Disabilities' (2013) 60(1) *International Journal of Disability, Development, and Education* 18.

⁶¹⁴ Peter V Bowles and Stefanie J Sharman, 'A Review of the Impact of Different Types of Leading Interview Questions on Child and Adult Witnesses with Intellectual Disabilities' (2014) 21(2) *Psychiatry, Psychology, and Law* 205.

⁶¹⁵ Misun Yi, Michael E Lamb and Eunkuung Jo, 'The Quality of Korean Police Officers' Investigative Interviews With Alleged Sexual Abuse Victims as Revealed by Self-report and Observation' (2015) 30(4) *Journal of Police and Criminal Psychology* 274.

⁶¹⁶ Martine B Powell, Carolyn H Hughes-Scholes and Stefanie J Sharman, 'Skill in Interviewing Reduces Confirmation Bias' (2012) 9(2) *Journal of Investigative Psychology and Offender Profiling* 126.

⁶¹⁷ Mairi S Benson and Martine B Powell, 'Evaluation of a Comprehensive Training Scheme for Investigative Interviews' (2015) 21(3) *Psychology, Public Policy and Law* 309; Martine B Powell, Belinda Guadagno and Mairi Benson, 'Improving Child Investigative Interviewer Performance Through Computer-based Learning Activities' (2016) 26(4) *Policing and Society* 365.

clear instructions on how to implement any framework; opportunities for ongoing practice; expert feedback⁶¹⁸; and regular ongoing evaluation of interviewer performance.⁶¹⁹

Some suggested and demonstrated keys to success for training interview practices include commencing training early in the career of an investigator to avoid having to undo bad interviewing habits⁶²⁰; ensuring adoption of a narrative framework when interviewing; maintaining the quality of training; attending to the interviewer's workplace climate; allowing prosecutors to give feedback to interviewers; allowing adult trainees to role-play as the child complainant⁶²¹; and committing to ongoing case tracking and evaluation.⁶²²

More recent evaluations of training systems reinforce points relating to the nature of the training challenge, such as the need for multiple modules, distributed over time, with repeated opportunities for interviewers to consolidate their learning.⁶²³

Key points on investigative interviews

- The type of questions asked tend to influence the information retrieved from memory. The most reliable and accurate memory reports are generally provided in response to free-recall prompts. Leading questions, questions posing options for agreement and other forms of suggestive questioning tend to lead to errors. Cross-examination style questions that do not include free-recall prompts tend to impair the memory reports of victims at the time of retrieval, particularly of pre-schoolers, primary school children and distressed witnesses.
- Preverbal children and pre-schoolers in particular may convey their experiences non-verbally, thus non-verbal memory techniques should be considered. However, attention should be given to which non-verbal memory technique, aid or prop is used.

⁶¹⁸ Missy Wolfman, Deirdre Brown and Paul Jose, 'Examining Forensic Interviewers' Perceptions of Practice-Focused Supervision' (2016) *Australian and New Zealand Journal of Criminology*, DOI: 10.1177/0004865816655588.

⁶¹⁹ Martine B Powell, 'Designing Effective Training Programs for Investigative Interviewers of Children' (2008) 20(2) *Current Issues in Criminal Justice* 189; Martine B Powell, and Mark Barnett, 'Elements Underpinning Successful Implementation of a National Best-Practice Child Investigative Interviewing Framework' (2015) 22(3) *Psychiatry, Psychology, and Law* 368.

⁶²⁰ Martine B Powell et al, 'The Relationship between Investigative Interviewing Experience and Open-Ended Question Usage' (2014) 15(4) *Police Practice and Research: An International Journal* 283.

⁶²¹ Martine Powell et al, 2011, 'Enhancing Narrative Coherence in Simulated Interviews About Child Abuse' (2011) 34(2) *Policing: An International Journal of Police Strategies and Management* 198; Martine Powell et al, 'Examination of the Consistency of Interviewer Performance Across Three Distinct Interview Contexts' (2010) 16(7) *Psychology, Crime & Law* 585.

⁶²² Martine B Powell, 'An Overview of Current Initiatives to Improve Child Witness Interviews about Sexual Abuse' (2013) 25(2) *Current Issues in Criminal Justice* 711.

⁶²³ Michael E Lamb et al, 'Difficulties Translating Research on Forensic Interview Practices to Practitioners: Finding Water, Leading Horses, But Can We Get Them to Drink?' (2016) 71(8) *American Psychologist* 710.

- When victims are asked to retrieve memories of child sexual abuse, individual differences need to be considered and accommodated. Children with severe intellectual disabilities usually require support from people who understand their communication styles and abilities.
- Multiple interviews can assist victims to recall more information as they can have a reminiscence effect. Repeated recall of an event generally increases the memory quantity and accuracy of details reported. Incremental reporting across multiple interviews with short gaps between interviews may facilitate more accurate and complete memory reports.
- Repeated recall questions on the same topic may lead children to infer that their previous answer was incorrect, and as a result, they may doubt and change their answers, leading to inaccuracies and inconsistencies in their responses.

Chapter 9

Education on memory

Law reform commissions, tribunals and judicial and psychological professional associations have published guidance on memory to educate decision-makers, enabling them to take judicial notice of such matters, potentially reducing the need for expert witnesses. However, these educative efforts share shortcomings, either because they omit topics relevant to child sexual abuse, or because the research they rely on does not reflect scientific consensus or is outdated. Traditional educational methods related to legal procedures cover expert witness evidence and judicial directions. Expert witness evidence admitted in cases of child sexual abuse in some jurisdictions like New Zealand has included counterintuitive evidence. This report reviews research evaluating the effectiveness of expert evidence in sensitising juries to factors that affect memory and the timing of this evidence. It also outlines research on trial simulations conducted on innovative judicial directions about memory and on the timing of these directions. Appropriate circumstances for using expert witness testimony and judicial directions to educate juries about memory are yet to be determined. The findings of this report can be used in educational programs on memory in cases of child sexual abuse for law enforcement officers, legal professionals, courts and juries. Future research is recommended to test the effectiveness of educative interventions on memory for law enforcement officers, legal professionals, courts and juries.

This chapter reviews examples of attempts to educate audiences in Australia and elsewhere – audiences that are untrained in psychology – about memory as it relates to child sexual abuse. The discussed interventions that would educate courts, law enforcement and legal practitioners about memory processes include guidance compiled by professional psychological associations, evidence law provisions permitting greater use of expert witnesses, and calls for the expansion of substantive judicial directions on memory.⁶²⁴ Where the educative interventions have been empirically studied, this chapter summarises the results of that research

9.1 Guidance on memory and the law

Most educative guidance on memory and the law has been prepared by legal scholars and practitioners.

⁶²⁴ Royal Commission into Institutional Responses to Child Sexual Abuse, *Criminal Justice Consultation Paper*, (Commonwealth of Australia, 2016), 45–48; 451–485.

Law Reform Commissions Memory Guidance

Over a decade ago, a wide-scale inquiry into the operation of the Uniform Evidence Law was undertaken.⁶²⁵ This project, initiated jointly by the Australian Law Reform Commission (ALRC), the New South Wales Law Reform Commission (NSWLRC), and the Victorian Law Reform Commission (VLRC), culminated in 2006 with a report including recommendations for the reform of Uniform Evidence Law. One of the joint commissions' recommendations was that the 'fresh in the memory' legal requirement applicable to hearsay evidence by a complainant under s 66 of the Uniform Evidence Law should not be constrained temporally.⁶²⁶ This determination was reached after considering how factors other than the passage of time might operate to keep a memory 'fresh'.⁶²⁷ In making this recommendation, the commissions drew on psychological research in support of the proposition that remarkable events are remembered differently to unremarkable events, specifying four topics of memory research in support of their views: (1) the effect of emotional arousal; (b) trauma and memory; (c) rates of forgetting; and (d) the misinformation effect. The commissions' reports included summaries on these topics that reflect there is no research consensus. The commissions did not distinguish between the memories of children and adults, or address memories for recurring events. No consideration was given to other factors that may mediate the effects of stress and trauma on memory, or their influence during different memory operations. Most of the studies cited by the commissions were conducted before 1995; thus, this guidance does not provide a contemporary view of research on these topics.

Bench Book for Children Giving Evidence in Australian Courts

In 2004, the Australasian Institute of Judicial Administration developed a bench book to provide information to judicial officers on child witnesses and complainants giving evidence in criminal proceedings. The *Bench Book for Children Giving Evidence in Australian Courts* was released in 2009 and was last updated in 2015.⁶²⁸ The aim of the bench book was to offer

⁶²⁵ Australian Law Reform Commission, NSW Law Reform Commission and Victorian Law Reform Commission (2006) *Uniform Evidence Law Report (ALRC Report 102; NSWLRC Report 112; VLRC Final Report)*, Australian Law Reform Commission: Sydney.

⁶²⁶ *Ibid*, [8.75-8.79]; [8.86]-[8.112].
<<http://www.alrc.gov.au/sites/default/files/pdfs/publications/ALRC102.pdf>>.

⁶²⁷ See, for example, Annie Cossins and Jane Goodman-Delahunty, 'The Application of the Uniform Evidence Law to Delay in Child Sexual Assault Trials' in Andrew Roberts and Jeremy Gans (eds), *Critical Perspectives on the Uniform Evidence Law* (Federation Press, 2017); Jane Goodman-Delahunty, Natalie Martschuk and Annie Cossins, 'What Australian Jurors Know and Do Not Know About Child Sexual Abuse Cases' (2017) 41 *Criminal Law Journal* 1.

⁶²⁸ The Australasian Institute of Judicial Administration Incorporated, *Bench Book for Children Giving Evidence in Australian Courts*, (updated February 2015), chapters 2.4-9; The Judicial Commission of New South Wales, *Equality Before the Law Bench Book* (2006) Chapter 6 (updated 2009), Children, 1999; The Judicial Commission of New South Wales, *Criminal Trial Courts Bench Book* (2007), Trial Procedure Child witness/accused, 19, 23.

advice to judicial officers presiding over sexual abuse trials. Sections 2.8 and 2.9 of the bench book provide brief information on children’s memory but not a consensus view of research on the topic. Other limitations are lack of coverage of adult memories or the effects of intellectual disabilities, age and delay on memories of child sexual abuse. The bench book contains no psychological research on children’s memory published since 2006, and lacks explanations for the findings presented.

Commonwealth Administrative Appeals Tribunal guidelines

The Commonwealth Administrative Appeals Tribunal advises decision-makers in the Migration and Refugee Division on topics⁶²⁹ such as assessing the credibility of witnesses⁶³⁰, vulnerable witnesses and trauma.⁶³¹ The notes on credibility include advice that trauma may produce apparent inconsistencies (Guideline 29), and that trauma victims may have poor memory for the location, duration and timing of an event (Guidelines 30 and 31). Similarly, the ‘Guideline on Vulnerable Persons’ emphasises the influence of contextual features on individual responses to trauma:

The nature of the reaction is influenced by the nature of the traumatic events (whether accidental or intended), the length of exposure, the age of the victim and protective factors such as the degree of control at the time, support systems, coping skills and belief systems.⁶³²

The potential detrimental effect of trauma on memory is acknowledged in Guideline 92:

Common symptoms, which follow the experience of traumatic events are anxiety symptoms, dissociative symptoms, poor attention and concentration, memory problems, depressive symptoms, suicidal ideation, physical symptoms (digestive, cardiopulmonary, sexual problems, chronic pain), symptoms characteristic of posttraumatic stress disorder, and

⁶²⁹ ‘Legislation, Policy and guidance’ section of the Administrative Appeals Tribunal’s Migration and Refugee Division, <<http://www.aat.gov.au/migration-and-refugee-division/mrd-resources/legislation-policies-and-guidelines.>>

⁶³⁰ Administrative Appeals Tribunal’s Migration and Refugee Division, *Guidelines on Assessment of Credibility* <<http://www.aat.gov.au/AAT/media/AAT/Files/MRD%20documents/Legislation%20Policies%20Guidelines/Guidelines-on-Assessment-of-Credibility.pdf.>>

⁶³¹ Administrative Appeals Tribunal’s Migration and Refugee Division, *Guidelines on Vulnerable Persons* <<http://www.aat.gov.au/AAT/media/AAT/Files/MRD%20documents/Legislation%20Policies%20Guidelines/Guidelines-on-Vulnerable-Persons.pdf.>>

⁶³² Guideline number 89 in AAT Migration and Refugee Division, *Guidelines on Vulnerable Persons* (p. 19) <<http://www.aat.gov.au/AAT/media/AAT/Files/MRD%20documents/Legislation%20Policies%20Guidelines/Guidelines-on-Vulnerable-Persons.pdf.>>

behavioural problems including risk taking behaviours and addictive behaviours.⁶³³

This summary guidance is broad and general in scope, and does not refer to any scientific sources. While the guidelines address issues related to the effects of trauma on memory, they are not specific to children's memories.

