Policing: A Journal of Policy and Practice, 2024, **18**, 1–11
https://doi.org/10.1093/police/paad097
Advance access publication 9 January 2024
Original Article

Five considerations about memory processes for child investigative interviewers

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ABSTRACT

In cases of child abuse, children are required to retrieve details from their memory as accurately as possible. Previous research has shown that children's memory reports can be heavily influenced by an interviewer, but many interviewers do not understand memory processes or know how their practices impact children's memories. While interviewers are commonly recommended to adhere to expert guidelines, the current article aims to explain the memory-related reasons underlying *why* some interview practices are recommended and further aims to dispel some misconceptions about memory. Five considerations about children's memory are described: (1) the rate that details are forgotten from memory cannot justify rushed interview planning, (2) considerations for eliciting details from different subsystems of long-term memory, (3) how question phrasing impacts children's memory retrieval processes, (4) the inaccuracies caused by the reconstructive nature of memory, and (5) the memory challenges for children reporting multiple incidents of abuse.

Physical evidence and eyewitness reports are often lacking in cases of child abuse, so an interview with the child can form the primary evidence (Pollack, 2018; Walsh *et al.*, 2010). For child witnesses (typically considered under 18 years old; Boxall and Fuller, 2016; Ministry of Justice, 2022), many jurisdictions across the UK, Canada, Australia, New Zealand, and Israel allow a recording of their interview to be played at court as their evidence-in-chief (Burrows and Powell, 2014; Crenshaw *et al.*, 2016). Accordingly, the interviewer's ability to elicit detailed and accurate information from the child can be critical to case outcomes. The interviewers who speak to children may be police or—in some jurisdictions—non-police interviewers such as child welfare workers, psychologists, or other trained professionals (Child Welfare Information Gateway, 2023; see Magnusson *et al.*, 2020; Powell *et al.*, 2016 participants). Even for well-trained professionals, interviewing children can be a complex task that poses many challenges. For example, children can be reluctant to disclose abuse and even falsely deny abuse (Blasbalg *et al.*, 2019; Collin-Vézina *et al.*, 2015; Malloy *et al.*, 2007). When children are ready to disclose their experiences, interviewers must then adapt their questions to children's developing cognitive skills, such as their memory abilities.

Recounting abusive events requires a child to retrieve information from memory with as much detail and accuracy as possible. Importantly, the detail and accuracy of children's memory reports may be heavily influenced by factors that are under the interviewer's control, such as the interview structure and the phrasing of questions (Brown *et al.*, 2013; Brubacher *et al.*, 2012; Larsson and Lamb, 2009). Given interviewers' potential for influence over children's reports, several guidelines have been published that recommend evidence-based practices to support children's memory during interviews (as well as supporting them in other manners, e.g. *Achieving Best Evidence* [*ABE*], Ministry of Justice, 2022). However, numerous studies have shown that interviewers often struggle to adhere to these guidelines in the field (Lamb, 2016; Luther *et al.* 2014; Westcott and Kynan, 2006), even after receiving specialist training (Smith *et al.*, 2009).

One factor contributing to interviewers' difficulties adhering to best-practice guidelines may be a lack of understanding about the underlying reasons *why* recommended practices support children. Indeed, a key component of applying recommended practices is knowing the reasons *why* they are performed that way (Cheung *et al.*, 2017; Lee and Strong, 2003). Knowing *why* builds conceptual knowledge that can be mentally integrated with performance knowledge to understand the implications of a practice and adapt the practice to new situations (Cheung *et al.*, 2017; Mylopoulos *et al.*, 2018). Previous research has identified that many police interviewers do not know why or how their interviewing practices impact children's memory, and some even hold misconceptions about how memory works (Chung *et al.*, 2022; Meyer and Reppucci, 2007; Wright *et al.*, 2007). Other professional interviewer groups—including child welfare workers and psychologists—have also demonstrated some inconsistencies in their understanding of children's memory processes (Buck *et al.*, 2014; Erens *et al.*, 2020; Melinder *et al.*, 2004).

The current article provides an initial step in supporting interviewers' understanding of children's memory processes. While interviewers are commonly recommended to adhere to expert guidelines, this article introduces interviewers to the memory-related reasons underlying why some interview practices are recommended and how these practices influence children's memory. Understanding the mechanisms underlying recommendations is expected to support interviewers to apply them (see Cheung *et al.*, 2017). This article is further designed to dispel misconceptions about children's memory and provide readers with an accessible summary of the scientific literature regarding memory processes. Five considerations about memory processes relevant to conducting child interviews are explained. Each consideration is presented below in turn, accompanied by a discussion of the empirical research related to it.

MEMORY FORGETTING RATES ENCOURAGE A PROMPT INTERVIEW, BUT NOT AN UNPLANNED ONE

It is rather intuitive to understand that the number of details available for child witnesses to retrieve from memory reduces with increasing time delays (Flin *et al.*, 1992; Jones and Pipe, 2002). To maximize how many details children can report about an abusive incident, an interview should be conducted promptly once abuse is reported. However, sometimes interviews can be conducted so quickly that interviewers forego important pre-interview planning tasks like preparing key questions and building rapport with the child (Chung *et al.* 2022; Hill and Moston, 2011; Luther *et al.*, 2014; Rivard and Compo, 2017). Police interviewers report feeling pressure to conduct interviews quickly (Aarons and Powell, 2003; Kebbell and Milne, 1998), and child witnesses have reported that their interviews occurred rashly without warning or preparation (Wade and Westcott, 2018; Westcott and Davies, 1996). One reason for hurrying to an interview is an over-inflated concern about capturing the memory quickly while it is 'fresh'; research has found that police officers expect witnesses to forget information more quickly than they really do (Granhag *et al.*, 2005; Knutsson and Allwood, 2015; Krix *et al.*, 2015).

Children's rate of forgetting details is not so fast that there is no time to plan the interview beforehand. Over 150 years of research has demonstrated that details do not fade from memory at a constant rate but rather are quickly lost in the initial hours and days following an event, after which forgetting rates slow substantially so that remaining details are retained for much longer periods (Bauer and Larkina, 2014; Ebbinghaus, 1885; Wixted and Carpenter, 2007). The initial sharp loss of details transpires particularly fast for children's memories (compared with adults'; Bauer and Larkina, 2014; Brainerd and Reyna, 1995), but even young children's memories for important events like abuse can then remain largely accurate for months or years (Goodman *et al.*, 2019; Jones and Pipe, 2002). It is common for children to delay disclosing abuse for weeks, months, or even years (Loinaz *et al.*, 2019; McGuire and London, 2020). Thus, by the time authorities are aware of potential abuse, a child's forgetting rates often have already reduced to a slow pace. Accordingly, memory loss concerns cannot justify conducting these interviews hastily or without appropriate preparation.[1]

Planning and preparation tasks increase the likelihood of eliciting a disclosure from a child (Rohrabaugh *et al.*, 2016; Sternberg *et al.*, 1997) and can ensure that the interview will be held in a trauma-informed manner (i.e. the interview will not exacerbate the child's experience of trauma; Hickle, 2016; Webb, 2015). Tasks that contribute to a trauma-informed interview include: preparing key interview topics and checking recording equipment to reduce risks that the child may have to re-tell their story later, determining the child's abilities so that any communication supports can be organized and questions will be phrased developmentally appropriately, scheduling the interview for a time and place where the child will be motivated (e.g. the child is not missing a fun event at school or a cultural celebration), building trust and rapport with the child prior to substantive interview phases, organizing an appropriate interview location, and avoiding wearing uniforms or weapons when meeting the child (Evans and Graves, 2018; Hickle, 2016; Webb, 2015). Spending a short amount of time to prepare for an interview in these ways can reduce a child's motivational and emotional barriers to discussing abuse, as well as reducing their likelihood of re-traumatization from the criminal justice system (Webb, 2015).

Of course, there are factors unrelated to memory for interviewers to consider when timing interviews. In some cases, factors such as the immediate safety risk of the child, the collection of any physical evidence, or whether a suspect is in custody will mean that interviews need to be scheduled very promptly. When a case presents immediate concerns unrelated to memory, interviewers may have reduced time available to plan and prepare for the interview. However, some degree of preparation is still advised (albeit in reduced time) to support children's comfort and disclosure of abuse-related details during the interview (Rohrabaugh *et al.*, 2016; Sternberg *et al.*, 1997). Furthermore, whilst taking a short amount of time to plan and prepare for an interview is recommended, interviews should not be postponed extensively (e.g. for weeks after abuse is reported). Delays increase the potential for children to be exposed to post-event information (i.e. information about the abuse that children encounter after it—such as a detail suggested by a friend or parent). Research has consistently shown that children incorporate post-event information into their later reports of key events, leading to errors (Bright-Paul and Jarrold, 2012; London *et al.*, 2009; see 'The reconstructive nature of memory means that inconsistencies and errors should be expected in true reports, and that leading questions can cause false reports' for more detail on post-event information). Moreover, because children's memory becomes more general over time, it can be difficult for them to provide specific details after long delays (Brainerd and Reyna, 2004).

