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**Trial of Three Investigative Interview Techniques with Minimally Verbal Adults Reporting
about Occurrences of a Staged Repeated Event**

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Abstract

The current study explored the effectiveness of three interview protocols on the number and specificity of details provided by minimally verbal adults about a staged repeated event. Eighty adults (with expressive sentence length of around 5 words, matched on measures of expressive language and intellectual functioning) participated in three live events and were pseudo-randomly assigned to receive one of three interviews. The narrative-first protocol exhausted recall with open-ended questions before focused questions were asked, the intermixed protocol paired open-ended questions immediately followed by related focused questions, and the visual cues protocol mimicked the narrative-first protocol but with the use of cue cards. Overall, participants reported more correct information about the last occurrence in the intermixed and visual than narrative-first interview. The narrative-first interview elicited fewer internal intrusions (experienced details attributed to the wrong occurrence) compared to the visual, but not the intermixed interview. Expressive language and intellectual function were positively associated with the reporting of event-related details. Providing information about repeated events was challenging for minimally verbal adults; reporting of generic event details was more frequent than occurrence-specific details, one-third of participants answered a question about event frequency incorrectly (by saying they participated once), and the remaining participants provided few details about the other occurrences when directed to do so. Findings were consistent with the broader repeated event literature on children and adult witnesses recalling repeated events. This research provides guidance for investigative interviewers on how best to obtain accurate event-related information from minimally verbal adults about their experiences.

Keywords: Investigative interviewing, minimally verbal adults, repeated events, expressive language difficulty

Trial of Three Investigative Interview Techniques with Minimally Verbal Adults Reporting about Occurrences of a Staged Repeated Event

Adults with disabilities, including those with communication and/or cognitive impairment, are overrepresented as victims of abuse compared to the general population (Crime and Justice Statistics, 2013). Further, they may be at increased risk of repeated victimization, as they tend to be dependent on caregivers who are commonly the perpetrators of abuse (Euser, Alink, Tharner, van Ijzendoorn, & Bakermans-Kranenburg, 2016; Henry, Ridley, Perry, & Crane, 2011). Routine tasks such as personal care activities (e.g., bathing, dressing, and feeding) may conceal ongoing abusive caregiving behaviors (Westcott & Jones, 1999). When questioned about their victimization, adults with disability encounter a number of problems in providing evidence to an investigative interviewer unfamiliar with their capabilities (Cederborg, Hultman, & La Rooy, 2012). For example, interviewers will often resort to asking specific, repeated, and leading questions, resulting in inaccurate responses (Cederborg & Lamb, 2008). Further, investigative interviewers have concerns about the limited detail provided by individuals with communication or cognitive impairment, and the reliability of their accounts. These concerns have added to the reduced likelihood of offence allegations proceeding onwards from the interview to court or leading to a charge (Arstein-Kerslake, Maker, Ireland, & Mawad, 2018).

One particular subgroup of adults with disability that has not been the focus of research on investigative interviewing is minimally verbal adults (those who use sentences of around five words, with or without cognitive impairment; Hus Bal, Katz, Bishop & Krasileva, 2016). Adults who are minimally verbal are a heterogeneous group and can have a range of complex conditions such as neuro-developmental disorders (e.g. autism, cerebral palsy), traumatic brain injury, and anatomical/voice difficulties (Speech Pathology Australia, 2013). These conditions may lead to challenges in expressing information through speech, writing, or gesture. Further, such

individuals often have difficulty combining words to create comprehensible sentences and their vocabulary is smaller and more basic than their verbally fluent peers, making it more difficult to provide a narrative account (Speech Pathology Australia, 2013). Although a narrative-based protocol is generally advised for all witnesses, it is yet to be determined whether this approach is suitable for minimally verbal adults. Additionally, as adults with disability could be at greater risk of repeated abuse, determining how best to elicit details of a specific occurrence is relevant. The remainder of the introduction will focus on two themes related to minimally verbal adults as witnesses: investigative interview guidelines and considerations regarding reports of repeatedly experienced events.

Investigative Interview Guidelines for Minimally Verbal Adults

Research concerning the investigative interviewing of vulnerable witnesses has largely concentrated on children, or adults with intellectual disability (e.g., Agnew & Powell, 2004; Bowles & Sharman, 2014; Cederborg et al., 2012). This focus has led to broad guidelines that suggest how individuals with communication impairment might be interviewed effectively by investigative interviewers. On the one hand, the research has highlighted the suggestibility of vulnerable witnesses, and therefore, the importance of maintaining open-ended questions to improve the accuracy of responses (Gudjonsson & Henry, 2003). On the other hand, limited detail may be provided in response to open-ended questions (Agnew & Powell, 2004). For example, Hershkowitz (2018) found that adults and adolescents with mild and moderate intellectual disability provided fewer details than their mental age matches across all prompt types including open-ended, directive, and option-posing.