The British Psychological Society Guidelines on Memory and the Law

One accessible set of guidelines, endorsed by the British Psychological Society in 2008 and republished in 2010, is *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* ('the BPS Guidelines').⁶³⁴ The BPS Guidelines are intended to provide a consensus view of accurate, scientific information about matters relating to memory that may arise in legal proceedings.

Eight discrete research topics about memory processes were distinguished: (1) autobiographical memory and memory for childhood events; (2) repeated events; (3) the effects of delay on memory; (4) reality monitoring; (5) visual-spatial memory; (6) trauma/stress and memory; (7) memory of vulnerable groups, including children and the elderly; and (h) witness interviews. The key points were intended as general guidelines rather than absolute factors in a particular case.⁶³⁵

Members of the legal profession have largely ignored these guidelines, although they have consulted them in a small number of cases in the United Kingdom⁶³⁶ and Australia.⁶³⁷ The BPS Guidelines focus on memory in general, not issues specific to the memory of child sexual abuse or sexual assault. However, the Judicial Commission of New South Wales reproduced the 2008 version as the *Sexual Assault Trials Handbook*.⁶³⁸

The scope of the review that produced the BPS Guidelines means they are not applicable to the questions posed by the Royal Commission. For instance, they do not address the effects on children's memory of persistent sexual abuse, delay or trauma. The research reviewed in

⁶³³ Ibid.

⁶³⁴ The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 2.

⁶³⁵ Ibid, 1.

⁶³⁶ See, for example, *Saunders & Anor, R (on the application of v The Association of Chief Police Officers & Ors* [2008] EWHC 2372, [13], *Ayling v Summers & Ors* [2009] EWHC 3168 and *Muscat v Health Professions Council* [2008] EWHC 2798.

⁶³⁷ Judicial consideration of the BPS Guidelines by an Australian judicial officer occurred in the family law case where Roberts FM cited the BPS Guidelines to support his statement that 'nobody has an infallible memory – especially in relation to the exact word of conversations that took place 18 months earlier': *Hanran & Nott* [2011] FMCAfam 309 [103].

⁶³⁸ Judicial Commission of New South Wales, *Sexual Assault Trials Handbook* (Judicial Commission of New South Wales, 2007) [7-500].

compiling the BPS Guidelines is current to 2007; thus, it does not take into account the recent shift in perspectives on children's suggestibility, and the potential benefits of the reminiscence effects in supplementary interviews.

9.2 Education and training on memory

A number of commentators have suggested that special training on aspects of human memory for police, prosecutors, judges and juries may help address misconceptions about memory that may lead to erroneous decisions and verdicts.⁶³⁹ Chapter 2 discusses the various common misperceptions about human memory which can be held by police officers, legal professionals and jurors.

Many training programs for investigative interviewers include some basic education on child development and individual differences, including memory processes.⁶⁴⁰ However, the primary focus of interviewer training is learning and applying interview techniques, not the body of psychological scientific research on memory that underpins those techniques. Arguably, both need to be emphasised when training investigative interviewers to reduce misperceptions about memory.

The core findings of the guidance contained in this report may be useful as the basis for judicial training on memory. Such training is commonly provided by the National Judicial College of Australia⁶⁴¹ and the Judicial College of Victoria⁶⁴² via courses, workshops and thematic conferences. Greater awareness among lawyers and judges of the nature of memory will indirectly benefit deliberating juries.

Expert witness evidence and judicial directions are among the traditional legal procedural safeguards used to reduce jury biases and misconceptions on a wide range of topics. To date, research on the effectiveness of these measures to educate juries about memory in cases of child sexual abuse is relatively unknown as research on these topics is limited. In the next sections of this chapter, we review legal developments and related research on these topics.

⁶³⁹ James M Doyle, 'Ready For the Psychologists: Learning From Eyewitness Errors' (2012) 48(1-2) *Court Review: The Journal of the American Judges Association* 4-12; Martin A Conway, 'Ten Things the Law and Others Should Know about Human Memory' in Lynn Nadel and Walter P Sinnott-Armstrong (eds), *Memory and Law* (Oxford University Press, 2012) 359-372; Christopher C French and James Ost, 'Beliefs About Memory, Childhood Abuse, And Hypnosis Among Clinicians, Legal Professionals, And The General Public' in Ros Burnett (ed), *Wrongful Allegations of Sexual and Child Abuse* (Oxford University Press, 2016).

⁶⁴⁰ Ann-Christin Cederborg et al, 'Investigative Interviewing of Alleged Child Abuse Victims: An Evaluation of a New Training Programme for Investigative Interviewers (2013) 14(3) *Police Practice and Research* 242.

⁶⁴¹ <https://njca.com.au/>

⁶⁴² <http://www.judicialcollege.vic.edu.au/>

9.3 Educative expert witness evidence

Courts have recognised the need to educate fact finders on topics that are commonly unknown or subject to misconceptions by allowing expert evidence on those topics in criminal cases. Educative information based on scientific research findings ‘play[s] an important part in helping to ensure that juries assess the evidence with the benefit of current scientific understanding’.⁶⁴³ In different countries and jurisdictions, different types of expertise on memory have been admitted as evidence.

Specialised knowledge on the development and behaviour of sexually abused children

In Australia, provisions of the Australian Uniform Evidence Law – such as section 108C⁶⁴⁴ and section 79(2)⁶⁴⁵ – allow experts to introduce general and case-specific evidence about a child witness’s memory or other development. However, a review of section 108C cases reveals that this provision has rarely been invoked in cases of child sexual abuse. Section 79(2) has been similarly underused, despite the fact that it allows, in addition to s 79(1), an expert to give evidence based on: ‘specialised knowledge’; an opinion on the development and behaviour of children generally; and/or the development and behaviour of children who have been victims of sexual offences, or offences similar to sexual offences.

Although the legislative provisions do not specifically mention specialised knowledge about memory development, they appear to encompass this topic.

Counterintuitive expert evidence on child sexual abuse

Section 25 of the *Evidence Act 2006* (NZ) allows experts to give evidence on an ultimate issue and on a matter of common knowledge. Under this law, an expert in child sexual abuse trials may give ‘counterintuitive evidence’ where the common knowledge of the jury is expected to include misconceptions about memory and other psychological dynamics.⁶⁴⁶ Empirical research on the nature of expert counterintuitive evidence given by experts reveals that most testimony is about matters such as delayed reporting, (ongoing) relationships, affection between victims and abusers, and the grooming relationship.⁶⁴⁷

⁶⁴³ The American Psychological Association, ‘Brief for Amicus Curiae’ to the Supreme Court of Virginia in relation to the appeal of *Payne v Virginia* (2016) Record No 151524, 11.

⁶⁴⁴ See for example, *Evidence Act 1995* (NSW); Royal Commission into Institutional Responses to Child Sexual Abuse, *Criminal Justice Consultation Paper*, (Commonwealth of Australia, 2016), 478–480.

⁶⁴⁵ *Ibid.*

⁶⁴⁶ Suzanne Blackwell, Royal Commission into Institutional Responses to Child Sexual Abuse, Public Roundtable, ‘Memory of Childhood Sexual Abuse and The Law Criminal Justice’, March 31 2017, Hearing Room 2, Level 17, Governor Macquarie Tower, Farrer Place, Sydney, 105, lines 25-47; 106, lines 1–47; 107, lines 1–6.

⁶⁴⁷ Fred Seymour et al, ‘Counterintuitive Expert Psychological Evidence in Child Sexual Abuse Trials in New Zealand’ (2014) 21(4) *Psychiatry, Psychology, and Law* 511, 511; 512.

Appeals challenging the use of counterintuitive evidence in New Zealand have raised a range of interesting issues. For example, in *Kohai v The Queen*⁶⁴⁸, the court found no adverse prejudicial effect of the counterintuitive evidence. In *DH v The Queen*⁶⁴⁹, where the appellate court responded to a challenge to its scientific basis of the expert counterintuitive evidence – plus the potential prejudicial effect (beyond restoring a neutral balance) and appropriateness of the form of the evidence – the court concluded: ‘We do not think it is appropriate to be prescriptive about how erroneous beliefs or assumptions are best to be countered in criminal trials’.⁶⁵⁰ The court suggested that the counterintuitive evidence should not stray beyond the test for relevance of expert evidence in New Zealand – the ‘substantially helpful’ test⁶⁵¹ – but did not find any proven grounds of appeal mounted against this evidence.

These recent cases and the ongoing practice of admitting counterintuitive evidence in cases of child sexual abuse in New Zealand, and preliminary research on the effectiveness of this type of expert evidence, show that this approach appears to be on a solid legal footing in that country. Moreover, research on New Zealand jurors who served on child sexual abuse trials without expert evidence revealed their views that guidance on children’s behaviour, memory and reliability would have assisted them in their decisions. Some jurors indicated that they were not knowledgeable enough about these matters.⁶⁵²

Factors and circumstances that can affect memory accuracy

In many jurisdictions in North America, expert witness evidence on factors that affect the memory of adults and children is admitted in jury trials. Most research on the effectiveness of that expert evidence has been conducted on eyewitness memory experts. Studies of the effectiveness of expert witness evidence on factors and circumstances that can affect memory showed that it can increase jury knowledge and sensitivity to factors that influence the reliability and accuracy of memory, and assist them in determining the veracity of reported memories.⁶⁵³

⁶⁴⁸ [2015] NZSC 36.

⁶⁴⁹ [2015] NZSC 35.

⁶⁵⁰ *Ibid*, [110].

⁶⁵¹ *Ibid*.

⁶⁵² Suzanne Blackwell and Fred Seymour, ‘Expert Evidence and Juror’s Views on Expert Witnesses’ (2015) 22(5) *Psychiatry, Psychology and Law* 673.

⁶⁵³ Brian L Cutler, Steven D Penrod, and Hedy R Dexter, ‘The Eyewitness, the Expert and the Jury’ (1989) 13(3) *Law and Human Behavior* 311; Jennifer L Devenport et al, ‘How Effective Are the Cross-Examination and Expert Testimony Safeguards? Jurors’ Perceptions of the Suggestiveness and Fairness of Biased Lineup Procedures’ (2002) 87(6) *Journal of Applied Psychology* 1042.

The influence of investigative interviewing techniques on memory

In some North American jurisdictions, courts have admitted expert evidence about how the quality of an investigative interview can influence a child's memory report. The effectiveness of this type of expert evidence was tested in a trial simulation study in which expert evidence about interview practices was presented, and the quality of the interview was either poor or good. Mock-juror knowledge of interview practices increased significantly when expert evidence was provided, and this knowledge predicted verdicts: convictions increased appropriately with high-quality interviews, and acquittals increased appropriately with low-quality interviews.⁶⁵⁴

The effect of the timing of expert evidence

Research that examined the effect of the timing of the presentation of expert evidence in a simulated rape trial showed that the specialised educative information was more effective when presented early in the trial and was related to the case facts.⁶⁵⁵ Similarly, in a homicide trial following domestic violence, the timing of the expert evidence was more effective when presented early; that is, before the testimony of the defendant, rather than at a later point in the trial.⁶⁵⁶

9.4 Judicial directions on memory

The second traditional legal measure used to educate juries about memory in criminal cases is to provide this information in judicial directions in one of three types: directions about the credibility of a witness; directions about factors that may influence the reliability of a witness, such as a young age; and directions that summarise general scientific findings in lieu of presenting this information in expert witness testimony.

Although judicial directions given in cases of child sexual abuse in Australia have mainly consisted of warnings relating to corroboration⁶⁵⁷ and delayed complaints⁶⁵⁸, there has been some empirical research in the United States and Australia regarding jury directions that present scientific findings about memory.

⁶⁵⁴ Julie A Buck, Kamala London and Daniel B Wright, 'Expert Testimony Regarding Child Witnesses: Does it Sensitize Jurors to Forensic Interview Quality?' (2011) 35(2) *Law and Human Behaviour* 152.