[1]Even if abuse is reported immediately after the offending (when forgetting is occurring at a fast pace), rushing into an interview without proper planning may be inappropriate because there may be other factors to consider like the collection of physical evidence, the child's level of tiredness and motivation to talk, and the child's processing of a potentially traumatic event (Ministry of Justice, 2022; Rohrabaugh *et al.*, 2016).

Summary

In many cases, interviewers should feel comfortable allocating time for pre-interview planning and preparation tasks because forgetting rates do not support hasty or unplanned interviews. Completing appropriate planning and preparation tasks supports children to disclose abuse and avoid re-traumatization through the experience of an interview (Rohrabaugh *et al.*, 2016; Sternberg *et al.*, 1997; Webb, 2015). Other case factors unrelated to memory, such as the child's immediate safety or the collection of physical evidence, are also important to the timing of an interview; these factors can truncate the time able to plan and prepare in some cases. Delaying interviews extensively increases children's risk of encountering post-event information and challenges their ability to provide specific details.

CONSIDER THE DETAILS TO RETRIEVE FROM DIFFERENT LONG-TERM MEMORY SYSTEMS

Considering the underlying structure of long-term memory systems allows interviewers to understand the memory tasks that children are completing when answering questions and can inform interviewer decisions about when to elicit certain types of information and how to support retrieval of that information. Long-term memory is not a single system but is comprised of separate components. Of most relevance to interviewers, the *declarative* system stores information that can be consciously recalled and verbally communicated and is divided into two subsystems: (1) *semantic memories* that contain generic knowledge and (2) *episodic memories* that contain personally experienced events (Baddeley, 2001; Tulving, 1984). As well as containing different types of information, semantic and episodic memories have different developmental trajectories (semantic generally develops earlier), retention periods (semantic can be retained longer), and some different storage regions within the brain (although numerous regions overlap; Brainerd and Reyna, 1995; Hudson and Nelson, 1986; Quon and Atance, 2010; Renoult *et al.*, 2019; Tulving, 1984). Despite their differences, both memories will likely be relevant to child abuse investigations: episodic memories include the happenings of an abusive incident, while semantic memories may include an offender's name, relationships between individuals, the layout or address of often-visited locations, and descriptions of well-known objects.

Previously, interviewers have been shown to shift between asking for semantic and episodic information (Brubacher *et al.*, 2013). However, retrieving memory information can be more effortful and tiring when witnesses must constantly swap between retrieving episodic and semantic details (e.g. topic-hopping, rather than completing tasks one-at-a-time; Ceci and Howe, 1978; Maylor *et al.*, 2001; Mayr and Kliegl, 2000; Melega and Renoult, 2023). Given that errors can increase as children become more mentally tired (Hanway *et al.*, 2020, Könen *et al.*, 2015), interviewers are advised to focus their questioning on one type of information at-a-time and minimize switching back-and-forth so as not to exhaust young witnesses. For example, asking episodic questions about what happened during an incident without interspersing questions about semantic details in between (which instead could be asked later altogether). Interviewers can avoid shifting their questioning between different memory systems by taking notes of mentioned details and following them up later, once the current topic has been exhausted (see Baker *et al.*, 2021 for a review on notetaking).

Child interviewing protocols generally recommend prioritizing episodic information by asking for complete recalls of an episodic incident *before* asking for semantic details (Lamb *et al.*, 2018). This is because the child may be the only source of evidence regarding what occurred during an episodic incident (Pollack, 2018; Walsh *et al.*, 2010), and because episodic details can be fragile in young children's memories (unlike semantic details which are more resistant to forgetting or interference and are easier to retrieve; Brainerd and Reyna, 1995; Hudson and Nelson, 1986; Tulving, 1984). Accordingly, interviewers may wish to secure episodic reports while children are alert and motivated to talk and cover semantic topics later in the interview. However, two studies have found that providing one type of semantic information——details about what *usually* happens during abuse——before recalling one episodic incident can help children report more information overall (Brubacher *et al.*, 2012; Connolly and Gordon, 2014; although see Danby *et al.*, 2022 for different results found with adult witnesses). In some cases, interviewers might find it helpful to consider first asking children about what usually happens, although this practice is not currently emphasized in child interviewing guidelines (see 'Recalling individual incidents of ongoing abuse requires extra support' for more information about memory processes for what usually happens).

To help children report episodic information about abuse, interview guidelines recommend engaging child witnesses in an episodic practice narrative (also called *episodic memory training*; Lamb *et al.*, 2018; Ministry of Justice, 2022; Roberts *et al.*, 2011). During practice narratives, children are prompted early in the interview to recall an innocuous event with open-ended prompts (Anderson *et al.*, 2014; Price *et al.*, 2013; Roberts *et al.*, 2011). Importantly, when practice narratives are about a distinct episodic autobiographical incident (e.g. a recent birthday party, or last night's football practice), they rehearse children in retrieving and reporting episodic details and have been shown to improve the number of details children go on to provide about substantive events later in the interview (as well as serving to build rapport and practice children in responding to open-ended narrative prompts; Anderson *et al.*, 2014; Brubacher *et al.*, 2011; Danby *et al.*, 2017a; Whiting and Price, 2017). Practice narratives should only last a short period (e.g. 5 min), so that they do not exhaust children before substantive issues can be discussed (Davies *et al.*, 2000; Whiting and Price, 2017).

Summary

The declarative memory system comprises of episodic and semantic memories. To minimize the mental work they are requiring of child witnesses, interviewers should consider the type of memory information they want to elicit from a child and structure their interviews to reduce hopping between semantic and episodic questioning. Many guidelines recommended that interviewers prioritize eliciting episodic details. Interviewers can rehearse children in providing episodic details by prompting them to recall an innocuous autobiographical incident prior to

substantive interview phases (i.e. completing an episodic practice narrative).

NON-LEADING OPEN-ENDED PROMPTS SHOULD BE PRIORITIZED TO ENCOURAGE DEEP AND ACCURATE MEMORY RETRIEVAL

When interviewers question children about abuse, the phrasing of their questions has important implications for memory retrieval processes. This is because the phrasing of interview questions acts as cues that guide a witness's searches through memory (Brown and Lamb, 2015; Tulving, 1984). Given that children are susceptible to providing less detailed and less accurate reports than adults (Coxon and Valentine, 1997; Poole and White, 1991), it is particularly important that appropriate interview questions are used with child witnesses to maximize the detail and accuracy of what they retrieve from memory.

Non-leading open-ended prompts are frequently recommended as best-practice questions to use with child witnesses (Lamb *et al.*, 2018; Powell and Snow, 2007). These are questions which encourage elaborate responses without dictating the particular details to report (e.g. 'Tell me everything that happened', 'What else happened?'; Powell and Snow, 2007). The broad nature of open-ended prompts means that they encourage free recall processes; the witness must select and retrieve accessible details from memory (see Larsson and Lamb, 2009; Pipe *et al.*, 2004). This process engages the witness in a deep level of retrieval, supporting recall of a high number of details. Children as young as 4 years old have been shown to provide detailed free recall narratives of events in response to open-ended questions (Flin *et al.*, 1992; Lamb *et al.*, 2003; Poole and White, 1991). Furthermore, most witnesses will retrieve the details that they are most confident in, resulting in highly accurate responses (Dent and Stephenson, 1979; Larsson and Lamb, 2009; Powell and Snow, 2007). In fact, some experimental research has demonstrated that children's memories can be as accurate as adults' when responding to open-ended prompts (of course, even adult memory is not perfect and often contains some errors; Poole and White, 1991).

There are different subtypes of open-ended prompts identified by researchers (although labels and definitions for subtypes vary; Oxburgh *et al.*, 2010). Of particular interest to interviewers tasked with eliciting narrative reports of episodic incidents are *initial invitations*, *breadth*, and *depth* prompts (see Feltis *et al.*, 2010; Powell and Snow, 2007). An *initial invitation* can be used first, to encourage the child to report as much episodic information as possible (e.g. 'Tell me everything that happened when Dad hurt your bottom. Start from the very beginning and go all the way through to the end. Don't leave anything out'.). Initial invitations cast a wide net across children's memory for the event, acting as a broad retrieval cue of what is remembered from that incident (Powell and Snow, 2007). Next, *breadth* prompts can be used to elicit additional activities that occurred during the offending (e.g. 'What else happened?', 'What happened after you went to school?'), and *depth* prompts can be used to ask for elaboration about previously mentioned details ('Tell me more about the part where he touched you'; Orbach and Lamb, 2000; Powell and Snow, 2007). For young children, the clear cue provided in depth prompts is particularly helpful to scaffold and direct their searches through memory (Danby *et al.*, 2017c; Horowitz, 2009; Kobasigawa, 1974).

One way that breadth and depth prompts can be used to support children's searches through memory is to prompt them through the episodic incident multiple times (i.e. encourage children to provide a second narrative of the incident). Completing multiple recalls of an incident has been shown to help children report additional new details not mentioned in their initial recall (although accuracy can drop with subsequent recalls; Boon and Noon, 1994; Darwinkel *et al.*, 2014; Fisher and Geiselman, 1992; Jack *et al.*, 2013). This is because follow-up searches through memory facilitate access to additional details not initially available (Bower, 1967; Kontogianni *et al.*, 2020). It can be particularly helpful to ask children to begin another recall from different points of the incident, rather than always starting at the same beginning point, to facilitate recall of additional details (see Larsson and Lamb, 2009).