The majority of research indicating that people with communication disabilities will provide less information than those without such impairment has involved child samples. Dion and Cyr (2008) demonstrated that low-verbal children responded with more detail to open-ended

than closed questions, but provided fewer details compared to children with average verbal capacity or mild disability. Others (e.g., Brown, Lewis, Lamb, & Stephens, 2012; Gentle, Milne, Powell, & Sharman, 2013) have found similar results, where children with moderate disabilities recalled less information in response to open-ended questions than typically developing children, though their recall was as accurate. These findings are in contrast to children with mild intellectual disabilities who can be as able as their mental age matches in providing accurate event-related detail in response to open-ended questions (Brown et al., 2012; Murfett, Powell, & Snow, 2008). Taken together, prior results suggest that minimally verbal adults should respond accurately to open-ended questions but may provide less detail than the general population.

Broad consensus exists surrounding best practice interviewing strategies for use with populations of typically developing children and adults (Newlin et al., 2015; Vrij, Hope, & Fisher, 2014), as well as those with mild to moderate impairments (Brown, Lewis, & Lamb, 2015; Wyman, Lavoie, & Talwar, 2018). A variety of forensic interview protocols, (e.g., Lamb, Brown, Hershkowitz, Orbach, & Esplin, 2018; *Achieving Best Evidence*, 2011) and practical guides for interviewing vulnerable witnesses have been developed (see also: Attorney General's Department, 2014; *The Advocates Gateway*, 2013). The recommendations from these include: building rapport, using simple ground rules (e.g., instructing interviewees to tell the interviewer if they don't know an answer), including an open-ended practice narrative (where interviewees are encouraged to recall an innocuous event), using questions that encourage narrative responding, and avoidance of leading questions (Lamb, et al., 2018; La Rooy et al., 2015).

Open-ended questions are recommended for eliciting narrative detail and encouraging an elaborate response that does not dictate what specific details are required (Agnew & Powell, 2004; Lamb et al., 2018; Powell, Fisher, & Wright, 2005). Examples of open-ended questions include; "Tell me everything that happened and start from the beginning," "What happened after?" and "Tell me

more about the part where [pre-disclosed detail].” While open-ended prompts are generally thought to be superior to other question types, some research involving preschoolers suggests that cued recall prompts (“Wh” format, e.g., “What color was his hair?”) may be necessary to structure the narratives of this population. Field research with 299 preschoolers showed that 3- to 4-year-olds provided more on-track responses to cued recall than to open-ended prompts, but both types resulted in the same average number of forensic details elicited per interviewer prompt (HersHKowitz, Lamb, Orbach, Katz, & Horowitz, 2012). These results mean that the broadness of open-ended prompts might allow certain vulnerable populations to stray from the topic of interest, as compared to cued recall prompts, but they are still useful in obtaining elaborate responses. Because open-ended prompts tend to elicit more accurate information than other types, experts have suggested pairing open-ended prompts with more focused ones when the latter are needed (Lamb, Orbach, HersHKowitz, Esplin, & Horowitz, 2007). It is possible that adults with limited verbal ability might benefit from an interview protocol that alternates open-ended with cued recall prompts, thus providing opportunity for elaboration within a structured, scaffolded approach.

Visual aids are another way that the narrative capacity of some individuals who are minimally verbal might be improved without needing to resort to specific questions early in the interview (Wyman et al, 2018). Visual scaffolds in the form of mind-maps depicting the narrative elements (e.g. who, where, when, etc.) have provided successful narrative intervention for adults with aphasia and other cognitive communication difficulties (Whitworth, 2010; Whitworth et al., 2015). Such aids have also been used successfully in research with children (aged 3 to 12 years). One empirically supported set of visual aids is that used during the Developmental Narrative Elaboration interview (Dorado & Saywitz, 2007; Saywitz & Camparo, 2014). They comprise a set of visual cards used to represent four categories (actions, participants, conversations, and settings; a consequences category was eliminated from later studies, as it did not enhance children’s narratives). For example, the *participants* card

featured a stick figure and the *settings* card depicted a tree and a house. Following an uninterrupted description of an event, children were presented with each visual card and asked, “Does this card remind you to tell me something else?” The cards were designed to help children understand the kind of information needed by interviewers, and to help children overcome developmental limitations in pragmatic language, as children often have poor organization and retrieval of event details (Saywitz & Snyder, 1996; Saywitz, Snyder, & Lamphear, 1996). Although not all minimally verbal adults will have limitations in pragmatic language, Saywitz and Snyder (1996) also used the cards to remind children of the question topics. As some minimally verbal adults may forget the questions asked of them due to poorer working memory (Seung & Chapman, 2004), visual aids representing the question types could serve as reminders.