⁶⁵⁵ Nancy Brekke and Eugene Borgida, 'Expert Psychological Testimony in Rape Trials: A Social Cognitive Analysis' (1988) 55(3) *Journal of Personality and Social Psychology* 372.

⁶⁵⁶ Regina A Schuller and Janice Cripps, 'Expert Evidence Pertaining to Battered Women: The Impact of Gender of Expert and Timing of Testimony' (1998) 22(1) *Law and Human Behavior* 17.

⁶⁵⁷ *R v Murray* (1987) 1 NSWLR 12.

⁶⁵⁸ *Crofts v the Queen* (1996) 186 CLR 427; *Longman v the Queen* (1989) 168 CLR 79.

Empirical findings on judicial directions on memory

Empirical evaluations of the effectiveness of judicial directions can provide helpful guidance to law reformers. In California, a cautionary direction (in lieu of expert witness evidence) that informs juries of the fragility of human memory associated with identification was tested in trial simulation studies.⁶⁵⁹ The direction, based on psychological scientific memory research, was given in the judicial summation. It advised juries of factors they should consider when evaluating memory about an identification. Trial simulation studies established that the direction did not sensitise jurors to important factors in witness identification performance.⁶⁶⁰ Other problems relating to the direction included the absence of any explanation about how the factors influenced memory (that is, did they lead to more accurate or inaccurate memories), and whether the basis for the direction was prior case law⁶⁶¹ or scientific research.⁶⁶²

Reviewing these directions in the context of an appeal of a conviction, the Supreme Court of California commented that the directions went beyond the normal role and scope of judicial directions, as they 'would require the trial judge to endorse, and require the jury to follow, a particular psychological theory relating to the reliability of eyewitness identifications'.⁶⁶³ Furthermore, directions of this nature have the potential to 'confuse the roles of expert witnesses and the judge'⁶⁶⁴, whereas the same type of specialised knowledge provided by an expert would be less binding on a jury, would be subjected to cross-examination and would allow the jury a more realistic option to reject the evidence.⁶⁶⁵ For these reasons, a court's decision not to give the directions comprised harmless error.⁶⁶⁶

More recent North American trial simulation research testing the effectiveness of judicial directions that present specialised knowledge on the fragility of memory did not increase the abilities of mock jurors to discern the difference between a strong and a weak identification

⁶⁵⁹ *United States v Telfaire*, 469 F.2d 552 (D C Cir 1972).

⁶⁶⁰ Brian H Bornstein and Joseph A Hamm, 'Jury Instructions of Witness Identification' (2012) 377 *Court Review: The Journal of American Judges Association* 48; Edith Greene, 'Judge's Instruction on Eyewitness Testimony: Evaluation and Revision' (1988) 18(3) *Journal of Applied Social Psychology* 3 252.

⁶⁶¹ For instance, legal opinions as to indicators of a reliable memory, such as those articulated in *Neil v. Biggers*, 409 U.S. 188 (1972).

⁶⁶² Jennifer L Devenport et al, 'Effectiveness of Traditional Safeguards against Erroneous Conviction Arising from Mistaken Eyewitness Identification' in Bryan L Cutler (ed), *Expert Testimony on the Psychology of Eyewitness Identification* (Oxford University Press, 2009) 51.

⁶⁶³ *People v Wright* 248 Cal Rptr 600 (1988), II C1 [7a].

⁶⁶⁴ *Ibid.*

⁶⁶⁵ In *People v. McDonald* 248 Cal Rptr 600 (1984), the expert testimony was found to be admissible and 'should have been admitted in the case at bar'.

⁶⁶⁶ *People v Wright* 248 Cal Rptr 600 (1988).

in an eyewitness case.⁶⁶⁷ Unexpectedly, the direction had an opposite effect to that intended. Instead of making jurors more cautious about returning a verdict to convict, mock jurors who received this information were more prone to convict.⁶⁶⁸

The effect of the timing of judicial directions on memory

Notably, the jury directions on memory tested in the North American studies above were all administered in the judicial summation at the end of the trial, after all witnesses had given their evidence. Other empirical studies have tested whether jury directions are more effective when presented during the trial, in advance of the evidence of the relevant witnesses at trial.

For instance, one study conducted in New South Wales tested the influence of the timing of jury directions on decisions of community members serving as mock jurors in a child sexual abuse case involving a single incident of abuse.⁶⁶⁹ The jury directions were presented either before the victim's testimony or during the judicial summation. The directions included specialised educative information about children's responses to sexual abuse, their reliability as witnesses, their suggestibility and their memory for events. Results revealed that only the jury directions presented immediately before the complainant's evidence increased the perceived credibility of the complainant, the perceived culpability of the defendant, and convictions. When the identical jury directions were presented in the judicial summation before jury deliberation, the results were the same as those for mock jurors who received no specialised jury directions.⁶⁷⁰

Findings indicating that the timing of jury direction matters were replicated in other trial simulation research showing that judicial directions that coincided with the presentation of evidence to which they related increased their impact on jury decision making.⁶⁷¹

Expert evidence or judicial direction

A series of Australian trial simulation studies compared the effectiveness of expert specialised knowledge about child sexual abuse and the reliability of children's memories based on psychological scientific research versus judicial directions. When this information was

⁶⁶⁷ The study presented 335 mock jurors with jury instructions created as part of the New Jersey judicial reforms: Athan Papailiou, David Yokum and Christopher Robertson, 'The Novel New Jersey Eyewitness Instruction Induces Skepticism but Not Sensitivity' (2015) 10 *PLoS ONE* 1.

⁶⁶⁸ Mock jurors were twice as likely to convict after receiving the direction.

⁶⁶⁹ Jane Goodman-Delahunty, Annie Cossins and Kate O'Brien, 'Enhancing the Credibility of Complainants in Child Sexual Assault Trials: The Effect of Expert Evidence and Judicial Directions' 28(6) *Behavioural Sciences & the Law* 769.

⁶⁷⁰ *Ibid.*

⁶⁷¹ See, for example, Rachel K Cush and Jane Goodman-Delahunty, 'The Influence of Limiting Instructions on Processing and Judgments of Emotionally Evocative Evidence' (2006) 13(1) *Psychiatry, Psychology, and Law* 10.

presented to mock jurors in a child sexual abuse trial by either an expert witness or via judicial directions, the results showed that both methods were equally effective.⁶⁷² However, another study on the effectiveness of expert evidence versus judicial directions about adult eyewitness memory yielded disparate outcomes, depending on how the specialised information was presented. Mock jurors who received the specialised scientific information from an expert witness were more sceptical about the reliability of the eyewitness, and returned fewer convictions than their counterparts who received the same information in the form of judicial directions.⁶⁷³

9.5 Recommendations for future research on educative interventions

The above discussion highlights the need for ongoing research on effective measures to educate police, lawyers, judges and juries about memory in cases of child sexual abuse. Although much thought and effort has been given to training investigative interviewers about memory while teaching them about investigative interviewing techniques, there is a clear gap in training efforts to acquaint other legal professionals and the courts with memory dynamics that are relevant to cases of child sexual abuse. The New Zealand appellate courts' use of experts to educate juries about counterintuitive evidence demonstrates the need for research that clarifies the best way to use experts as memory educators. Research on the relative benefits of educative experts versus jury directions is in its infancy, and further research in this area would be of strategic and law reform interest in cases of child sexual abuse.

Key points on memory education

- Available guidance on memory in legal settings does not take current research into account and does not address certain important topics affecting memory of child sexual abuse.
- Traditional legal methods used to convey memory research findings are expert witness evidence and judicial directions. Little empirical research on the effectiveness of this guidance has been conducted in cases of child sexual abuse.

⁶⁷² Jane Goodman-Delahunty, Annie Cossins and Kate O'Brien, 'A Comparison of Expert Evidence and Judicial Directions to Counter Misconceptions in Child Sexual Abuse Trials' (2011) 44(2) *Australian and New Zealand Journal of Criminology* 196; Jane Goodman-Delahunty, Natalie Martschuk and Annie Cossins, 'Programmatic Pretest-Posttest Research to Reduce Jury Bias in Child Sexual Abuse Cases' 6(2) *Oñati Socio-legal Series* 283.

⁶⁷³ Angela M Jones et al, 'Comparing the Effectiveness of Henderson Instructions and Expert Testimony: Which Safeguard Improves Jurors' Evaluations of Eyewitness Evidence?' (2017) 13(1) *Journal of Experimental Criminology* 29.

Chapter 10

Conclusion

This report gathered contemporary psychological scientific research evidence that police, lawyers and juries should be aware of when responding to victims of child sexual abuse in general, and in particular to victims of child sexual abuse in institutional contexts. The report accomplished the aims of summarising what victims can be expected to remember about experiences of child sexual abuse, how they can be assisted to optimally remember these experiences, and how this affects their reporting to police and their evidence in legal proceedings. This empirical guidance on memory in cases of child sexual abuse applied a transdisciplinary approach to optimise the way in which the scientific psychological research was translated for use by police, legal practitioners, judges, juries and law reformers. Based on this empirical review, a standalone summary of key guidance on memory was prepared. This guidance was fully cross-referenced to evidence-based sources in each of the substantive chapters of the report.

The research informed three broad questions, as described in Chapter 1.

- What is known about what victims of child sexual abuse can be expected to remember about their experiences of abuse?
- How do victims optimally remember experiences of child sexual abuse; and
- How does this affect their reporting to police and the evidence they should be expected to give in the criminal justice system.

The present report selected relevant research for review, guided by 10 specific topics identified by the Royal Commission:

- misconceptions about memory
- memories for details and core memories of events
- inconsistencies in memory and hypermnesia
- reliability of children's memory
- suggestibility and false memories
- memories for recurring events
- impact of delay on memory
- memory for traumatic events
- impact of cross-examination on children's memory
- educative interventions about memory.

Misconceptions about memory

Misconceptions about memory as outlined in Chapter 2 were the starting points for a realisation that courts often expect too much of – and sometimes not enough of – memories of victims of child sexual abuse. Chapter 2 summarised empirical research, specifying the nature of particular misconceptions, many of which are implicitly or explicitly endorsed by existing criminal justice practices. It also described the aggregation of misconceptions to comprise the Common sense Memory Belief System that diverges extensively from the Scientific Memory Belief System based on contemporary research findings. Notably, the majority of police officers and jury-eligible members of the general public endorsed erroneous attributes of the Common sense Memory Belief System. These findings established the need for educative interventions to redress commonly endorsed misconceptions about memory, and laid the foundation for the chapters that followed, clarifying the memory operations about prevalent memory misperceptions.

Memories for details and core memories of events

Research outlined in chapters 4, 5 and 7 described how psychologists sought to understand whether and how children and adults can and do remember recent or historical experiences of child sexual abuse. Importantly, this research showed which aspects of an abuse experience may be most reliably remembered. An important distinction that emerged, crucial for calibrating expectations of victims' memories of abuse, is whether memory for details or core memories of events were encoded, consolidated and capable of being retrieved by victims who reported episodes in or outside legal proceedings – such as in investigative interviews and trials. A related challenge for lawyers, judges and law reformers is how our expectations about memory's capacity for details versus core memories of events are shaped by legal conventions rather than scientific findings on memory.

Research on memory performance, as demonstrated by the empirical findings summarised in chapters 5–7 in particular, showed that memories about core events are often more stable than memory for minor details or changeable details of recurring experiences. Interestingly, these are precisely the areas where some police, legal practitioners and courts often express most concern about the reliability of victims' memory; they focus perhaps inappropriately on micro-level inconsistencies instead of macro-level or general consistency in the evidence. To the extent those core memories – and not minor details – could and should be more forensically relevant, the present research concluded that legal expectations and processes targeting the retrieval and reporting of core memories should elicit the most reliable and complete account of memories of child sexual abuse.

Inconsistencies in memory and reminiscence

As stated in chapters 4, 7 and 8, research findings discussed in this report highlighted the need for caution in guiding forensic decisions based on the presence of inconsistencies within or between accounts of details of experiences. Empirical research discourages relying on inconsistencies or memory changes following reminiscence as a criterion for disregarding the evidence of a witness. Practices of this nature will result in undue rejection (false negatives) in forensic decisions about complaints of child sexual abuse.

The reliability of children's memory

In a related way, research reported in chapters 4–7 investigated how a range of variables interact with retrieved and reported memories of child sexual abuse. Research findings on investigative interviewing discussed in Chapter 8 made the point that the reliability of a memory about child sexual abuse, retrieved and reported by children (and adults), should be evaluated using best-practice interviewing techniques. The sensitivity of memory to contextual features and retrieval cues indicated that where the interviewing strategies and procedures are sub-optimal, the victim's opportunity to provide a reliable memory of abuse for forensic purposes may be thwarted.