Compared with open-ended prompts, children have reliably been shown to respond to specific questions with less accuracy and fewer details (Brown *et al.*, 2013; Dent and Stephenson, 1979; Jones and Pipe, 2002). Specific questions are those which dictate a particular detail to report (such as forced choice questions like 'Was his shirt black or blue?' and yes/no questions like 'Did you tell anyone?'; Powell and Snow, 2007). Specific questions promote a superficial memory retrieval process by only requiring children to recognize a detail in their memories, resulting in less information being recalled (Fisher and Geiselman, 1992; Ibabe and Sporer, 2004; Larsson and Lamb, 2009; Pipe *et al.*, 2004). Furthermore, the particular detail in the question may not be encoded into the child's memory. Rather than explaining that they do not know the answer, children may guess responses, reducing the accuracy of their report (Poole and White, 1991; Waterman *et al.*, 2000). Despite these risks, a small number of specific questions will often be needed to ask children for some key evidentiary details, which are unlikely to be volunteered to open-ended prompts (like the placement of clothing during sexual offences; Stolzenberg and Lyon, 2017; Wylie *et al.*, 2020). Experts recommend asking specific questions only after children's open-ended free recall narrative has been exhausted and minimizing how many are posed overall (Fisher and Geiselman, 1992; Lamb *et al.*, 2018). Furthermore, to continue supporting detailed responses from children, interviewers are advised to use specific wh-questions (e.g. 'What colour were the sheets?') to ask for missing details where possible (Henderson *et al.*, 2022; Stolzenberg and Lyon, 2017; Wylie *et al.*, 2020), and to follow-up responses to specific questions with open-ended prompts (e.g. 'Tell me more about that'; Wolfman *et al.*, 2016; Lamb *et al.*, 2018).

Summary

Non-leading open-ended prompts (including initial invitations, breadth, and depth prompts) encourage free recall memory retrieval in child witnesses. Free recall retrieval contributes to recalling plentiful and accurate details (e.g. Lamb *et al.*, 2003; Poole and White, 1991). Specific questions, which dictate a particular detail for children to report, typically elicit fewer details because they do not facilitate free recall retrieval and can cause

children to guess answers. Interviewers are well-advised to prioritize open-ended prompts with child witnesses. Only after children's open-ended free recall narrative has been exhausted, interviewers are advised to use specific wh-questions to elicit any missing evidentiary details, or to pair any required specific questions with a follow-up open-ended prompt (e.g. 'Tell me more about that').

THE RECONSTRUCTIVE NATURE OF MEMORY MEANS THAT INCONSISTENCIES AND ERRORS SHOULD BE EXPECTED IN TRUE REPORTS, AND THAT LEADING QUESTIONS CAN CAUSE FALSE REPORTS

Whilst many people—including police officers, victim care workers, social workers, and psychologists—have been found to believe that memory permanently stores a set record of what has been experienced (like rewinding and watching back a videotape; Akhtar *et al.*, 2018; Chung et al, 2022; Conway *et al.*, 2014; Kagee and Breet, 2015; Legault and Laurence, 2007), this conceptualization of memory has been rejected by experts for decades (Bartlett, 1932). Instead, experts now widely agree that memory stores individual details from an event which need to be reconstructed together in the mind at the time of remembering (Bartlett, 1932; Schacter and Addis, 2007). Reconstructing memories at retrieval means that memory acts in a dynamic and flexible manner, where pre-existing knowledge can be considered along with details from a target memory to improve overall understanding and future expectations (Schacter and Addis, 2007). However, the disadvantage of this reconstructive process is that distortions, errors, and inconsistencies become inherent in the remembering process because different details can be included each time the memory is reconstructed (Schacter *et al.*, 2011). Reconstructive memory abilities improve with age; children's event reconstructions become more detailed and consistent as they get older (Hudson, 1990; Hudson and Nelson, 1986; Spinhoven *et al.*, 2006). For example, Spinhoven *et al.* (2006) examined reports of stressful life events over time from a sample of 12- to 18-year-old child refugees. Memory inconsistencies across children's reports decreased with age; that is, older children reported the events more consistently than younger children.

It can be worrying to consider that memory is inherently flawed, especially given the importance of witness statements for crimes like child abuse (Pollack, 2018; Walsh *et al.* 2010). However, research into children's memory has shown that the central details of what occurred (i.e. the main happenings of an experienced event) are generally well remembered and reported consistently over time, even by young children (Brown *et al.*, 2008; Toth and Valentino, 2008). Instead, it is peripheral details (e.g. dates, sequences, clothing, background objects) that are most likely to be poorly reconstructed and inconsistently reported (especially after long delays; Brown *et al.*, 2008; Pichler *et al.*, 2021; Toth and Valentino, 2008). For example, Friedman and Lyon (2005) found that many of the abilities required to reconstruct the time and date that an event occurred did not begin to emerge until children were 6 years old, and that 13-year-olds still struggled with reconstructing the sequence and contiguity of events. Even adults still inconsistently report peripheral details (Luna and Migueles, 2009). Children's inconsistent or inaccurate reporting of peripheral details is particularly apparent when reporting emotional events, presumably owing to emotion focusing attention of the central details to highlight dangers (Toth and Valentino, 2008).

Unfortunately, many people incorrectly believe that inconsistencies in a child's report indicate the child is lying (Cashmore and Trimboli, 2006; Cossins, 2008). Given that inaccuracies and inconsistencies are inherent in the remembering process, these should not be taken as indications that a child's account is falsified. Furthermore, since inaccuracies and inconsistencies are particularly likely to occur for peripheral—rather than central—details, it is risky to question children directly about peripheral details. In fact, defence lawyers have been shown to focus their questioning of child witnesses around peripheral details to purposely demonstrate the inconsistencies in a child's memory (Hanna *et al.*, 2012; Pichler *et al.*, 2021). Unless peripheral details are volunteered by children via free recall to open-ended prompts, or the details are particularly pertinent to the prosecution of the case (e.g. points of proof), interviewers should avoid unnecessary or excessive questioning about peripheral details.

Another manner that memory reconstruction can lead to problems for interviewers is when children have been exposed to post-event information. As mentioned earlier, post-event information is information relating to an incident that a witness is exposed to after it (e.g. details suggested by a friend). Numerous studies have shown that post-event information reduces the accuracy of children's memory reports (Bright-Paul and Jarrold, 2012; London *et al.*, 2009; Powell *et al.*, 1999). The reconstructive nature of memory means that post-event information can sometimes be reconstructed into a witness's existing memory for an event; this can occur when it becomes confused in memory with the original event or is reconstructed into the original event memory to fill memory gaps (Holliday *et al.*, 2002; Schacter *et al.*, 2011). Children under 6 years old are at particular risk of reconstructing post-event information into their memories for events; research has found that with increasing age children become less prone to taking on post-event information as they develop better memory and language skills (Paz-Alonso and Goodman, 2016; Templeton and Wilcox, 2000; Volpini *et al.*, 2016).

Whilst many sources of post-event information may not be under the control of an interviewer, one key source of post-event information that is manageable is the presence of leading questions. Both specific and open-ended prompts are considered leading if the question introduces a detail not provided by the witness (e.g. 'Tell me about the car' when no car had been mentioned; Sharman *et al.*, 2014). Reconstructive memory processes can construct these suggested details into memory reports of the incident, especially in young children (see Goodman and Melinder, 2007). Open-ended leading questions are particularly likely to produce inaccurate memory reports, since they encourage deep processing of the suggested detail (Sharman *et al.*, 2014; Sharman and Powell, 2012). Unfortunately, adults are very poor at determining true from false accounts from child witnesses (Connolly *et al.*, 2008), so once leading questions have been asked it can very difficult—or impossible—to unpick

their effects on memory (Ceci and Bruck, 1993). Accordingly, interviewers must avoid leading questions.

Summary

Memory processes are reconstructive in nature, opposing common beliefs that memory acts like a record of what has occurred. Reconstructive processes mean that errors and inconsistencies are inherent in memory reports, particularly for young children who are still developing their memory abilities (Volpini *et al.*, 2016). Since peripheral details are particularly poorly remembered, asking needless or excessive questions about peripheral details may increase children's errors and inconsistencies (Toth and Valentino, 2008). Furthermore, leading questions introducing details a child has not mentioned can implant incorrect details into memory reports, forming convincing and long-lasting inaccuracies (Ceci and Bruck, 1993; Holliday *et al.*, 2002). Thus, it is important to avoid leading questions.

RECALLING INDIVIDUAL INCIDENTS OF ONGOING ABUSE REQUIRES EXTRA SUPPORT

Many children suffer multiple incidents of abuse before authorities become aware of it (Australian Institute of Health and Welfare, 2018; Trocome *et al.*, 2010). The commonality of repeated abuse is, in part, due to children's reluctance to disclose abuse to adults promptly (Foynes *et al.*, 2009; McElvaney, 2015). In many jurisdictions, legislation requires children to provide specific episodic details about distinct incidents of abuse (i.e. to 'particularise' separate incidents) for charges to be laid (e.g. S. v The Queen, 1989). Particularization requirements protect the rights of the accused and prevent multiple convictions for a single offence (see Woiwod and Connolly, 2017). Furthermore, detailing the acts performed on separate incidents guides charging decisions; charges carrying higher sentences are applied when an incident involves severe abuse (Boxall and Fuller, 2016) or when multiple incidents can be particularized (e.g. continuous child sexual abuse statutes often require description of two or three separate incidents; Woiwod and Connolly, 2017). Children's credibility in court is also increased when they provide unique details from discrete episodic incidents of abuse (Burrows and Powell, 2013; Smith and Milne, 2011). Despite these requirements, particularizing individual incidents is difficult for children because memory for events experienced repeatedly has unique complexities (compared with events experienced only once; see Brubacher and Earhart, 2019).