Research on the narrative elaboration interview has demonstrated increases in information reported compared to a control group without corresponding decreases in accuracy (Dorado & Saywitz, 2007; Saywitz & Snyder, 1996), but increases in false reports among a small number of children have also been observed (Nathanson, Crank, Saywitz, & Ruegg, 2007). Further, Brown and Pipe (2003) demonstrated that simply using verbal prompts corresponding to the cue card category (without the use of physical cards) was equally beneficial in eliciting event related detail when compared to children who received training and cue cards. They also found that the narrative elaboration technique was only effective when interviewees were trained in its use.

In summary, available research suggests that adults who are minimally verbal should be interviewed with open-ended questions, but that they may need some additional support. Approaches to combining open-ended questions with scaffolded support could include pairing open-ended with cued recall questions in an intermixed fashion, or using visual aids to remind interviewees of the information being sought. Because adults with disability may be overrepresented in interviews about alleged repeated abuse, in the next section we briefly describe memory for recurring events.

Considerations Regarding Reports of Repeated Victimization

When reporting repeated abuse, witnesses may be required to describe details associated with specific occurrences and avoid confusing details among them (Powell, Roberts, & Guadagno, 2007). In particular, witnesses are required to give timeframes, locations, descriptions of who was there or other unique details specific to an occurrence, as well as the frequency of the offending (Powell et al., 2007). Distinguishing amongst, and providing narrative accounts of, individual occurrences is a difficult task for children (Powell, Roberts, Ceci, & Hembrooke, 1999; Roberts & Powell, 2001) and adults in the general population (Theunissen, Meyer, Memon, & Weinsheimer, 2017; Weinsheimer, Coburn, Chong, Mclean, & Connolly, 2017). It is reasonable to assume that those with communication impairments would struggle to the same or greater extent.

Following repeated experience, people develop scripts that characterize the typical features of the event. Scripts are powerful mental representations that help to organize memories and make experiences predictable (Abelson, 1981). It is for this reason that people tend to recall “what usually happens” better than the specific details of any one occurrence (see for review Brubacher & Earhart, 2019). The paradox of repeated event memory is that the very repetition that leads to strong and enduring scripts also hampers the ability to retrieve the correct details associated with individual episodes. Yet, the errors that children make when recalling individual episodes are far more likely to be internal intrusions (connecting a true detail that happened at some time to the wrong occurrence) than external intrusions; reports of details that never happened (Brubacher, Peterson, La Rooy, Dickinson, & Poole, 2019). There is evidence that the same is true for adults. MacLean, Coburn, Chong, and Connolly (2018) tested adults’ abilities to accurately report the specific details of five menu tasting event sessions. The average number of internal intrusions was approximately six times greater than the average number of external

intrusions (unreported, but derivable from descriptive statistics).

When interviewers question about alleged events that may be repeated, they may desire to know how many occurrences have taken place so that they can plan their interviews accordingly, and so they can direct the interviewee away from generic recall and elicit information about a specific occurrence of abuse (Lamb et al., 2018). Best practice interview guidelines with children suggest that to determine the frequency of an event, interviewees should be asked, “Has [event] happened one time or more than one time?”. This question is used to overcome mistakes in estimating frequency that arise when specific questions are asked (Orbach & Lamb, 2007).

Current Study

The primary aim of the current study was to determine the interview method that would elicit the most accurate and complete information from minimally verbal adults. Secondary goals involved characterizing the reports of this population with regard to repeated events; in particular, the specificity of details they report and their ability to respond to recommended questions about event frequency. To meet these aims, 80 adults with minimal verbal ability took part in three occurrences of a staged repeated event and then were interviewed using one of three protocols: a narrative-first interview (participants’ narratives were exhausted through open-ended questions before directive questions were asked), an intermixed interview (participants were interviewed using paired non-leading open-ended and cued recall questions in an intermixed fashion), or a visual interview (the same as the narrative-first interview but paired with visual cue cards).

Hypotheses. We expected that interviewees with limited verbal capacity would be able to provide overall more correct information when given extra support during their interviews (via scaffolding with cued recall questions or visual cues) compared to the narrative-first interview as demonstrated by prior literature which has suggested that these techniques may expand narrative detail (e.g., Hershkowitz et al., 2012; Dorado & Saywitz, 2007). Yet, we hypothesized benefits of

the narrative-first condition too. Participants in that condition were expected to produce fewer errors (both internal and external intrusions) compared to the other two conditions as the research to date has highlighted the importance of maintaining open-ended questions to improve the accuracy of responses (Brown et al., 2012), and visual cues have, in some circumstances, been associated with greater errors (Nathanson et al., 2007).