Suggestibility and false memories

Chapters 4 and 5 discussed contemporary research on what causes suggestibility, and whether these antecedents may be naturally occurring influences on some victims' memories. A key message from recent research is that in certain cases, adolescents and adults may in fact be more suggestible than most children.

Chapter 5 detailed the history of psychological research on suggestibility and false memories, and the 'memory wars' between treating clinicians and experimental psychologists. These issues were set in perspective by findings that susceptibility to post-event misinformation is limited to minor details, not core memories. Moreover, only a very small percentage of people recover memories of child sexual abuse in therapy. Contemporary research findings demonstrate that concerns about the prevalence of false memories of child sexual abuse appear to have been exaggerated.

Memories for recurring events

An important and often neglected aspect of child sexual abuse, especially within institutions, is the fact that abuse may occur over an extended period of time. Chapter 7 is a unique contribution of this report; unlike many other examples of guidance on memory, it reviews contemporary research findings on the aspects of recurring events that are most well remembered, and the aspects that are most difficult for children or adults to recall. This research is crucial when investigating and prosecuting abuse perpetrated by trusted and

familiar abusers over lengthy periods of time. Again, perceptions of apparent inconsistencies and weakness in memories of recurring events may be driven by unrealistic expectations and views of memory processes in these contexts. The expectations of police, legal practitioners, courts and juries may be at odds with the research on this topic.

The impact of delay on memory

Similarly, delay is a common variable affecting the apparent strength of an abuse memory for children or adults regarding experiences of child sexual abuse. Chapter 5 unpicks the detailed research literature on memory after delay. By organising the research findings by methodology and memory process (encoding, consolidation and retrieval), it uncovers the factors that strengthen or weaken memory after periods of delay. Counterintuitively, analogue studies conducted in field settings showed the surprising durability of memories in children of all ages.

Memory for traumatic events

Chapter 6 used a similar approach in presenting up-to-date research findings on how stress and trauma can influence the features of retrieved memory. Key findings noted that not all abuse produces trauma, and not all trauma has deleterious effects on memory. How a victim coped, was supported and was skilled at autobiographical memory – and the nature of their traumatic symptomology – are all factors that can have a subtle impact on the apparent credibility and reliability of memories. Another important factor to acknowledge is the nature of the support or stress a victim experienced while remembering the abusive events during an investigative interview or in court, as discussed in Chapter 8.

The impact of cross-examination on children's memory

When evaluating the retrieved memory that results from a forensic process, it is crucial to understand the nature, quality and impact of forensic questioning a victim of child sexual abuse has experienced during investigative interviewing or in court. Research reviewed in chapters 7 and 8 highlights the impact of traditional investigative urges and traditional courtroom questioning styles (such as cross-examination) on complainants, especially if developmental and clinical experts do not provide communication assistance as an intermediary in an interview or court.

Educative interventions about memory

Chapter 9 highlights a number of educative responses that systems and varying professional groups and legal actors can design and deliver. These include using expert witnesses, giving jury directions, and making interdisciplinary or transdisciplinary attempts to translate empirical research into accessible guidance for legal actors. This chapter also gathers comparative perspectives from New Zealand (counterintuitive expert testimony) and the

United States (jury directions on memory), presenting examples of well-researched reactions and those that require further research.

Key points

- This report updated and extended existing guidance on memory in Australia and internationally by addressing the unique challenges and features of child sexual abuse in general, and institutional child sexual abuse in particular.
- The report summarises what victims can be expected to remember about experiences of child sexual abuse, how they can be assisted to optimally remember these experiences, and how this affects their reporting to police and their evidence in legal proceedings.
- This empirical guidance on memory in cases of child sexual abuse applied a transdisciplinary approach to optimise the way in which the scientific psychological research was translated for use by police, legal practitioners, judges, juries and law reformers.
- It includes a succinct standalone plain language summary of guidance on memory in cases of child sexual abuse, drawing on empirical findings across all chapters of the report.

Glossary

Acute stress disorder: A disabling psychological condition that can occur immediately after exposure to a traumatic stressor. Symptoms such as intrusive memories, hyperarousal, and avoidance of situations that recall the traumatic event are the same as those of post-traumatic stress disorder but do not last longer than four weeks. This disorder may include elements of dissociation, such as depersonalisation and derealisation.⁶⁷⁴

Amnesia: Complete or partial loss of memory, temporary or permanent, either because of the inability to store new information in long-term memory, or because of the inaccessibility of previously learned information or past events. Amnesia can be caused by physiological or psychological factors, such as trauma.⁶⁷⁵

Autobiographical memory: Long-term memory of personal experiences and events. This storage of information about specific experiences and events at particular times and places creates a sense of personal continuity and familiarity with the past.⁶⁷⁶

Avoidant coping: Any strategy a person may use to disengage from a stressful situation.⁶⁷⁷

Avoidant encoding: An encoding strategy allowing a person to disengage and redirect attention from a threat, resulting in a mental relief from the abuse when physical escape is impossible. It can foster dissociative phenomena, such as amnesia for traumatic events, and increases risk for post-traumatic stress disorder.⁶⁷⁸

Betrayal trauma: Interpersonal psychological trauma arising when someone on whom a person depends for survival – such as a parent, family member or institution, violates that person's trust or wellbeing.⁶⁷⁹

Case study: A method of research involving detailed investigation of an individual or a single group, often to illustrate a key point.⁶⁸⁰

⁶⁷⁴ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 18.

⁶⁷⁵ Ibid.

⁶⁷⁶ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁶⁷⁷ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 101.

⁶⁷⁸ Richard J McNally et al, 'Directed Forgetting of Trauma Cues in Adult Survivors of Childhood Sexual Abuse with and Without Posttraumatic Stress Disorder' (1998) 107(4) *Journal of Abnormal Psychology* 596; Richard J McNally, Susan A Clancy and Heidi M Barrett, 'Forgetting Trauma?' in Daniel Reisberg and Paula Hertel (eds), *Memory and Forgetting* (Oxford University Press, 2004) 129.

⁶⁷⁹ Jennifer J Freyd, 'Betrayal Trauma' in Gilbert Reyes, Jon D Elhai, Julian D Ford (eds), *The Encyclopedia of Psychological Trauma* (John Wiley and Sons, 2008) 76; Jennifer M Brown and Elizabeth A Campbell (eds), *The Cambridge Handbook of Forensic Psychology* (Cambridge University Press, 2010) 189.

⁶⁸⁰ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

Childhood amnesia: A paucity of memories for the period up to about 5 to 7 years of age.⁶⁸¹

Child maltreatment: Acts of commission or omission by a caregiver that result in physical, sexual, or psychological abuse or neglect of a child.⁶⁸²

Child sexual abuse: Any act involving a child in sexual processes that are beyond the child's understanding or contrary to accepted community standards. This includes a variety of sexually abusive behaviours such as fondling, masturbation, vaginal or anal penetration, voyeurism, exhibitionism, pornography and grooming of a child.⁶⁸³

Child sexual abuse victim: An individual, either an adult or a child who experienced sexual abuse under the age of 18 years.⁶⁸⁴

Coaching: Efforts to encourage and rehearse dishonest or false reports.⁶⁸⁵

Cognitive anxiety: Anticipation of danger, catastrophe or misfortune, coupled with somatic symptoms such as muscle tension and fast breathing.⁶⁸⁶

Cognitive interview: A strategy to improve eyewitness testimony by using a range of interviewing techniques to elicit details about an event. These techniques include open-ended questioning; context reinstatement to mentally reconstruct the physical, cognitive and emotional states of the witness at the time of the event; and retrieval techniques such as changing the order in which details are reported, or the perspective from which the event is recalled.⁶⁸⁷

⁶⁸¹ David C Rubin, 'The Distribution of Early Childhood Memories' (2000) 8(4) *Memory* 265, 268. This finding was based on studies of more than 11,000 autobiographical memories using four different research methods to collect the data from samples in the US; Carole Peterson, 'Children's Autobiographical Memories across the Years: Forensic Implications of Childhood Amnesia and Eyewitness Memory for Stressful Events' (2012) 32(3) *Developmental Review*, 287.

⁶⁸² Gail S Goodman, Jodi A Quas and Christin M Ogle, 'Child Maltreatment and Memory' (2009) 61 *The Annual Review of Psychology* 325.

⁶⁸³ Royal Commission into Institutional Responses to Child Sexual Abuse, *Criminal Justice Consultation Paper*, (Commonwealth of Australia, 2016), 570.

⁶⁸⁴ *Ibid*, 577.

⁶⁸⁵ Thomas D Lyon et al, 'Coaching, Truth Induction, and Young Maltreated Children's False Allegations and False Denials' (2008) 79(4) *Child Development* 914.

⁶⁸⁶ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 66.

⁶⁸⁷ Jennifer M Brown and Elizabeth A Campbell (eds), *The Cambridge Handbook of Forensic Psychology* (Cambridge University Press, 2010) 156; Robyn E Holliday et al, 'The Cognitive Interview: Research and Practice across the Lifespan' in Ray Bull, Tim Valentine and Tom Williamson (eds), *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* John (Wiley & Sons, 2009) 137.

Co-morbidity: The simultaneous presence of numerous illnesses, diseases or disorders in one person.⁶⁸⁸ Child maltreatment victims are at increased risk of developing co-morbidity, such as post-traumatic stress disorder coupled with substance abuse.⁶⁸⁹

Conceptual memory: A memory for general factual knowledge and concepts that endow information with meaning, ultimately allowing people to engage in complex cognitive processes such as recognising objects and using language.⁶⁹⁰ Also referred to as semantic memory.

Confabulation: A memory disorder where the mind generates fabricated accounts of events, experiences, or facts, either deliberately or without conscious intent. Sometimes described as 'honest lying'.⁶⁹¹

Conformity effect: A type of social influence that results in modification of a report or opinion to be consistent with the reports of others (for example, family members or multiple witnesses to the event).⁶⁹²

Consolidation: A process by which a memory transitions from resting in a sensitive state where it is susceptible to change to a state where it becomes a long-term memory, free from disruption.⁶⁹³

Contradiction: A type of inconsistency where two reported details conflict, often signifying that at least one is incorrect.⁶⁹⁴

Depression: Emotional state ranging from unhappiness or discontent to extreme sadness and pessimism.⁶⁹⁵

⁶⁸⁸ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 218.

⁶⁸⁹ Gabriela Perez-Fuentes et al, 'Prevalence and Correlates of Child Sexual Abuse: A National Study' (2013) 54(1) *Comprehensive Psychiatry* 16.

⁶⁹⁰ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 960.

⁶⁹¹ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁶⁹² In-Kyeong Kim, Enoch S Kwon and Stephen J Ceci, 'Developmental Reversals in Report Conformity: Psycho-Legal Implications' (2017) 31(2) *Applied Cognitive Psychology* 128; Saul Kassin et al, *Social Psychology: Australian and New Zealand First Edition* (Cengage Learning, 2015).

⁶⁹³ Cristina Alberini, 'The Role of Reconsolidation and the Dynamic Process of Long-Term Memory Formation and Storage' (2011) 5(12) *Frontiers in Behavioral Neuroscience* 1.

⁶⁹⁴ Martine B Powell et al, *An Evaluation of how Evidence is Elicited from Complainants of Child Sexual Abuse* (Royal Commission into Institutional Responses to Child Sexual Abuse, 2016) 228.

⁶⁹⁵ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015), 298.

Developmental Narrative Elaboration (DNE) Interview: A semi-structured approach to interviewing children that is based on verbal and/or visual narrative elaboration reminders to improve the recall of accurate detail from autobiographical memory.⁶⁹⁶

Directed forgetting: Forgetting in the course of memory trials in response to a cue to forget, such as a stimulus that signifies that the item will not be included in the memory test.⁶⁹⁷

Dissociation: Partial or total disconnection between memories of the past; awareness of identity and of immediate sensations; and control of bodily movements. This often results from traumatic experiences, intolerable problems or disturbed interpersonal relationships.⁶⁹⁸

Distortion: Any inaccuracy of perception, cognition and memory.⁶⁹⁹

DRM paradigm: The Deese–Roediger–McDermott experimental procedure for generating spontaneous false memories in a laboratory setting, using associated words in word lists that are presented to research participants for recognition.⁷⁰⁰

Ecological validity: The degree to which features of an experiment or research match those in the wider world. Ecological validity can be diminished by experimenter bias, simplified understanding of real-world situations and/or naïve sampling strategies.⁷⁰¹

Encoding: The process whereby physical sensory information is converted into a representation suitable for storage in memory and subsequent retrieval.⁷⁰²

Encoding specificity: The principle that only information stored in memory can be retrieved, and that its retrieval depends on how it was stored. Encoding specificity takes into account the fact that contextual information affects memory retrieval.⁷⁰³

⁶⁹⁶ Karen J Saywitz and Lorinda B Camparo, *Evidence-Based Child Forensic Interviewing: The Developmental Narrative Elaboration Interview* (Oxford University Press, 2013).