When an event is experienced repeatedly, a generic representation of what usually occurs is encoded into memory (i.e. a 'script'; Schank and Abelson, 1977). Scripts do not represent any individual incident but rather the typical happenings of all incidents (i.e. script information is considered semantic knowledge, not an episodic incident; Brubacher *et al.*, 2012). Scripts are recalled in a timeless present or conditional tense (e.g. 'We *play/would play* the secret game') with optional details (e.g. '*Sometimes* we do it in the bedroom *or* the bathroom') and impersonal pronouns (e.g. '*You* play it without clothes on'; Connolly *et al.*, 2008; Fivush *et al.*, 1984). Children can develop more detailed and complex scripts with age; 3-year-olds' can only create rudimentary scripts with few details but 7-year-olds' scripts are complex with many details (Farrar and Goodman, 1992). While scripts support even young children to report the regularly occurring details from events, they create great difficulty for all children to provide changing or different details from an individual incident (Powell *et al.*, 1999). Furthermore, children report scripts more easily and readily than they report individual incidents (Hudson and Nelson, 1986; Powell *et al.*, 1999). This causes challenges for particularization requirements.

Two studies have found that asking for children's script (what usually happens) before having them particularize one episodic incident helped them report more information overall during interviews (Brubacher *et al.*, 2012; Connolly and Gordon, 2014). Eliciting a script first might also generate unique details that interviewers can subsequently use to ask about individual incidents (e.g. 'It happens in different places like my house, his house, or the caravan' might lead to three different incidents to particularize). However, one recent study of adult witnesses found that providing their script first reduced the number of details that they subsequently provided when particularizing two separate incidents (Danby *et al.*, 2022). The effects of recalling the script first on children's subsequent reports of two or more individual incidents have yet to be tested.

An additional challenge for children reporting individual incidents of abuse is the commission of *source monitoring errors*. When recalling an individual incident, children commonly confuse details from other episodic incidents (e.g. reporting that a penetrative offence occurred the time in the bedroom, when it actually occurred the time in the bathroom; Woiwod *et al.*, 2019). According to *the Source Monitoring Framework*, these errors occur if the child incorrectly decides which incident contained a detail at the point of memory retrieval (Johnson *et al.*, 1993). Source-monitoring errors can result in investigative resources being used to pursue incorrect information, or children appearing unreliable as witnesses. Children are more prone to these errors than adults because source-monitoring abilities develop slowly over childhood (Lindsay *et al.*, 1991; Roberts, 2002; Ryan, 2010). However, source-monitoring errors are even common among adults (Deck and Paterson, 2020).

When interviewers require children to particularize individual incidents, they should focus on only one episodic incident at a time (Brubacher and Earhart, 2019; Tulving, 1985). To achieve this, interviewers should ask 'Has [child's words for abuse] happened one time or more than one time?' to establish whether abuse is repeated, and then direct the child to one individual incident. Children as young as 4 years old can accurately determine that an event occurred more than once, whereas estimating the specific number of times is much more difficult for children (Sharman *et al.*, 2011).

Once repeated abuse is established, interviewers can then direct children to particularize an individual incident of abuse that they remember well. Children commonly recall most details from the first and last incidents from repeated events, rather than middle ones (Danby *et al.*, 2017b; Woiwod and Connolly, 2017). This finding reflects an application of *the serial position effect*—the superior memory for early and late items in a set relative to middle items (Ebbinghaus, 1885). The most recent incident of abuse may be particularly helpful to direct children to recall if it was a catalyst for police involvement (Woiwod and Connolly, 2017). Of course, each child has individual factors impacting

their memory. In some cases, the first time might be difficult to recall if it occurred when the child was very young or if early grooming behaviours blurred children's perceptions of when abuse began. Furthermore, details that are different from usual will stand out in memory (Farrar and Goodman, 1992; Woiwod and Connolly, 2017), so some children may indicate that a middle incident is well recalled by mentioning it spontaneously (e.g. 'It was always at nighttime except one time it was early in the morning'). Directing children to recall the last, first, or another best-remembered incident is recommended to support children to particularize separate occasions.

Once recalling an individual incident, interviewers should pose narrative questions in past tense (e.g. 'What happen*ed* next?') and actively listen to children's responses. Present tense language (e.g. 'He touch*es* me') can denote that a script is being recalled whereas past tense (e.g. 'He touch*ed* me') can denote that an episodic memory is being recalled (although it cannot guarantee an episodic memory is being recalled; Connolly *et al.*, 2008; Fivush *et al.*, 1984). Past tense narrative questions should be used to exhaust children's memory for one incident entirely before asking about other incidents. If children respond in present tense or discuss numerous incidents at once, the interviewer will need to direct them to a single individual incident (Burrows and Powell, 2013). Clearly labelling each incident with a unique name using the child's words (e.g. '*the time in the bedroom*', '*the time after school*') is one helpful method through which interviewers can direct children to the incident they want recalled (e.g. 'We are just talking about *the time in the bedroom* right now. Tell me more about *the time in the bedroom*'). Using clear labels for incidents further helps cue the child into the correct memory to recall and reduces source-monitoring errors (Brubacher *et al.*, 2018; Pearse *et al.*, 2003).

Summary

After repeated incidents, scripts of what usually happens are encoded and individual incidents are often confused in memory (Johnson *et al.*, 1993; Schank and Abelson, 1977). This poses a challenge for particularization requirements. Interviewers should avoid asking children for a specific estimate of how many times abuse has occurred, and instead establish frequency by asking whether the abuse occurred one time or more than one time. Children alleging that abuse has occurred more than once should be focused on one well-recalled incident at a time (such as the last time, first time, or another time that stands out). Incidents should be labelled with a unique name using the child's words and discussed one-at-a-time. When asking children to particularize incidents, interviewers should phrase questions in past tense to encourage episodic retrieval.

CONCLUSION

This article has described five considerations about children's memory to dispel misconceptions and provide interviewers with an accessible summary of the literature examining memory processes. While interviewers are commonly recommended to adhere to expert guidelines, the current article introduces interviewers to the memory-related reasons underlying *why* some interview practices are recommended and *how* these practices influence children's memory. Understanding the reasons underlying recommendations is expected to support interviewers to apply them (Cheung *et al.*, 2017; Mylopoulos *et al.*, 2018). The literature examining children's memories demonstrates that children can be accurate and capable witnesses to crimes when interviews are appropriately adjusted to their capabilities. Interviewers should adopt developmentally appropriate strategies for supporting children's memory processes and are advised to consider the techniques discussed in this article to support their planning, interview structuring, and questioning with child witnesses.

REFERENCES

Aarons, N. and Powell, M. B. (2003). 'Issues Related to the Interviewer's Ability to Elicit Reports of Abuse from Children with an Intellectual Disability: A Review.' Current Issues in Criminal Justice **14**(3): 257–268. doi:10.1080/10345329.2003.12036266

Akhtar, S., Justice, L. V., Knott, L., Kibowski, F., and Conway, M. A. (2018). 'The 'Common Sense' Memory Belief System and Its Implications.' The International Journal of Evidence & Proof **22**: 289–304. doi:10.1177/1365712718784045

Anderson, G. D., Anderson, J. N., and Gilgun, J. F. (2014). 'The Influence of Narrative Practice Techniques on Child Behaviors in Forensic Interviews.' Journal of Child Sexual Abuse **23**(6): 615–634. doi:10.1080/10538712.2014.932878

Australian Institute of Health and Welfare. (2018). *Family, Domestic and Sexual Violence in Australia*. https://www.aihw.gov.au/getmedia/d1a8d479-a39a-48c1-bbe2-4b27c7a321e0/aihw-fdv-02.pdf.aspx?inline=true (accessed 27 December 2023).

Baddeley, A. (2001). 'The Concept of Episodic Memory.' Philosophical Transactions of the Royal Society of London Series B: Biological Sciences **356**(1413): 1345–1350.

Baker, M., Fessinger, M., McWilliams, K., and Williams, S. (2021). 'The Use of Note-Taking During Forensic Interviews: Perceptions and Practical Recommendations for Interviewers.' Developmental Child Welfare **3**(1): 20–35. doi:10.1177/25161032211002187

Bartlett, F. C. (1932). Remembering. Cambridge, England: Cambridge University Press.

Bauer, P. J. and Larkina, M. (2014). 'Childhood Amnesia in the Making: Different Distributions of Autobiographical Memories in Children and Adults.' Journal of Experimental Psychology: General **143**(2): 597–611. doi:10.1037/a0033307

Blasbalg, U., Hershkowitz, I., Lamb, M. E., Karni-Visel, Y., and Ahern, E. C. (2019). 'Is Interviewer Support Associated with the Reduced Reluctance and Enhanced Informativeness of Alleged Child Abuse Victims?' Law and Human Behavior **43**(2): 156–165. doi:10.1037/lhb0000303

Boon, J. and Noon, E. (1994). 'Changing Perspectives in Cognitive Interviewing.' Psychology, Crime and Law **1**(1): 59–69. doi:10.1080/10683169408411936

Bower, G. (1967). 'A Multicomponent Theory of a Memory Trace.' In Spence, K. W. and Spence, J. (eds), The Psychology of Learning and Motivation: I, vol. **1**. Oxford, England: Academic Press, pp. 230–325.

Boxall, H. and Fuller, G. (2016). Brief Review of Contemporary Sexual Offence and Child Sexual Abuse Legislation in Australia: 2015 Update. Special Reports. Canberra: Australian Institute of Criminology. doi:10.52922/sp09951

Brainerd, C. J. and Reyna, V. F. (1995). 'Learning Rate, Learning Opportunities, and the Development of Forgetting.' Developmental Psychology **31**(2): 251–262. doi:10.1037/0012-1649.31.2.251

Brainerd, C. J. and Reyna, V. F. (2004). 'Fuzzy-Trace Theory and Memory Development.' Developmental Review **24**(4): 396–439. doi:10.1016/j.dr.2004.08.005

Bright-Paul, A. and Jarrold, C. (2012). 'Children's Eyewitness Memory: Repeating Post-event Misinformation Reduces the Distinctiveness of a Witnessed Event.' Memory **20**(8): 818–835. doi:10.1080/09658211.2012.708345

Brown, D. A. and Lamb, M. E. (2015). 'Can Children Be Useful Witnesses? It Depends How They Are Questioned.' Child Development Perspectives **9**(4): 250–255. doi:10.1111/cdep.12142

Brown, D. A., Lamb, M. E., Lewis, C. *et al.* (2013). 'The NICHD Investigative Interview Protocol: An Analogue Study.' Journal of Experimental Psychology. Applied **19**: 367–382. doi:10.1037/a0035143

Brown, D. A., Lamb, M. E., Pipe, M. E., and Orbach, Y. (2008). 'Pursuing "The Truth, the Whole Truth, and Nothing but the Truth": Forensic Interviews with Child Victims or Witnesses of Abuse.' In Howe, M. L., Goodman, G. S., and Cicchetti, D. (eds), Stress, Trauma, and Children's Memory Development: Neurobiological, Cognitive, Clinical and Legal Perspectives. New York: Oxford University Press, pp. 267–301.

Brubacher, S. J. and Earhart, B. (2019). 'Investigative Interviewing About Repeated Experiences.' In Dickinson, J., Compo, N., Carol, R., Schwartz, B., and McCauley, M. (eds), Evidence-Based Investigative Interviewing: Applying Cognitive Principles. New York: Routledge.

Brubacher, S. P., Earhart, B., Roberts, K. P., and Powell, M. B. (2018). 'Effects of Label Training and Recall Order on Children's Reports of a Repeated Event.' Applied Cognitive Psychology **32**(5): 600–609. doi:10.1002/acp.3440

Brubacher, S. P., Malloy, L. C., Lamb, M. E., and Roberts, K. P. (2013). 'How Do Interviewers and Children Discuss Individual Occurrences of Alleged Repeated Abuse in Forensic Interviews?' Applied Cognitive Psychology **27**: 443–450. doi:10.1002/acp.2920

Brubacher, S., Roberts, K. P., and Powell, M. B. (2011). 'The Effects of Practicing Episodic Versus Scripted Recall on Children's Subsequent Narratives of a Repeated Event.' Psychology, Public Policy, & Law **17**: 286–314. doi:10.1037/a0022793

Brubacher, S. P., Roberts, K., and Powell, M. B. (2012). 'Retrieval of Episodic Versus Generic Information: Does the Order of Recall Affect the Amount and Accuracy of Details Reported by Children About Repeated Events?' Developmental Psychology **48**: 111–122. doi:10.1037/a0025864

Buck, J. A., Warren, A. R., Bruck, M., and Kuehnle, K. (2014). 'How Common Is "Common Knowledge" About Child Witnesses Among Legal Professionals? Comparing Interviewers, Public Defenders, and Forensic Psychologists with Laypeople.' Behavioral Sciences & the Law **32**: 867–883. doi:10.1002/bsl.2150

Burrows, K. S. and Powell, M. (2013). 'Prosecutors' Recommendations for Improving Child Witness Statements About Sexual Abuse.' Policing and Society **24**: 189–207. doi:10.1080/10439463.2013.784305

Burrows, K. S. and Powell, M. (2014). 'Prosecutors' Perspectives on Using Recorded Child Witness Interviews About Abuse as Evidence-in-Chief.' Australian and New Zealand Journal of Criminology **47**(3): 374–390. doi:10.1177/0004865814522821

Cashmore, J. and Trimboli, L. (2006). 'Child Sexual Assault Trials: A Survey of Juror Perceptions.' Crime and Justice Bulletin **102**: 1–20.

Ceci, S. J. and Bruck, M. (1993). 'Suggestibility of the Child Witness: A Historical Review and Synthesis.' Psychological Bulletin **113**(3): 403–439. doi:10.1037/0033-2909.113.3.403

Ceci, S. J. and Howe, M. J. A. (1978). 'Age-Related Differences in Free Recall as a Function of Retrieval Flexibility.' Journal of Experimental Child Psychology **26**(3): 432–442. doi:10.1016/0022-0965(78)90123-6

Cheung, J. J. H., Kulasegaram, K. M., Woods, N. N. *et al.* (2017). 'Knowing How and Knowing Why: Testing the Effect of Instruction Designed for Cognitive Integration on Procedural Skills Transfer.' Advances in Health Sciences Education **23**(1): 61–74. doi:10.1007/s10459-017-9774-1

Child Welfare Information Gateway. (2023). *Forensic Interviewing: A Primer for Child Welfare Professionals*. https://www.childwelfare.gov/pubs/factsheets/forensicinterviewing/ (accessed 27 December 2023).

Chung, K., Ding, L., and Sumampouw, N. (2022). 'Police's and Victim Care Officers' Beliefs About Memory and Investigative Interviewing with Children: Survey Findings from Malaysia.' Applied Cognitive Psychology **36**: 573–580. doi:10.1002/acp.3945

Collin-Vézina, D., De La Sablonnière-Griffin, M., Palmer, A. M., and Milne, L. (2015). 'A Preliminary Mapping of Individual, Relational, and Social Factors That Impede Disclosure of Childhood Sexual Abuse.' Child Abuse & Neglect **43**: 123–134. doi:10.1016/j.chiabu.2015.03.010

Connolly, D. A. and Gordon, H. M. (2014). 'Can Order of General and Specific Memory Prompts Help Children to Recall an Instance of a Repeated Event That Was Different from the Others?' Psychology, Crime & Law **20**: 852–864. doi:10.1080/1068316X.2014.885969

Connolly, D. A., Price, H. L., Lavoie, J. A. A., and Gordon, H. M. (2008). 'Perceptions and Predictors of Children's Credibility of a Unique Event and an Instance of a Repeated Event.' Law and Human Behavior **32**(1): 92–112. doi:10.1007/s10979-006-9083-3

Conway, M. A., Justice, L. V., and Morrison, C. M. (2014). 'Beliefs About Autobiographical Memory.' Psychologist **27**(7): 502–505.

Cossins, A. (2008). 'Children, Sexual Abuse and Suggestibility: What Laypeople Think They Know and What the Literature Tells Us.' Psychiatry, Psychology and Law **15**(1): 153–170. doi:10.1080/13218710801886040

Coxon, P. and Valentine, T. (1997). 'The Effects of the Age of Eyewitnesses on the Accuracy and Suggestibility of Their Testimony.' Applied Cognitive Psychology **11**(5): 415–430. doi:10.1002/(sici)1099-0720(199710)11:5<415::aid-acp469>3.0.co;2-a

Crenshaw, D. A., Stella, L., O'Neill-Stephens, E., and Walsen, C. (2016). 'Developmentally and Trauma-Sensitive Courtrooms.' Journal of Humanistic Psychology **59**(6): 779–795. doi:10.1177/0022167816641854

Danby, M. C., Brubacher, S. P., Sharman, S. J., and Powell, M. B. (2017a). 'The Effects of One Versus Two Episodically Oriented Practice Narratives on Children's Reports of a Repeated Event.' Legal and Criminological Psychology **22**: 442–454. doi:10.1111/lcrp.12110

Danby, M. C., Brubacher, S. P., Sharman, S. J., Powell, M. B., and Roberts, K. P. (2017b). 'Children's Reasoning About Which Episode of a Repeated Event Is Best Remembered.' Applied Cognitive Psychology **31**: 99–108. doi:10.1002/acp.3306

Danby, M. C., Sharman, S. J., Brubacher, S. P., Powell, M. B., and Roberts, K. P. (2017c). 'Differential Effects of General Versus Cued Invitations on Children's Reports of a Repeated Event Episode.' Psychology, Crime & Law **23**(8): 794–811. doi:10.1080/1068316X.2017.1324028