⁶⁹⁷ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 316.

⁶⁹⁸ Andrew M Colman, *A Dictionary of Psychology*, (Oxford University Press, 3rd ed, 2008).

⁶⁹⁹ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015), 326.

⁷⁰⁰ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008) 289.

⁷⁰¹ *Ibid*, 349.

⁷⁰² Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁷⁰³ Endel Tulving and Donald M Thomson, 'Encoding Specificity and Retrieval Processes in Episodic Memory' (1973) 80(5) *Psychological Review* 352.

External validity: The degree of generalisability of results from research or testing beyond the sample that generated them.⁷⁰⁴

False feedback: A research paradigm used to suggest false childhood events to adults.⁷⁰⁵

False memory: Memory illusion, either internal and spontaneous or externally suggested and created, that is mistakenly construed as a representation of an event from the personal past.⁷⁰⁶

Field study: A research investigation in a natural setting rather than an artificial environment such as a research laboratory.⁷⁰⁷

Forgetting: The process of losing memory.⁷⁰⁸

Forgetting curve: Graphic depiction of the rapid drop in memory retention that occurs shortly after learning, then followed by a gradual decline in forgetting.⁷⁰⁹

Free recall: A narrative response to an open-ended prompt (such as ‘tell me what happened’) in any order, without the help of cues.⁷¹⁰

Generic memory: A form of memory encoding whereby the general gist of events (what usually happened) is retained with few specific or perceptual details. This results from a reliance on conceptual knowledge.⁷¹¹

Gist memory: See *Generic memory*.

⁷⁰⁴ Jennifer M Brown and Elizabeth A Campbell (eds), *The Cambridge Handbook of Forensic Psychology* (Cambridge University Press, 2010) 837; Gary R VandenBos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 402.

⁷⁰⁵ Chris R Brewin and Bernice Andrews, ‘Creating Memories for False Autobiographical Events in Childhood: A Systematic Review’ (2016) 31(1) *Applied Cognitive Psychology* 2.

⁷⁰⁶ Marcia K Johnson, ‘Psychology of False Memories’ in Neil J Smelser and Paul B Baltes (eds), *International Encyclopedia of the Social & Behavioral Sciences* (Elsevier Science Ltd, 2001) vol 8, 5254–5259.

⁷⁰⁷ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁷⁰⁸ *Ibid.*

⁷⁰⁹ Jaap MJ Murre and Joeri Dros, ‘Replication and Analysis of Ebbinghaus’ Forgetting Curve’ (2015) 10(7) *PLoS ONE* 1.

⁷¹⁰ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 436; Michael A Vanchevsky, *Frontiers in Cognitive Psychology* (Nova Science Publs. 2006) 80.

⁷¹¹ Charles J Brainerd et al, ‘Development of the False-Memory illusion’ (2006) 42(5) *Developmental Psychology* 962; The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 2, 15; In-Kyeong Kim, Enoch S Kwon and Stephen J Ceci, ‘Developmental Reversals in Report Conformity: Psycho-Legal Implications’ (2017) 31(1) *Applied Cognitive Psychology* 128.

Grooming: The process by which child sexual offenders befriend children and/or their responsible others; obtain their trust and compliance to build abusive relationships with them; and facilitate and conceal the abuse events.⁷¹²

Heuristic biases: Features of decision-making that involve shortcut reasoning or reasoning that fills in knowledge gaps existing during decision making under uncertainty such as, for example, confirmation bias where all conclusions drawn are based on interpretations of evidence which confirm an opinion or conclusion already held by the reasoner.⁷¹³

Highly arousing: Intense experiences associated with strong emotions.⁷¹⁴

Historic child sexual abuse: A report or claim of child sexual abuse that took place many years earlier.⁷¹⁵

Hypermnnesia: An increase in the amount of information remembered over repeated recall sessions.⁷¹⁶

Individual differences: Variations between individuals such as developmental maturation, intelligence, parental attachment, coping style, socioeconomic status, culture and race/ethnicity.⁷¹⁷

Infantile amnesia: See *Childhood amnesia*.

Interdisciplinary: The transference of knowledge between two or more often disparate disciplines about a given problem.⁷¹⁸

⁷¹² Benoit Leclerc, Jean Proulx and André McKibben, 'Modus Operandi of Sexual Offenders Working or Doing Voluntary Work with Children and Adolescents' (2005) 11(2) *Journal of Sexual Aggression* 187; Anne-Marie McAlinden 'Setting 'Em Up': Personal, Familial and Institutional Grooming in the Sexual Abuse of Children' (2006) 15(3) *Social and Legal Studies* 339.

⁷¹³ Daniel Kahneman, P. Slovic, Amos Tversky (eds.), *Judgment Under Uncertainty: Heuristics and Biases* (Cambridge University Press 1982); Martine B Powell, Carolyn H Hughes-Scholes and Stefanie J Sharman, 'Skill in Interviewing Reduces Confirmation Bias' (2012) 9 *Journal of Investigative Psychology and Offender Profiling* 126.

⁷¹⁴ Tammy A Marche and Karen Salmon, 'Children's Memory for Emotionally Negative Experiences: An Eyewitness Memory Perspective' in Robyn E Holliday and Tammy A Marche (eds), *Child Forensic Psychology* (Palgrave Macmillan, 2012) 119–156, 119.

⁷¹⁵ Judy Cashmore and Rita Shackel, 'Responding to Historical Child Sexual Abuse and the Needs of Survivors' (2014) 26(1) *Current Issues in Criminal Justice* 1.

⁷¹⁶ David G. Payne, 'Hypermnnesia and Reminiscence in Recall: A Historical and Empirical Review' (1987) 101(1) *Psychological Bulletin* 5.

⁷¹⁷ Latonya S Harris et al, 'Children's Resistance to Suggestion' in Kathryn Kuehne and Mary Connell (eds), *The Evaluation of Child Sexual Abuse Allegations* (John Wiley & Sons, 2009) 181; Michele Bedard-Gilligan, Lori A Zoellner and Norah C Feeny, 'Is Trauma Memory Special? Trauma Narrative Fragmentation in PTSD' (2017) 5(2) *Clinical Psychological Science* 212.

⁷¹⁸ Sally W Aboelela et al, 'Defining Interdisciplinary Research: Conclusions from a Critical Review of the Literature' (2007) 42(1) *Health Services Research* 329; Bernard Choi and Anita Pack, 'Multidisciplinarity,

Intrusion error: The reporting of a detail that did not occur during the incident recalled, but which occurred during another, similar incident. Also known as a misattribution error.⁷¹⁹

Intrusive memories: Unpleasant or upsetting memories of traumatic events, such as involuntary flashbacks, which obstruct an individual's normal flow of task-related thoughts. Intrusive memories are particularly prevalent among individuals with post-traumatic stress disorder.⁷²⁰

Long-term memory: A memory containing information that is stored for periods up to decades, often differentiated into episodic memory for events and experiences, and conceptual memory for information about the world.⁷²¹

Maltreatment: The abuse or neglect of another person, which may involve emotional, sexual or physical action or inaction, the severity or chronicity of which can result in significant harm or injury. Maltreatment includes exploitation and denial of basic needs such as food, shelter or medical attention.⁷²²

Memory consolidation: Process in which an initial memory, preserved by repeated neural activity, becomes fixed.⁷²³

Memory fragmentation: Accounts that are processed only shallowly, so they are disorganised, sensory, incoherent and poorly sequenced.⁷²⁴

Memory implantation: An experimental research process using social coercion to incorporate a false memory from an external source, typically a childhood event, into a person's autobiographical memory.⁷²⁵

Interdisciplinarity and Transdisciplinarity in Health Research, Services, Education and Policy: 1. Definitions, Objectives, and Evidence of Effectiveness' (2006) 29(6) *Clinical and Investigative Medicine* 351.

⁷¹⁹ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 658; Kim P Roberts, Michael E Lamb and Kathleen J Sternberg, 'The Effects of Rapport-Building Style on Children's Reports of a Staged Event' (2004) 18(2) *Applied Cognitive Psychology* 189.

⁷²⁰ Ibid, 561; Paul M Salkovskis, H Candida Richards and Elizabeth Forrester, 'The Relationship Between Obsessional Problems and Intrusive Thoughts' (1995) 23 (3) *Behavioural and Cognitive Psychotherapy* 281, 282.

⁷²¹ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁷²² Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 619.

⁷²³ Ibid, 781.

⁷²⁴ Anna McKinnon et al, 'Trauma Memory Characteristics and the Development of Acute Stress Disorder and Post-Traumatic Stress Disorder in Youth' (2017) 54 *Journal of Behavior Therapy and Experimental Psychiatry* 112, 113.

⁷²⁵ Chris R Brewin and Bernice Andrews, 'Creating Memories for False Autobiographical Events in Childhood: A Systematic Review' (2016) 31(1) *Applied Cognitive Psychology* 1.

Memory specificity: Recall of a particular episode or event.⁷²⁶

Memory suppression: The intentional or involuntary blocking of memories or thoughts, usually regarding painful or traumatic events, which may render these memories difficult to access.⁷²⁷

Mental disorder: Abnormal psychological symptoms or mental illness, such as post-traumatic stress disorder or acute stress disorder.⁷²⁸ Clinicians and researchers follow criteria for particular mental disorders listed in the *Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5)*⁷²⁹, used widely in the United States, and the *International Statistical Classification of Diseases-10 (ICD-10)*, used widely in Europe.⁷³⁰

Mental illness: See *Mental disorder*.

Meta-analysis: A set of techniques for combining the results of a number of research studies and analysing them statistically as a single data set to calculate the overall or 'absolute' effect size.⁷³¹

Misinformation effect: A laboratory procedure that presents misleading information after an event, to assess the extent to which it is incorporated into an individual's memory of the event.⁷³²

National Institute for Child Health and Human Development (NICHD) Investigative Interview Protocol: A structured process for implementing evidence-based practice when interviewing maltreated children, including child sexual abuse victims. The protocol involves an introduction, ground rules, rapport-building, training in episodic memory, narrative practice, and a free-recall narrative of events elicited by open-ended prompts and cued

⁷²⁶ Latonya S Harris et al, 'Coping Style and Memory Specify in Adolescents and Adults with Histories of Child Sexual Abuse' (2016) 24(8) *Memory* 1078.

⁷²⁷ Sang Quang Phung and Richard A Bryant, 'The Influence of Cognitive and Emotional Suppression on Overgeneral Autobiographical Memory Retrieval' (2013) 22(3) *Consciousness and Cognition* 965.

⁷²⁸ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁷²⁹ American Psychiatric Association, *The Diagnostic and Statistical Manual of Mental Disorders* (Author, 5th ed, 2013).

⁷³⁰ World Health Organisation, 'ICD-10 Chapter V: Mental and Behavioral Disorders' in *International Statistical Classification of Diseases and Related Health Problems 10th Revision* (Author, 2016).

⁷³¹ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008); Allison Shorten and Brett Shorten, 'What is Meta-Analysis?' (2013) 16(1) *Evidence-Based Nursing* 3.

⁷³² Jennifer M Brown and Elizabeth A Campbell (eds), *The Cambridge Handbook of Forensic Psychology* (Cambridge University Press, 2010) 187.

invitations. Focused and option-posing questions are used minimally after the free-recall phase is exhausted.⁷³³

NICHD Investigative Interview Protocol – Revised. A version of the NICHD Investigative Interview Protocol that increases the focus on socio-emotional factors by adding rapport-building and emotional support throughout the interview through non-suggestive positive reinforcement.⁷³⁴

Negative emotion: An unpleasant and often disruptive emotional reaction such as anger, envy, sadness and fear.⁷³⁵

Over-general memory: A memory characterised by recall of general, generic and non-specific details of events.⁷³⁶

Para-verbal techniques: Interview techniques using non-word vocal expressions and pitch modulations such as minimal encouragers like “uh-huh”.⁷³⁷

Particularisation: An individualised description of a particular instance or event.⁷³⁸

Peri-traumatic dissociation: A form of memory-related processing during and in the immediate aftermath of trauma that can include experiences of ‘blinking out’, ‘spacing out’ or losing track of time, resulting in poor memory of a traumatic event.⁷³⁹

Personality disorder: An umbrella term for a category of mental disorders that emerge in adolescence or early adulthood. These disorders are characterised by pervasive, inflexible and enduring patterns of cognition, affectation, interpersonal behaviour or impulse control that deviate markedly from culturally shared expectations. They can lead to significant distress or

⁷³³ Luis Roberto Benia et al, ‘The NICHD Interview Protocol: A Meta-Analytic Review’ (2015) 24(3) *Journal of Child Sexual Abuse* 259.

⁷³⁴ Irit Hershkowitz et al, ‘Does Enhanced Rapport-Building Alter the Dynamics of Investigative Interviews with Suspected Victims of Intra-Familial Abuse?’ (2015) 30(1) *Journal of Police Criminological Psychology* 6.

⁷³⁵ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 694.

⁷³⁶ Latonya S Harris et al, ‘Coping Style and Memory Specify in Adolescents and Adults with Histories of Child Sexual Abuse’ (2016) 24(8) *Memory* 1078.

⁷³⁷ Sarah E Agnew, Martine B Powell, and Pamela C Snow, ‘An Examination of the Questioning Styles of Police Officers and Caregivers When Interviewing Children With Intellectual Disabilities’ (2006) 11(1) *Legal and Criminological Psychology* 35; Valerie Hauch et al, ‘Does Training Improve the Detection of Deception? A Meta-Analysis’ (2016) 43(3) *Communication Research* 283.

⁷³⁸ OpenCubicles Technologies, *Mnemonic Dictionary* (at 11 April 2017) ‘Particularisation’.

⁷³⁹ Amy Hardy et al, ‘Does Trauma Memory Play a Role in the Experience of Reporting Sexual Assault during Police Interviews? An exploratory Study’ (2009) 17(8) *Memory* 783, 784.

impairment in social, occupational or other important areas of functioning, and are not due to drugs or other medical conditions.⁷⁴⁰

Post-event information effect: The incorporation of misinformation into memory as a result of exposure to post-event information.⁷⁴¹ See *Misinformation effect*.

Post-traumatic stress disorder (PTSD): A disorder that may develop in children and adults as a response to witnessing life-threatening events, severe injuries and natural disasters. The pattern of symptoms may first occur months or even years after the traumatic experience and may persist for months and years. Symptoms are characterised by persistent re-experience of traumatic events in the form of distressing recollections, dreams, hallucinations or dissociative flashbacks; avoidance of activities or places that recall the event; diminished responsiveness and disinterest in significant activities, in addition to feeling detached from others; and chronic psychological arousal and victim's guilt.⁷⁴²

Previously unreported traumatic memories: Memories that, for whatever reason, have not previously been communicated to another person. This applies to continuous memories that have never previously been disclosed as well as memories that were forgotten and are recalled spontaneously or in response to questions.⁷⁴³

Primacy effect: The tendency for facts, impressions or items that are presented first to be better learned or remembered than material presented later. This effect can occur in formal learning situations as well as social contexts.⁷⁴⁴

Psychopathology: See *Mental disorder*.

Reality monitoring: The internal processes individuals use to decide whether information has an external (obtained through perceptual processes) or internal (reasoning, imagination and thought) source.⁷⁴⁵ See also *Source monitoring*.

⁷⁴⁰ American Psychiatric Association, *The Diagnostic and Statistical Manual of Mental Disorders* (Author, 5th ed, 2013); Andrew M Colman, *A Dictionary of Psychology*, (Oxford University Press, 3rd ed, 2008); World Health Organisation, 'ICD-10 Chapter V: Mental and Behavioral Disorders' In *International Statistical Classification of Diseases and Related Health Problems 10th Revision* (Author, 2016).

⁷⁴¹ Helen M Paterson and Richard I Kemp, 'Comparing Methods of Encountering Post-Event Information: The Power of Co-Witness Suggestion' (2006) 20(8) *Applied Cognitive Psychology* 1083.

⁷⁴² Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 815.

⁷⁴³ Australian Psychological Society, 'Guidelines for Psychological Practice with Clients with Previously Unreported Traumatic Memories' in *APS Code of Ethics* (Australian Psychological Society, 2010) 100.

⁷⁴⁴ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 829.

⁷⁴⁵ Marcia K Johnson and Carol L Raye, 'Reality Monitoring' (1981) 88(1) *Psychological Review* 67.

Recall: The act or process of spontaneously retrieving information from memory. This can be without cues, as in the case of free recall, or with cues in the case of cued recall.⁷⁴⁶

Recantation: See *Retraction*.

Recency effect: A memory phenomenon in which the most recently presented facts, impressions, or items are learned or remembered better than material that was presented earlier. This effect can occur in both formal learning situations and social contexts.⁷⁴⁷

Recognition: An act or process of perceiving or identifying newly presented information as matching or identical to information that is remembered. Recognition is generally easier than recall, and produces higher memory scores in formal tests.⁷⁴⁸

Reconsolidation: The neurobiological stabilisation of a reactivated memory, each time it is accessed. Prior to reconsolidation, the memory is unstable and susceptible to being changed or lost.⁷⁴⁹

Recovered memory: The subjective experience of recalling a prior memory that was previously unavailable to conscious recollection.⁷⁵⁰

Recovered memory therapy: The use of methods such as hypnosis to help clients recall presumed forgotten memories of childhood trauma that allegedly caused their symptoms.⁷⁵¹

Rehearsal: The repetition of information in an attempt to preserve it in memory. Although rehearsal implies a verbal process, it is hypothesised to occur in other modalities as well.⁷⁵²

Reminiscence: The recall of previously unreported facts or events that occurs spontaneously or in response to a new retrieval cue.⁷⁵³

⁷⁴⁶ Andrew M Colman, *A Dictionary of Psychology*, (Oxford University Press, 3rd ed, 2008).

⁷⁴⁷ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 887.

⁷⁴⁸ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁷⁴⁹ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 890.

⁷⁵⁰ Andrew M Colman, *A Dictionary of Psychology*, (Oxford University Press, 3rd ed, 2008) 890.

⁷⁵¹ Richard J McNally, 'False Memories in the Laboratory and in Life: Commentary on Brewin and Andrews (2016)' (2016) 31(1) *Applied Cognitive Psychology* 40, 41.

⁷⁵² Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 898.

⁷⁵³ Alana C Krix et al, 'Consistency across Repeated Eyewitness Interviews: Contracting Police Detectives' Beliefs with Actual Eyewitness Performance' (2015) 10(2) *PLoS ONE* 1; Ronald P Fisher, Neil Brewer and Gregory Mitchell, 'The Relation between Consistency and Accuracy of Eyewitness Testimony: Legal versus Cognitive Explanations' In Ray Bull, Tim Valentine and Tom Williamson (eds), *Handbook of Psychology of Investigative Interviewing: Current Developments and Future Directions* (Wiley-Blackwell, 2009)121–136.

Reminiscence bump: The increased proportion of autobiographical memories from adolescence and early adulthood observed in adults aged over 40.⁷⁵⁴

Repressed memory: See *Recovered memory*.

Retention: The storage and maintenance of memory after encoding.⁷⁵⁵

Retraction: The withdrawal or denial of an allegation.⁷⁵⁶

Retrieval: The act or process of recovering encoded information from storage in memory and bringing it into consciousness.⁷⁵⁷

Reverse developmental effect: The counterintuitive phenomenon of there being a greater prevalence of false memory in older children, adolescents and adults compared to younger children.⁷⁵⁸

Scaffolding: The role adults play in supporting and structuring the autobiographical memory of children. Ideal scaffolding acknowledges and builds on the child's contribution, while prompting the child to remember details about the 'who, what, when, where and how' of past events.⁷⁵⁹

Schema: A mental template representing some aspect of experience, based on prior experience and memory, and structured to facilitate perception, cognition, the drawing of inferences or the interpretation of new information in terms of existing knowledge.⁷⁶⁰

Script: See *Schema*.

Self-administered interview (SAI): A generic interview tool designed as a self-completed paper booklet for reporting a diverse range of crimes. SAIs comprise seven sections to facilitate recall and reporting of memories for witnessed events. The format, instructions and recall cues are generic and apply to reports of any witnessed incident.⁷⁶¹

Semantic memory: See *Conceptual memory*.

⁷⁵⁴ Jonathan Koppel and David C Rubin, 'Recent Advances in Understanding the Reminiscence Bump: The Importance of Cues in Guiding Recall from Autobiographical Memory' (2016) 25(2) *Current Directions in Psychological Science* 135.

⁷⁵⁵ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008) 914.

⁷⁵⁶ Lindsay C Malloy et al, 'Filial Dependency and Recantation of Child Sexual Abuse Allegations' (2007) 46(2) *Journal of the American Academy of Child & Adolescent Psychiatry* 162.

⁷⁵⁷ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁷⁵⁸ Robyn E Holliday et al (eds), 'Developmental Reversals in False Memory: Now You See Them, Now You Don't' (2011) 47(2) *Developmental Psychology* 442.

⁷⁵⁹ Robyn Fivush, 'The Development of Autobiographical Memory' (2011) 62 *Annual Review of Psychology* 559.

⁷⁶⁰ Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁷⁶¹ Lorraine Hope, Fiona Gabbert and Ronald P Fisher 'From Laboratory to the Street: Capturing Witness Memory Using the Self-Administered Interview' (2011) 16(2) *Legal and Criminological Psychology* 211.

Short-term memory: A limited memory system capable of retaining information for brief periods, up to a maximum of about 20–30 seconds. Can be renewed indefinitely if the information within it is rehearsed.⁷⁶²

Social conformity effect: See *Conformity effect*.

Source amnesia: Impaired memory for how, when or where information was learned despite good memory of the information itself.⁷⁶³

Source monitoring: The set of processes involved in making attributions about the origins of memories, knowledge and beliefs.⁷⁶⁴

Spontaneous false memory: Automatic inferences and memory intrusions that are due to normal memory processes, without any external suggestive influence.⁷⁶⁵

Statement validity analysis: A range of procedures for generating and testing hypotheses about the likely veracity of a given witness statement. These include careful review of relevant case information; a preserved semi-structured interview; criteria-based content analysis of the transcribed interview; validity checks on additional case information; and a systematic summary of content analysis.⁷⁶⁶

Substantiated case: When enough evidence is accumulated to confirm that child sexual abuse occurred.⁷⁶⁷

Suggestibility: The inclination to adopt the beliefs, attitudes, ideas and/or actions of others.⁷⁶⁸

Temporal cue: An interviewing technique to elicit information about the time frame of an event.⁷⁶⁹

Transdisciplinary research: Research by investigators from different disciplines working jointly to create new conceptual, theoretical, methodological and translational innovations

⁷⁶² Andrew M Colman, *A Dictionary of Psychology* (Oxford University Press, 3rd ed, 2008).

⁷⁶³ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 1010.

⁷⁶⁴ Marcia K Johnson et al, 'Source Monitoring' (1993) 114 *Psychological Bulletin* 3.

⁷⁶⁵ Henry Otgaar et al, 'Maltreatment Increases Spontaneous False Memories but Decreases Suggestion-Induced False Memories in Children' (2017) *British Journal of Developmental Psychology* 1, doi: 10.1111/bjdp.12177.

⁷⁶⁶ Jennifer M Brown and Elizabeth A Campbell (eds), *The Cambridge Handbook of Forensic Psychology* (Cambridge University Press, 2010) 319.

⁷⁶⁷ Jeanne Giovannoni, 'Substantiated and Unsubstantiated Reports of Child Maltreatment' (1989) 11(4) *Children and Youth Services Review* 299.

⁷⁶⁸ Gary R van den Bos et al (eds), *APA Dictionary of Psychology* (American Psychological Association, 2nd ed, 2015) 1048.