Danby, M. C., Sharman, S. J., and Claringbold, G. (2022). 'The Effects of Recalling Generic Versus Episodic Information First on Adults' Reports of a Repeated Event.' Applied Cognitive Psychology **36**(2): 460–467. doi:10.1002/acp.3924

Darwinkel, E. C., Powell, M. B., and Sharman, S. J. (2014). 'Does Extensive Free Narrative Prompting Minimise the Effect of Mental Reinstatement on Children's Recall of Events?' Psychiatry, Psychology and Law **21**(3): 351–359. doi:10.1080/13218719.2013.817290

Davies, G. M., Westcott, H. L., and Horan, N. (2000). 'The Impact of Questioning Style on the Content of Investigative Interviews with Suspected Child Sexual Abuse Victims.' Psychology, Crime and Law **6**(2): 81–97. doi:10.1080/10683160008410834

Deck, S. L. and Paterson, H. M. (2020). 'Adults Also Have Difficulty Recalling One Instance of a Repeated Event.' Applied Cognitive Psychology **35**: 286–292. doi:10.1002/acp.3736

Dent, H. R. and Stephenson, G. M. (1979). 'An Experimental Study on the Effectiveness of Different Techniques of Questioning Child Witnesses.' British Journal of Social & Clinical Psychology **18**: 41–51. doi:10.1111/j.2044-8260.1979.tb00302.x

Ebbinghaus, H. (1885). Memory: A Contribution to Experimental Psychology. New York: Teachers College, Columbia University.

Erens, B., Otgaar, H., Patihis, L., and de Ruiter, C. (2020). 'Beliefs About Children's Memory and Child Investigative Interviewing Practices: A Survey in Dutch Child Protection Professionals from 'Safe Home.' Frontiers in Psychology **11**: 1–9. doi:10.3389/fpsyg.2020.546187

Evans, C. and Graves, K. (2018). 'Trauma Among Children and Legal Implications.' Cogent Social Sciences **4**(1). doi:10.1080/23311886.2018.1546791

Farrar, M. J. and Goodman, G. S. (1992). 'Developmental Changes in Event Memory.' Developmental Review **63**: 173–187. doi:10.2307/1130911

Feltis, B. B., Powell, M. B., Snow, P. C., and Hughes-Scholes, C. H. (2010). 'An Examination of the Association Between Interviewer Question Type and Story-Grammar Detail in Child Witness Interviews About Abuse.' Child Abuse & Neglect **34**(6): 407–413. doi:10.1016/j.chiabu.2009.09.019

Fisher, R. P. and Geiselman, R. E. (1992). Memory-Enhancing Techniques for Investigative Interviewing: The Cognitive Interview. Springfield, Illinois: Charles C Thomas Publisher.

Flin, R., Boon, J., Knox, A., and Bull, R. (1992). 'The Effect of a Five-month Delay on Children's and Adults' Eyewitness Memory.' *British Journal of Psychology* **83**(3): 323–336. doi:10.1111/j.2044-8295.1992.tb02444.x

Fivush, R., Hudson, J., and Nelson, K. (1984). 'Children's Long-Term Memory for a Novel Event: An Exploratory Study.' Merrill-Palmer Quarterly **30**(3): 303–316.

Foynes, M. M., Freyd, J. J., and DePrince, A. P. (2009). 'Child Abuse: Betrayal and Disclosure.' Child Abuse & Neglect **33**(4): 209–217. doi:10.1016/j.chiabu.2008.11.001

Friedman, W. J. and Lyon, T. D. (2005). 'Development of Temporal-Reconstructive Abilities.' *Child Development* **76**(6): 1202–1216. Portico. doi:10.1111/j.1467-8624.2005.00844.x-i1

Goodman, G. S. and Melinder, A. (2007). 'Child Witness Research and Investigative Interviews of Young Children: A Review.' Legal and Criminological Psychology **12**(1): 1–19. doi:10.1348/135532506x156620

Goodman, G. S., Quas, J. A., Goldfarb, D., Gonzalves, L., and Gonzalez, A. (2019). 'Trauma and Long-Term Memory for Childhood Events: Impact Matters.' Child Development Perspectives **13**(1): 3–9. doi:10.1111/cdep.12307

Granhag, P. A., Strömwall, L. A., and Hartwig, M. (2005). 'Eyewitness Testimony: Tracing the Beliefs of Swedish Legal Professionals.' Behavioral Sciences & the Law **23**(5): 709–727. doi:10.1002/bsl.670

Hanna, K., Davies, E., Crothers, C., and Henderson, E. (2012). 'Questioning Child Witnesses in New Zealand's Criminal Justice System: Is Cross-examination Fair?' Psychiatry, Psychology and Law **19**: 530–546. doi:10.1080/13218719.2011.615813

Hanway, P., Akehurst, L., Vernham, Z., and Hope, L. (2020). 'The Effects of Cognitive Load During an Investigative Interviewing Task on Mock Interviewers' Recall of Information.' Legal and Criminological Psychology **26**(1): 25–41. Portico. doi:10.1111/lcrp.12182

Henderson, H. M., Lundon, G. M., and Lyon, T. D. (2022). 'Suppositional Wh-Questions About Perceptions, Conversations, and Actions Are More Productive Than Paired Yes-No Questions When Questioning Maltreated Children.' Child Maltreatment **28**(1): 55–65. doi:10.1177/10775595211067208

Hickle, K. (2016). *A Trauma-Informed Approach: Policing Responses to Child Sexual Exploitation*. https://www.uobcsepolicinghub.org.uk/assets/documents/Trauma-Informed-Approach-Briefing-Final.pdf (accessed 8 September 2023).

Hill, J. A. and Moston, S. (2011). 'Police Perceptions of Investigative Interviewing: Training Needs and Operational Practices in Australia.' The British Journal of Forensic Practice **13**(2): 72–83. doi:10.1108/14636641111134314

Holliday, R. E., Reyna, V. F., and Hayes, B. K. (2002). 'Memory Processes Underlying Misinformation Effects in Child Witnesses.' Developmental Review **22**(1): 37–77. doi:10.1006/drev.2001.0534

Horowitz, S. (2009). 'Direct Mixed and Open Questions in Child Interviewing: An Analog Study.' Legal and Criminological Psychology **14**: 135–147. doi:10.1348/135532508X298441

Hudson, J. (1990). 'Constructive Processing in Children's Event Memory.' Developmental Psychology **26**: 180–187. doi:10.1037/0012-1649.26.2.180

Hudson, J. and Nelson, K. (1986). 'Repeated Encounters of a Similar Kind: Effects of Familiarity on Children's Autobiographic Memory.' Cognitive Development **1**: 253–271. doi:10.1016/s0885-2014(86)80004-1

Ibabe, I. and Sporer, S. L. (2004). 'How You Ask Is What You Get: On the Influence of Question Form on Accuracy and Confidence.' Applied Cognitive Psychology **18**: 711–726. doi:10.1002/acp.1025

Jack, F., Leov, J., and Zajac, R. (2013). 'Age-Related Differences in the Free-Recall Accounts of Child, Adolescent, and Adult Witnesses.' Applied Cognitive Psychology **28**(1): 30–38. doi:10.1002/acp.2951

Johnson, M. K., Hashtroudi, S., and Lindsay, D. S. (1993). 'Source Monitoring.' Psychological Bulletin **114**: 3–28. doi:10.1037/0033-2909.114.1.3

Jones, C. H. and Pipe, M.-E. (2002). 'How Quickly Do Children Forget Events? A Systematic Study of Children's Event Reports as a Function of Delay.' Applied Cognitive Psychology **16**(7): 755–768. doi:10.1002/acp.826

Kagee, A. and Breet, E. (2015). 'Psychologists' Endorsement of Unsupported Statements in Psychology: Noch Einmal.' South African Journal of Psychology **45**(3): 397–409. doi:10.1177/0081246315581345

Kebbell, M. and Milne, R. (1998). 'Police Officers' Perceptions of Eyewitness Performance Inforensic Investigations.' The Journal of Social Psychology **137**(3): 323–330.

Knutsson, J. and Allwood, C. M. (2015). 'Swedish Legal Professionals' Opinions on Child and Adult Witness Memory-Reporting Capabilities: Using the Method of Indirect Comparisons.' Applied Cognitive Psychology **29**(3): 392–406. doi:10.1002/acp.3117

Kobasigawa, A. (1974). 'Utilization of Retrieval Cues by Children in Recall.' Child Development **45**(1): 127. doi:10.2307/1127758

Könen, T., Dirk, J., and Schmiedek, F. (2015). 'Cognitive Benefits of Last Night's Sleep: Daily Variations in Children's Sleep Behavior Are Related to Working Memory Fluctuations.' Journal of Child Psychology and Psychiatry, and Allied Disciplines **56**(2): 171–182.