⁷⁶⁹ Sarah L Pearce et al, 'The Effect of Contextual Cues on Children's Ability to Remember an Occurrence of a Repeated Event' (2010) 8(1) *Legal and Criminological Psychology* 39.

that integrate and move beyond discipline-specific approaches and boundaries to address a common problem.⁷⁷⁰

Vividness: The amount of detail or intensity of feeling at the time of an event, which can counteract forgetting. Vividness is determined by many factors, including comprehension and emotion at the time of the event, personal significance, and the extent to which an event integrates with existing memories.⁷⁷¹

Whole story approach: A framework for investigative interviews of sexual assault developed in Victoria, Australia, in which interviewers elicit details of the relationship between the alleged victim and suspect to identify grooming behaviours, unique signifiers of the relationship, offending incidents and points of confirmation between the narratives of the alleged victim and the suspect.⁷⁷²

⁷⁷⁰ Bernard C Choi and Anita W P Pak, 'Multidisciplinarity, Interdisciplinarity and Transdisciplinarity in Health Research, Services, Education and Policy: 1. Definitions, Objectives, and Evidence of Effectiveness' (2006) 29(6) *Clinical and Investigative Medicine* 351; Patricia L Rosenfield, 'The Potential of Transdisciplinary Research for Sustaining and Extending Linkages Between the Health and Social Sciences' (1992) 35(11) *Social Science & Medicine* 1343.

⁷⁷¹ The British Psychological Society Research Board, *Guidelines on Memory and the Law: Recommendations from the Scientific Study of Human Memory* (The British Psychological Society, 2010) 2,16.

⁷⁷² Patrick Tidmarsh, Martine Powell and Elli Darwinkel, "'Whole Story"; A New Framework for Conducting Investigative Interviews About Sexual Assault' (2014) 4(2) *Investigative Interviewing: Research and Practice* 33.

List of appendices

Appendix 1.1	Draft report feedback form
Appendix 1.2	Attendees at the Royal Commission's Public Roundtable
Appendix 1.3	True/false memory items
Appendix 8.1	Empirical sources for Table 8.1
Appendix 8.2	Empirical sources for Table 8.2
Appendix 10.1	Empirical guidance summary

Appendix 1.1

Draft report feedback form

Feedback on chapter

4 5 6 7 8 (highlight the number):

The five most important things for police, legal practitioners and courts to know about memory on this topic are (fill in paragraph numbers or ranges):

1. _____
2. _____
3. _____
4. _____
5. _____

The most significant implications of these findings for legal policy and practice in child sexual abuse cases are:

1. _____
2. _____
3. _____
4. _____
5. _____

Additional references or topics that should be added are (fill in paragraph numbers):

1. _____
2. _____
3. _____
4. _____
5. _____

Topics that should be elaborated on are (fill in paragraph numbers):

1. _____
2. _____
3. _____
4. _____
5. _____

Topics that should be omitted are (fill in paragraph numbers):

1. _____

2. _____
3. _____
4. _____
5. _____

Appendix 1.2
Attendees at the Royal Commission's Public Roundtable

Dr Penny Van Bergen

Senior Lecturer in Educational Psychology
Department of Educational Studies
Macquarie University

Dr Suzanne Blackwell

Clinical Psychologist, Auckland Psychology

Professor Neil Brewer

Matthew Flinders Distinguished Professor, School of Psychology
Flinders University

Dr Deirdre Brown

Senior Lecturer, School of Psychology
Victoria University of Wellington

Professor Richard A Bryant AC

Scientia Professor & NHMRC Senior Principal Research Fellow, School of Psychology
University of New South Wales

Associate Professor Kay Bussey

Associate Professor, Department of Psychology
Macquarie University

Dr Greg Dear

Senior Lecturer, School of Arts and Humanities
Edith Cowan University

Professor Brett Hayes

Professor, School of Psychology
University of New South Wales

Professor Susan Hayes AO

Emeritus Professor, Sydney Medical School
The University of Sydney

Dr Emily Henderson

Senior Solicitor, Henderson Reeves

Professor Richard Kemp

Professor & Director of Master of Psychology (Forensic) Program, School of Psychology
University of New South Wales

Dr Chris J Lennings OAM

Director, Lennings Seidler Collins Psychology

Dr Helen Paterson

Senior Lecturer, School of Psychology
The University of Sydney

Professor Martine Powell

Personal Chair, School of Psychology
Deakin University

Dr Stefanie Sharman

Senior Lecturer, School of Psychology
Deakin University

Associate Professor Karen Salmon

Associate Professor, School of Psychology
Victoria University of Wellington

Dr Katie Seidler

Clinical and Forensic Psychologist, Lennings Seidler Collins Psychology

Professor Frederick William Seymour

Professor, School of Psychology
The University of Auckland

Mr Dale Tolliday OAM

Clinical Advisor, New Street Adolescent Services
The Children's Hospital at Westmead

Professor Don Thomson

Honorary Professor, School of Psychology
Deakin University

Observer:

Mr Sho Mukai

Saitama District Public Prosecutor's Office, Japan

Appendix 1.3

True/false memory items

Do these statements summarise your understanding of memory for child sexual abuse in general?

(Y = Yes; N = No; DK = Don't know)

1.	Young children can be as accurate as older children and adults but provide less information.	Y / N / DK
2.	Most people have continuous memories of child sexual abuse.	Y / N / DK
3.	Reports of previously forgotten memories of child sexual abuse elicited in therapy require careful scrutiny.	Y / N / DK
4.	Thinking or talking about event memories strengthens them.	Y / N / DK
5.	Memory is not an exact replica of an experience.	Y / N / DK
6.	Memories of child sexual abuse are subject to ordinary forgetting.	Y / N / DK
7.	People are more prone to forget the source of a memory than the core actions.	Y / N / DK
8.	Rapid forgetting of contextual details takes place in the short term after an event.	Y / N / DK
9.	Over the long-term memories of core actions are stable.	Y / N / DK
10.	Adults rarely recall events which took place before the age of 3 or 4 years.	Y / N / DK
11.	Information spontaneously recalled after an initial report is more reliable.	Y / N / DK
12.	Recalling more after an initial report is common.	Y / N / DK
13.	Reliable memory reports of core actions are often accompanied by minor inconsistencies.	Y / N / DK
14.	In false memory experiments, over two-thirds of people were not susceptible to false information.	Y / N / DK
15.	Memories change over time.	Y / N / DK
16.	Non-reporting does not indicate forgetting.	Y / N / DK
17.	Children's event memory proficiency is related to factors other than suggestibility alone.	Y / N / DK
18.	Most retractions of reports of child sexual abuse are due to external pressure.	Y / N / DK

19.	Children may not recognise that certain behaviours are abusive.	Y / N / DK
20.	All children do not respond to child sexual abuse in the same way.	Y / N / DK
21.	Events of significance to adults may not be significant to a child.	Y / N / DK
22.	Memory is reconstructive and subject to many influences.	Y / N / DK
23.	Betrayal increases the risk of trauma.	Y / N / DK
24.	Trauma disrupts the narrative quality of memory.	Y / N / DK
25.	Trauma leads to vague autobiographical memory.	Y / N / DK
26.	Stress at the time of an event preserves children's memory for core actions.	Y / N / DK
27.	Avoidant coping after child sexual abuse accelerates forgetting.	Y / N / DK
28.	Children who experienced repeated events reliably report who, what, where information.	Y / N / DK
29.	Memory for the first and last in a series of repeated events is stronger than for those in the middle.	Y / N / DK
30.	Memory for the first event in a series is usually stronger than for the last.	Y / N / DK
31.	Young children have difficulty recalling temporal information about repeated events.	Y / N / DK
32.	Children underestimate the frequency of repeated events.	Y / N / DK
33.	Children's memories of stressful events are impaired when children are unsupported at the time of reporting.	Y / N / DK
34.	Children with intellectual disabilities provide accurate accounts when questioned about events early and with appropriate questions.	Y / N / DK
35.	With appropriate questions, repeated interviews facilitate recall.	Y / N / DK
36.	Support for children at the time of reporting facilitates memory.	Y / N / DK
37.	The quality of the interview determines the quality of event memory.	Y / N / DK
38.	Traditional cross-examination impairs memory reports.	Y / N / DK
39.	The quality of interviewer training determines the quality of memory reports obtained.	Y / N / DK

40 Trauma at the time of abuse can impair the ability to form any memory of abuse

Y / N / DK

Appendix 8.1

Empirical sources for Table 8.1

Note: Alphabetical superscripts correspond with the superscripts in Table 8.1.

- ^a Gwendolyn D Anderson, Jennifer N Anderson and Megan Krippner, “‘I Only Want to Know What You Know’”: The Use of Orienting Messages during Forensic Interviews and Their Effects on Child Behavior’ (2016) 25(6) *Journal of Child Sexual Abuse* 655; Fanny Verkampt, Magali Ginet and Cindy Colomb, ‘The Influence of Social Instructions on the Effectiveness of a Cognitive Interview Used with Very Young Child Witnesses’ (2014) 64(6) *Revue Européenne de Psychologie Appliquée*, 323.
- ^b Sonia P Brubacher, Debra A Poole and Jason J Dickinson, ‘The Use of Ground Rules in Investigative Interviews with Children: Synthesis and Call for Research’ (2015) 36 *Developmental Review* 15.
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Appendix 8.2

Empirical sources for Table 8.2

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Appendix 10.1

Empirical guidance summary of the effects of childhood sexual abuse on memory and complainants' evidence

This guidance reflects general memory processes and does not explain individual differences or deviations from generic developmental changes. The guidance is based on contemporary scientific research and provides an empirical basis to assist police, courts, legal professionals and juries to evaluate memories of child sexual abuse. The chapter sections listed in footnotes provide additional details on these topics.

Memory in general

No memory is an exact replica of an experience or event, because memory is dynamic and reconstructive.⁷⁷³ People shape their memories of past events into cohesive and coherent personal narratives.⁷⁷⁴ Memory often includes self-contradictions about dates, times, items or people present.⁷⁷⁵ People are especially poor at reconstructing the time frame of an event.⁷⁷⁶

Memory for reporting experiences of child sexual abuse

Reporting of child sexual abuse involves recalling one or a series of personal life events, based on both autobiographical and event memory.⁷⁷⁷ Three cognitive processes affect memory reporting: encoding, consolidation and retrieval (recall).⁷⁷⁸

Encoding of memories

Attention is crucial to encode features of an event. If actions, objects or features are not noticed or attended to during an event, that information is not encoded into short-term memory and no memory trace is formed.⁷⁷⁹

⁷⁷³ Ch 4.1.

⁷⁷⁴ Ibid.

⁷⁷⁵ Ibid.

⁷⁷⁶ Ibid.

⁷⁷⁷ Ibid.

⁷⁷⁸ Ibid.

⁷⁷⁹ Ch 4.1.

Distinctive and personally salient information is more likely to be attended to and thus encoded.⁷⁸⁰ Not all instances of childhood sexual abuse are subjectively experienced as traumatic at the time of the abuse. However, if, during an abusive event, trauma is experienced, encoding may be disrupted, leading to more sparsely encoded information and fragmentary memories.⁷⁸¹ Sparsely encoded information is not recalled as well as more densely encoded information. Any memory consists of samples of specific details about an event and includes gaps, but a memory of an event experienced as traumatic is likely to be more fragmented.⁷⁸²

Consolidation of memories

Consolidation is the conversion of a short-term memory trace to long-term memory, shaped by an individual's understanding and knowledge at the time and the personal significance of the event.⁷⁸³ Many aspects attended to during encoding are forgotten soon after an event if they are not consolidated into long-term memory.⁷⁸⁴ Shortly after an event, individuals initially experience a rapid decline in memory for that event followed by more stable retention of memory over time.⁷⁸⁵ The core features and meaning of an event are most likely to be remembered; other information is less well-preserved.⁷⁸⁶ For example, core features of sexual abuse such as the nature of the abusive acts and the perpetrator may be remembered, but details such as the time, the colour of someone's clothing, or what was said may be forgotten.

For repeated or familiar events, a person generally develops a schema for the core or gist features of that type of experience.⁷⁸⁷ Once a schema exists, the specific details of every instance of that type of experience may not be encoded or consolidated, and thus cannot be recalled.⁷⁸⁸ Even reliable memory reports of core events and actions of recurring events are often accompanied by minor inconsistencies related to the core features.⁷⁸⁹

Studies of maltreated children have shown that children who experienced subjective trauma at the time of severe abuse are more likely to develop diagnosable mental disorders (for example, psychopathology such as acute stress disorder or post-traumatic stress disorder).⁷⁹⁰

⁷⁸⁰ Chapter 5.1.

⁷⁸¹ Chapter 6.4.

⁷⁸² Chapter 6.3.

⁷⁸³ Chapter 4.1.

⁷⁸⁴ Chapter 4.1.

⁷⁸⁵ Chapter 4.1.

⁷⁸⁶ Chapter 4.2.

⁷⁸⁷ Chapter 4.1.

⁷⁸⁸ Chapter 7.1.

⁷⁸⁹ Chapter 4.1.

⁷⁹⁰ Chapter 6.2.

In the presence of mental disorders, consolidation of emotional or traumatic information may be inhibited.⁷⁹¹

Retrieval of memories

Thinking and talking about events generally increases the durability of memory; unrehearsed memories may become more difficult to retrieve.⁷⁹² Repeated recall of an event generally increases the memory quantity and the accuracy of details reported.⁷⁹³

A number of studies show that in the absence of mental disorders, children and adults generally have accurate recall for traumatic and negatively stressful personal life events.⁷⁹⁴ The stressful or traumatic nature of an event is not a good predictor of memory, however, as other studies suggest that individual responses to extreme stress can reduce the quality and quantity of recall.⁷⁹⁵

Most people who have experienced childhood sexual abuse have continuous memories of the abuse.⁷⁹⁶ However, abuse memories are subject to normal forgetting.⁷⁹⁷ Although uncommon, it is possible temporarily to entirely forget an experience of childhood sexual abuse or aspects of the abuse.⁷⁹⁸

Memories are sensitive to retrieval cues and are not recalled the same way every time.⁷⁹⁹ Memories are usually triggered by a range of salient retrieval cues that are personal. Some obvious examples are a particular taste or touch, returning to the location of an event, reading about or seeing a similar event in the media or on television, becoming a parent, and so forth.

The ability to retrieve memories can be affected by stress or emotion at the time of recall. Trauma that results in mental disorders, whether caused by childhood sexual abuse or some other source, can impair autobiographical and event memory.⁸⁰⁰ People diagnosed with stress disorders and betrayal anger often experience negative intrusive memories such as flashbacks to a traumatic event. These intrusive memories may block access to narratives of personal life events and verbal memory, even when asked free-recall questions.⁸⁰¹

⁷⁹¹ Chapter 6.5.

⁷⁹² Chapter 4.2.

⁷⁹³ Ibid.

⁷⁹⁴ Chapter 6.6.

⁷⁹⁵ Chapter 6.2.

⁷⁹⁶ Chapter 5.5.

⁷⁹⁷ Ibid.

⁷⁹⁸ Chapter 6.4.

⁷⁹⁹ Chapter 4.2.

⁸⁰⁰ Chapter 6.6.

⁸⁰¹ Ibid.

Adolescents who have experienced childhood sexual abuse can have autobiographical memory dysfunction such as over-general and short memories, and poor event memory retrieval.⁸⁰² People who adopt avoidant coping styles after subjectively traumatic experiences are prone to more memory fragmentation and superficial recall for personal life events.⁸⁰³

Memories do not remain in a fixed long-term state.⁸⁰⁴ When a memory is retrieved, it is in a sensitive state during which less memorable details may be modified, weakened or strengthened before reconsolidation.⁸⁰⁵ Based on their current understanding, individuals usually unconsciously update and modify their memories, filling in memory gaps regarding details that were either not encoded or forgotten.⁸⁰⁶

Various factors can affect what is recalled. These include factors associated with the nature of the event (for example, whether it is a distinctive or recurring event); the victim (for example, age, the presence of any intellectual disability, and suggestibility); and the time of recall (for example, the types of questions asked, whether the victim is emotionally distressed).

Factors associated with the nature of the event recalled

One factor that can influence memory processes is whether the event is a recurring event in someone's life. Memories for details that recur consistently are more resistant to error and misinformation.⁸⁰⁷ Details about recurring events will often be remembered, but may be unrelated to particular moments in time, and recall of specific details about a particular recurring event in a series may not be possible, or may be prone to error.⁸⁰⁸ Irrespective of age, individuals who experience recurring events can usually indicate that the events took place more than once, but tend to underestimate the event frequency.⁸⁰⁹ Although memory for dates and time frames can be inaccurate, providing information about the duration, sequence and dates of recurring events is a skill that develops with age.⁸¹⁰

Factors associated with the circumstances of the victim

When victims are asked to retrieve memories of child sexual abuse, individual differences need to be considered and accommodated. Memory capacity to convey a coherent

⁸⁰² Chapter 6.6.

⁸⁰³ Ibid.

⁸⁰⁴ Chapter 4.1.

⁸⁰⁵ Ibid.

⁸⁰⁶ Chapter 5.4.

⁸⁰⁷ Chapter 7.2.

⁸⁰⁸ Ibid.

⁸⁰⁹ Chapter 7.4.

⁸¹⁰ Chapter 7.3.

autobiographical narrative about child sexual abuse varies based on the strength of parental attachment⁸¹¹, developmental maturation⁸¹², cultural background⁸¹³, coping style⁸¹⁴ and the presence of mental disorders.⁸¹⁵ Common factors associated with the victim that influence memory operations include age and the presence of intellectual disabilities.

The influence of age on memory

Generally, the underlying memory process of infants⁸¹⁶ and young children⁸¹⁷ is similar to that of older children⁸¹⁸ and adults.⁸¹⁹ There are some differences in the way infants and pre-schoolers⁸²⁰ encode, consolidate and retrieve memories and in the quantity of their memory capacity compared to older children and adults.

If the onset of abuse is in early childhood, encoding of memories of child sexual abuse may be disrupted, because the ability to encode develops with age.⁸²¹ It takes longer for young children than for adults to encode events.⁸²² Very young children⁸²³ are more likely than adults to encode and store information as non-verbal images or movements, because they may not yet have developed verbal skills.⁸²⁴ Thus, when very young children retrieve these memories, they typically express them in a form that closely matches the way they encoded the event (including non-verbally).⁸²⁵

Below pre-school age, children encode fewer episodic details and process conceptual information more slowly than older children.⁸²⁶ Young children are more likely to forget details of an event rapidly.⁸²⁷ After periods of delay, even pre-schoolers have accurate memories of core features of events, whereas other features are less well remembered, irrespective of age.⁸²⁸ During the primary school years, as more conceptual information is

⁸¹¹ Chapter 6.2.

⁸¹² Chapter 4.3; 6.2.

⁸¹³ Chapter 4.1.

⁸¹⁴ Chapter 6.2.

⁸¹⁵ Ibid.

⁸¹⁶ Infants are children below the age of one.

⁸¹⁷ Children aged 1–10.

⁸¹⁸ Children aged 11–17.

⁸¹⁹ Adults are people aged 18 or older.

⁸²⁰ In most Australian states and territories, pre-schoolers are aged 4–5.

⁸²¹ Chapter 4.3.

⁸²² Ibid.

⁸²³ Children aged 1–3.

⁸²⁴ Chapter 4.3

⁸²⁵ Ibid.

⁸²⁶ Ibid.

⁸²⁷ Chapter 6.6.

⁸²⁸ Chapter 5.1.

learned and organised in memory, children's ability to encode, interpret and recall events improves.⁸²⁹ Regardless of the age at the time of encoding, memories retrieved by adolescents⁸³⁰ generally include more specific information about events than those of younger children, but adolescents, in turn, tend to recall less detail than adults.⁸³¹

Most adults' earliest childhood memories are for events at the ages of five to seven, although young children retain memories of earlier events for a period.⁸³² When recalling when an event occurred, children below primary school age may report contextual and non-cyclical information (for example, 'I was in kindergarten') as the ability to provide specific timing information develops with age.⁸³³ Primary school children may not only recall contextual information but may specify when an event happened (that is, day, month and year; for example, 'the event happened on a Monday in March in 2013').⁸³⁴

Victims with intellectual disabilities

Memories of school-aged children⁸³⁵ with mild and moderate intellectual disabilities are generally as durable as those of children without intellectual disabilities.⁸³⁶ Children with mild and moderate intellectual disabilities can usually provide accurate accounts of what they remember of events, when asked appropriate free-recall questions.⁸³⁷ Children with severe intellectual disabilities usually require support from people who understand their communication styles and abilities.⁸³⁸

Factors associated with the circumstances of reporting childhood sexual abuse

Factors that can influence memory reports at the time of retrieval include (1) the type of questions asked; (2) the extent to which the victim is emotionally distressed; and (3) exposure to misinformation.

The influence of the type of questions asked

The type of questions asked tends to influence the information retrieved from memory. The most reliable and accurate memory reports are generally provided in response to free recall

⁸²⁹ Chapter 4.1.

⁸³⁰ Adolescents are aged 12–17.

⁸³¹ Chapter 4.3.

⁸³² Chapter 4.1.

⁸³³ Chapter 7.3.

⁸³⁴ Ibid.

⁸³⁵ In most Australian states and territories, school-aged children are aged 6–17.

⁸³⁶ Chapter 5.1.

⁸³⁷ Ibid.

⁸³⁸ Chapter 8.4.

prompts.⁸³⁹ Leading questions, questions posing options for agreement and other forms of suggestive questioning tend to lead to errors.⁸⁴⁰ Cross-examination style questions that do not include free-recall prompts tend to impair the memory reports of victims at the time of retrieval, particularly of pre-schoolers, primary school children and distressed witnesses.⁸⁴¹ Repeated questioning on the same topic may lead children to infer that their previous answer was incorrect, and as a result, they may doubt and change their answers, leading to inaccuracies and inconsistencies in their responses.⁸⁴² Preverbal children and pre-schoolers in particular may convey their experiences non-verbally, inviting use of non-verbal techniques⁸⁴³ that require careful use, if at all, as some non-verbal techniques can increase recall error rates despite increasing the amount recalled.⁸⁴⁴

The influence of distress on memory at retrieval

Emotional distress, shame and fear experienced at the time of an interview or in court can overwhelm a witness and impair their ability to retrieve relevant memories.⁸⁴⁵ Supportive interviewing techniques that reduce stress at recall facilitate more accurate and complete memory reports.⁸⁴⁶ Supplemental interviews can assist victims to recall more information as they can have a reminiscence effect.⁸⁴⁷ Incremental reporting across multiple interviews with short gaps between interviews may facilitate more accurate and complete memory reports.⁸⁴⁸

Suggestibility of victims

Susceptibility to misinformation varies according to social, familial and cognitive factors.⁸⁴⁹ After encoding, young children, who rely on their episodic memories, are more resistant than adolescents and adults to misinformation, social conformity pressures and spontaneous reports of false memories.⁸⁵⁰ Due to the greater reliance by adolescents and adults on their general world knowledge to fill in memory gaps, young children are least likely to be susceptible to these types of memory errors during the retention period.⁸⁵¹ Generally, false

⁸³⁹ Chapter 8.1.

⁸⁴⁰ Chapters 4.4, 8.4.

⁸⁴¹ Chapter 8.3.

⁸⁴² Chapter 8.2.

⁸⁴³ Chapter 4.3.

⁸⁴⁴ Chapter 8.3.

⁸⁴⁵ Chapter 6.6.

⁸⁴⁶ Chapter 8.2

⁸⁴⁷ Ibid.

⁸⁴⁸ Ibid.

⁸⁴⁹ Chapter 4.3.

⁸⁵⁰ Chapter 4.4.

⁸⁵¹ Ibid.

memory experiments have shown that most people (70–85 per cent) are not susceptible to misinformation⁸⁵²; and that misinformation effects are mostly for details that are not particularly memorable.⁸⁵³

Research about memory

Research on human memory processes uses a variety of methods, each of which has different strengths and limitations applicable to memories of child sexual abuse.⁸⁵⁴ Most controlled laboratory experiments apply to bystanders who observed an event. Their applicability to cases of child sexual abuse is more limited than that of analogue studies, which test memory for real-world personal life experiences that include features with some similarity to experiences of childhood sexual abuse (for example, intrusive medical procedures and genital touching).⁸⁵⁵ By comparison, field studies examine memory for real-world events, but lack experimental controls.⁸⁵⁶ For instance, field studies of trauma victims lack control over the circumstances at the time of encoding⁸⁵⁷ and are subject to sample selection biases.⁸⁵⁸

⁸⁵² Chapter 5.6.

⁸⁵³ Ibid.

⁸⁵⁴ Chapter 3.2.

⁸⁵⁵ Chapter 3.3.

⁸⁵⁶ Ibid.

⁸⁵⁷ Ibid.

⁸⁵⁸ Ibid.