Kontogianni, F., Hope, L., Taylor, P. J., Vrij, A., and Gabbert, F. (2020). '"Tell me more about this…": An Examination of the Efficacy of Follow-up Open Questions Following an Initial Account.' Applied Cognitive Psychology **34**(5): 972–983. doi:10.1002/acp.3675

Krix, A. C., Sauerland, M., Lorei, C., and Rispens, I. (2015). 'Consistency Across Repeated Eyewitness Interviews: Contrasting Police Detectives' Beliefs with Actual Eyewitness Performance.' PLoS One **10**(2): e0118641. doi:10.1371/journal.pone.0118641

Lamb, M. E. (2016). 'Difficulties Translating Research on Investigative Interview Practices to Practitioners: Finding Water, Leading Horses, But Can We Get Them to Drink?' The American Psychologist **71**(8): 710–718. doi:10.1037/amp0000039

Lamb, M. E., Brown, D. A., Hershkowitz, I., Orbach, Y., and Esplin, P. W. (2018). Tell Me What Happened: Questioning Children About Abuse, 2nd edn. Chichester, UK: John Wiley.

Lamb, M. E., Sternberg, K. J., Orbach, Y. *et al.* (2003). 'Age Differences in Young Children's Responses to Open-Ended Invitations in the Course of Investigative Interviews.' Journal of Consulting and Clinical Psychology **71**: 926–934. doi:10.1037/0022-006X.71.5.926

Larsson, A. S. and Lamb, M. E. (2009). 'Making the Most of Information-Gathering Interviews with Children.' Infant and Child Development **18**: 1–16. doi:10.1002/ICD.573

Lee, Y. W. and Strong, D. M. (2003). 'Knowing-Why About Data Processes and Data Quality.' Journal of Management Information Systems **20**(3): 13–39. doi:10.1080/07421222.2003.11045775

Legault, E. and Laurence, J. R. (2007). 'Recovered Memories of Childhood Sexual Abuse: Social Worker, Psychologist, and Psychiatrist Reports of Beliefs, Practices, and Cases.' Australian Journal of Clinical and Experimental Hypnosis **35**(2): 111–133.

Lindsay, D. S., Johnson, M. K., and Kwon, P. J. (1991). 'Developmental Changes in Memory Source Monitoring.' *Journal of Experimental Child Psychology* **52**(3): 297–318. doi:10.1016/0022-0965(91)90065-Z

Loinaz, I., Bigas, N., and Ma de Sousa, A. (2019). 'Comparing Intra and Extra-familial Child Sexual Abuse in a Forensic Context.' Psicothema **31**(3): 271–276. doi:10.7334/psicothema2018.351

London, K., Bruck, M., and Melnyk, L. (2009). 'Post-event Information Affects Children's Autobiographical Memory After One Year.' Law and Human Behavior **33**(4): 344–355. doi:10.1007/s10979-008-9147-7

Luna, K. and Migueles, M. (2009). 'Acceptance and Confidence of Central and Peripheral Misinformation.' The Spanish Journal of Psychology **12**(2): 405–413. doi:10.1017/s1138741600001797

Luther, K., Snook, B., Barron, T., and Lamb, M. E. (2014). 'Child Interviewing Practices in Canada: A Box Score from Field Observations.' Journal of Police and Criminal Psychology **30**(3): 204–212. doi:10.1007/s11896-014-9149-y

Magnusson, M., Ernberg, E., Landström, S., and Akehurst, L. (2020). 'Forensic Interviewers' Experiences of Interviewing Children of Different Ages.' Psychology, Crime & Law **26**(10): 967–989. doi:10.1080/1068316X.2020.1742343

Malloy, L. C., Lyon, T. D., and Quas, J. A. (2007). 'Filial Dependency and Recantation of Child Sexual Abuse Allegations.' Journal of the American Academy of Child & Adolescent Psychiatry **46**(2): 162–170. doi:10.1097/01.chi.0000246067.77953.f7

Maylor, E. A., Chater, N., and Jones, G. V. (2001). 'Searching for Two Things at Once: Evidence of Exclusivity in Semantic and Autobiographical Memory Retrieval.' Memory & Cognition **29**(8): 1185–1195. doi:10.3758/bf03206388

Mayr, U. and Kliegl, R. (2000). 'Task-Set Switching and Long-Term Memory Retrieval.' Journal of Experimental Psychology: Learning, Memory, and Cognition **26**(5): 1124–1140. doi:10.1037/0278-7393.26.5.1124

McElvaney, R. (2015). 'Disclosure of Child Sexual Abuse: Delays, Non-disclosure and Partial Disclosure. What the Research Tells Us and Implications for Practice.' Child Abuse Review **24**: 159–169. doi:10.1002/car.2280

McGuire, K. and London, K. (2020). 'A Retrospective Approach to Examining Child Abuse Disclosure.' Child Abuse & Neglect **99**: 104263. doi:10.1016/j.chiabu.2019.104263

Melega, G. and Renoult, L. (2023). 'Retrieval Mode Switching Affects Autobiographical Memory Accuracy and Elaboration in Ageing. [online]' [Preprint]. [Viewed 27 December 2023] Available from doi:10.31234/osf.io/w8sc7

Melinder, A., Goodman, G. S., Eilertsen, D. E., and Magnussen, S. (2004). 'Beliefs About Child Witnesses: A Survey of Professionals.' Psychology, Crime & Law **10**(4): 347–365. doi:10.1080/10683160310001618717

Meyer, J. R. and Reppucci, N. D. (2007). 'Police Practices and Perceptions Regarding Juvenile Interrogation and Interrogative Suggestibility.' Behavioral Sciences & the Law **25**(6): 757–780. doi:10.1002/bsl.774

Ministry of Justice. (2022). *Achieving Best Evidence in Criminal Proceedings. Guidance on Interviewing Victims and Witnesses, and Guidance on Using Special Measures*. https://www.cps.gov.uk/sites/default/files/documents/legal_guidance/best_evidence_in_criminal_proceedings.pdf (accessed 27 December 2023).

Mylopoulos, M., Steenhof, N., Kaushal, A., and Woods, N. N. (2018). 'Twelve Tips for Designing Curricula That Support the Development of Adaptive Expertise.' Medical Teacher **40**(8): 850–854. doi:10.1080/0142159X.2018.1484082

Orbach, Y. and Lamb, M. E. (2000). 'Enhancing Children's Narratives in Investigative Interviews.' Child Abuse & Neglect **24**: 1631–1648. doi:10.1016/s0145-2134(00)00207-6

Oxburgh, G. E., Myklebust, T., and Grant, T. (2010). 'The Question of Question Types in Police Interviews: A Review of the Literature from a Psychological and Linguistic Perspective.' *International Journal of Speech, Language and the Law* **17**(1), 45–66. doi:10.1558/ijsll.v17i1.45

Paz-Alonso, P. M. and Goodman, G. S. (2016). 'Developmental Differences Across Middle Childhood in Memory and Suggestibility for Negative and Positive Events.' Behavioral Sciences & the Law **34**(1): 30–54. doi:10.1002/bsl.2239

Pearse, S. L., Powell, M. B., and Thomson, D. (2003). 'The Effect of Contextual Cues on Children's Ability to Remember an Occurrence of a Repeated Event.' Legal and Criminological Psychology **8**(1): 39–50. doi:10.1348/135532503762871228

Pipe, M. -E., Lamb, M. E., Orbach, Y., and Esplin, P. W. (2004). 'Recent Research on Children's Testimony About Experienced and Witnessed Events.' Developmental Review **24**(4): 440–468. doi:10.1016/j.dr.2004.08.006

Pichler, A. S., Powell, M., Sharman, S. J., Zydervelt, S., Westera, N., and Goodman-Delahunty, J. (2020). 'Inconsistencies in Complainant's Accounts of Child Sexual Abuse Arising in their Cross-examination.' *Psychology, Crime & Law*, **27**(4): 341–356. doi:10.1080/1068316x.2020.1805743

Pollack, D. (2018). 'Distant Memories, Fresh Wounds: Litigation Strategies for Sexual Abuse Lawsuits.' Policy & Practice **76**(3): 22–29.

Poole, D. A. and White, L. T. (1991). 'Effects of Question Repetition on the Eyewitness Testimony of Children and Adults.' Developmental Psychology **27**: 975–986. doi:10.1037/0012-1649.27.6.975

Powell, M. B., Guadagno, B., and Benson, M. (2016). 'Improving Child Investigative Interviewer Performance Through Computer-Based Learning Activities.' Policing and Society **26**(4): 365–374. doi:10.1080/10439463.2014.942850

Powell, M. B., Roberts, K. P., Ceci, S. J., and Hembrooke, H. (1999). 'The Effects of Repeated Experience on Children's Suggestibility.' Developmental Psychology **35**: 1462–1477. doi:10.1037/0012-1649.35.6.1462

Powell, M. B. and Snow, P. C. (2007). 'Guide to Questioning Children During the Free-Narrative Phase of an Investigative Interview.' Australian Psychologist **42**(1): 57–65. doi:10.1080/00050060600976032

Price, H. L., Roberts, K. P., and Collins, A. (2013). 'The Quality of Children's Allegations of Abuse in Investigative Interviews Containing Practice Narratives.' Journal of Applied Research in Memory and Cognition **2**: 1–6. doi:10.1016/j.jarmac.2012.03.001

Quon, E. and Atance, C. M. (2010). 'A Comparison of Preschoolers' Memory, Knowledge, and Anticipation of Events.' Journal of Cognition and Development **11**(1): 37–60. doi:10.1080/15248370903453576

Renoult, L., Irish, M., Moscovitch, M., and Rugg, M. D. (2019). 'From Knowing to Remembering: The Semantic–Episodic Distinction.' Trends in Cognitive Sciences **23**(12): 1041–1057.

Rivard, J. R. and Compo, N. S. (2017). 'Self-reported Current Practices in Child Investigative Interviewing: Training, Tools, and Pre-interview Preparation.' Behavioral Sciences & the Law **35**(3): 253–268. doi:10.1002/bsl.2290

Roberts, K. P. (2002). 'Children's Ability to Distinguish Between Memories from Multiple Sources: Implications for the Quality and Accuracy of Eyewitness Statements.' Developmental Review **22**: 403–435. doi:10.1016/s0273-2297(02)00005-9

Roberts, K. P., Brubacher, S. P., Powell, M. B., and Price, H. L. (2011). 'Practice Narratives.' In Lamb, M. E., La Rooy, D., Malloy, L. C., and Katz, C. (eds), Children's Testimony: A Handbook of Psychological Research and Forensic Practice. Chichester, UK: Wiley, pp. 129–145.

Rohrabaugh, M., London, K., and Hall, A. K. (2016). 'Planning the Investigative Interview.' In O'Donohue, W. T. and Fanetti, M. (eds), Forensic Interviews Regarding Child Sexual Abuse: A Guide to Evidence-Based Practice. Switzerland: Springer International Publishing, pp. 197–218. doi:10.1007/978-3-319-21097-1_11

Ryan, R. (2010). 'Age Differences in Explicit Memory of Crimes and Source Monitoring Ability: Adolescence and Young Adults.' *North American Journal of Psychology* **12**(2); 401–414.

S. v The Queen (1989). 168 CLR 266.

Schacter, D. L. and Addis, D. R. (2007). 'Constructive Memory: The Ghosts of Past and Future.' Nature **445**(7123): 27. doi:10.1038/445027a

Schacter, D. L., Guerin, S. A., and St. Jacques, P. L. (2011). 'Memory Distortion: An Adaptive Perspective.' Trends in Cognitive Sciences **15**(10): 467–474. doi:10.1016/j.tics.2011.08.004

Schank, R. C. and Abelson, R. P. (1977). Scripts, Plans, Goals, and Understanding: An Inquiry into Human Knowledge Structures. Hillsdale, NJ: Lawrence Erlbaum Associates.

Sharman, S. J., Boyd, C., and Powell, M. B. (2014). 'Disrupting the Encoding of Misinformation Delivered in Closed Specific and Open Presumptive Questions.' Psychiatry, Psychology and Law **22**(4): 535–541. doi:10.1080/13218719.2014.960035

Sharman, S. J. and Powell, M. B. (2012). 'A Comparison of Adult Witnesses' Suggestibility Across Various Types of Leading Questions.' Applied Cognitive Psychology **26**: 48–53. doi:10.1002/acp.1793

Sharman, S. J., Powell, M. B., and Roberts, K. P. (2011). 'Children's Ability to Estimate the Frequency of Single and Repeated Events.' International Journal of Police Science & Management **13**: 234–242. doi:10.1350/ijps.2011.13.3.243

Smith, K. and Milne, R. (2011). 'Planning the Interview.' In Lamb, M. E., La Rooy, D., Malloy, L. C., and Katz, C. (eds), Children's Testimony: A Handbook of Psychological Research and Forensic Practice. Chichester, UK: Wiley, pp. 87–107. doi:10.1002/9781119998495.ch5

Smith, R. M., Powell, M. B., and Lum, J. (2009). 'The Relationship Between Job Status, Interviewing Experience, Gender, and Police Officers' Adherence to Open-Ended Questions.' Legal and Criminological Psychology **14**(1): 51–63. doi:10.1348/135532507x262360

Spinhoven, P., Bean, T., and Eurelings-Bontekoe, L. (2006). 'Inconsistencies in the Self-report of Traumatic Experiences by Unaccompanied Refugee Minors.' *Journal of Traumatic Stress* **19**(5): 663–673. Portico. doi:10.1002/jts.20152

Sternberg, K. J., Lamb, M., Hershkowitz, I. *et al.* (1997). 'Effects of Introductory Style on Children's Abilities to Describe Experiences of Sexual Abuse.' Child Abuse & Neglect **21**(11): 1133–1146. doi:10.1016/S0145-2134(97)00071-9

Stolzenberg, S. N. and Lyon, T. D. (2017). '"Where Were Your Clothes?" Eliciting Descriptions of Clothing Placement from Children Alleging Sexual Abuse in Criminal Trials and Forensic Interviews.' Legal and Criminological Psychology **22**(2): 197–212. doi:10.1111/lcrp.12094

Templeton, L. and Wilcox, S. A. (2000). 'A Tale of Two Representations: The Misinformation Effect and Children's Developing Theory of Mind.' Child Development **71**(2): 402–416. doi:10.1111/1467-8624.00153

Toth, S. L. and Valentino, K. (2008). 'Translating Research on Children's Memory and Trauma into Practice: Clinical and Forensic Implications.' In Howe, M. L., Goodman, G. S., and Cicchetti, D. (eds), Stress, Trauma, and Children's Memory Development: Neurobiological, Clinical, and Legal Perspectives. New York: Oxford University Press, pp. 363–424.

Trocome, N., Fallon, B., MacLaurin, B. *et al.* (2010). *Canadian Incidence of Reported Child Abuse and Neglect – 2008: Major Findings* (pp. 7–11). Public Health Agency of Canada.

Tulving, E. (1984). 'Precis of Elements of Episodic Memory.' The Behavioral and Brain Sciences **7**: 223–238.

Tulving, E. (1985). 'Memory and Consciousness.' *Canadian Psychology/Psychologie Canadienne* **26**: 1–12.

Volpini, L., Melis, M., Petralia, S., and Rosenberg, M. D. (2016). 'Measuring Children's Suggestibility in Forensic Interviews.' Journal of Forensic Sciences **61**(1): 104–108. doi:10.1111/1556-4029.12987

Wade, A. and Westcott, H. (2018). 'No Easy Answers: Children's Perspectives on Investigative Interviews.' In Westcott, H. and Jones, J. (eds), Perspectives on the Memorandum. United Kingdom: Routledge, pp. 51–65.

Walsh, W. A., Jones, L. M., Cross, T. P., and Lippert, T. (2010). 'Prosecuting Child Sexual Abuse: The Importance of Evidence Type.' Crime & Delinquency **56**: 436–454. doi:10.1177/0011128708320484

Waterman, A. H., Blades, M., and Spencer, C. (2000). 'Do Children Try to Answer Nonsensical Questions?' British Journal of Developmental Psychology **18**: 211–225.

Webb, T. (2015). 'Children Exposed to Violence: A Developmental Trauma Informed Response for the Criminal Justice System.' Journal of Child & Adolescent Trauma **9**(3): 183–189. doi:10.1007/s40653-015-0069-5

Westcott, H. and Davies, G. (1996). 'Sexually Abused Children's and Young People's Perspectives on Investigative Interviews.' British Journal of Social Work **26**(4): 451–474. doi:10.1093/oxfordjournals.bjsw.a011119

Westcott, H. L. and Kynan, S. (2006). 'Interviewer Practice in Investigative Interviews for Suspected Child Sexual Abuse.' Psychology, Crime & Law **12**(4): 367–382. doi:10.1080/10683160500036962

Whiting, B. F. and Price, H. L. (2017). 'Practice Narratives Enhance Children's Memory Reports.' Psychology, Crime & Law **23**(8): 730–747. doi:10.1080/1068316x.2017.1324031

Wixted, J. T. and Carpenter, S. K. (2007). 'The Wickelgren Power Law and the Ebbinghaus Savings Function.' Psychological Science **18**(2): 133–134. doi:10.1111/j.1467-9280.2007.01862.x

Woiwod, D. M. and Connolly, D. A. (2017). 'Continuous Child Sexual Abuse: Balancing Defendants' Rights and Victims' Capabilities to Particularize Individual Acts of Repeated Abuse.' Criminal Justice Review **42**(2): 206–225. doi:10.1177/0734016817704700

Woiwod, D. M., Fitzgerald, R. J., Sheahan, C. L., Price, H. L., and Connolly, D. A. (2019). 'A Meta-analysis of Differences in Children's Reports of Single and Repeated Events.' Law and Human Behavior **43**(1): 99–116. doi:10.1037/lhb0000312

Wolfman, M., Brown, D., and Jose, P. (2016). 'Talking Past Each Other: Interviewer and Child Verbal Exchanges in Forensic Interviews.' Law and Human Behavior **40**(2): 107–117. doi:10.1037/lhb0000171

Wright, R., Powell, M. B., and Ridge, D. T. (2007). 'What Criteria Do Police Officers' Use to Measure the Success of an Interview with a Child Witness?' Psychology, Crime and Law **13**(4): 395–404. doi:10.1080/10683160601060754

Wylie, B., Stolzenberg, S. N., McWilliams, K., Evans, A. D., and Lyon, T. D. (2020). 'Young Children's Ability to Describe Intermediate Clothing Placement.' Child Maltreatment **26**(1): 87–94. doi:10.1177/1077559520930825