We predicted that participants in the intermixed condition would produce the highest number of “don’t know” responses, with participants in the narrative-first and visual cues condition not differing from each other. While there is some evidence that open-ended questions may yield “don’t know” responses at higher than expected rates (Melinder & Gilstrap, 2009), direct comparisons between open-ended and cued recall questions have not yielded significant differences in “don’t know” responding (Earhart, La Rooy, Brubacher, & Lamb, 2014). Instead, our reasoning was guided by the repeated-event literature, where “don’t know” responses during free recall are infrequent (e.g., less than twice per interview on average in Danby, Brubacher, Sharman, & Powell, 2015), but relatively commonplace in response to cued recall prompts (roughly 17% in Brubacher, Glisic, Roberts, & Powell, 2011; approximately 39% in MacLean et al., 2018). Although the open-ended and visual cues interviews did contain cued recall questions, they were retained until after the narrative was complete. As such, we expected that participants in these conditions would have had a greater opportunity to refresh their memories for the events than participants in the intermixed condition before specific questions were asked.

With respect to participants’ abilities to answer questions about event frequency, we predicted that the majority would be able to identify that the event occurred “more than one time” in line with the broader literature (Lamb et al., 2018; Orbach & Lamb, 2007). It was also expected that participants would report more details about what usually happened during the series of events rather than details specific to one occurrence, as is typical in both children’s and

adults' reports about repeated events (Abelson, 1981; Roberts & Powell, 2001; Theunissen et al., 2017).

Method

Participants

Participants comprised 80 minimally verbal adults aged 18 to 74 years ($M = 46.93$, $SD = 14.90$; 38 males, 42 females). They had a range of diagnoses including: traumatic brain injury, Down syndrome, cerebral palsy, stroke, intellectual disability, and autism. Participants were included in the study if their guardians 1) nominated them to have expressive language of less than 5 word-sentences on average and 2) expected that they would engage in and recall information about activities. Language researchers frequently use sentence length as a measure of expressive language, for the inclusion of participants and for comparison purposes (Rescorla, Dahlsgaard, & Roberts, 2000; Scarborough, Rescorla, Tager-Flusberg, Fowler, & Sudhalter, 1991). While comprehension was not specifically assessed, all participants were able to respond to a variety of open-ended questions designed to enhance their narrative. Participants were included in the study regardless of whether or not they had a cognitive impairment. They were recruited via the leadership of disability care homes, brain injury services, speech pathology groups, and disability-supported workplaces in one Australian state. All individuals with personal and guardian (where appropriate) consent were invited to participate. Participation was voluntary and participants were free to withdraw their consent at any time (none did). The university's human research ethics board approved the research.

Measures used to match participants. Two people with the same diagnosis (e.g., autism spectrum) could have very different abilities, with one person performing in the normal range for expressive language and the other unable to produce narrative detail at all (Rose, Trembath, Keen, & Paynter, 2016). As such, participants were pseudo-randomly assigned to interview

condition with the stipulation that they be matched for expressive language ability and intellectual functioning (see Table 1, top two rows).

Expressive language ability. Oral discourse samples were collected from each participant using a story telling activity. Their expressive language ability was assessed using a measure of Mean Length of Utterance (MLU). MLU is a valid way of describing expressive ability, measuring the average number of words an individual uses per utterance (Kempner & Sumner, 2001). Participants were given three four-part narrative sequence cards (Black Sheep Press, 2012) and were required to tell a story with each set of cards. Narrative samples were entered into Systematic Analysis of Language Transcripts (SALT) software. Narrative samples averaged 53.01 utterances in length. Participants scored a MLU between 1.00 - 6.28 ($M = 3.20$, $SD = 1.63$), indicating that they were functioning at a verbal age of between 16 - 41 months (Miller, Gillon, & Westerveld, 2018).

Intellectual functioning. General intellectual functioning was assessed using Raven's colored progressive matrices (Raven, Raven, & Court, 1998). Raven's was selected because it does not require oral language skills. The test contains three sets of 12 items. On each item, participants select a missing piece from a visual-spatial pattern from six possible options. Each set amounts to increased difficulty. Participants scored between 3 - 35 ($M = 15.46$, $SD = 8.78$). Scores between 0 and 17 indicate participants are functioning below the 25th percentile (below average: 70% of the current sample), scores between 18 and 25 indicate participants are functioning at the 50th percentile (average intellect: 13% of the current sample), scores between 26 and 30 indicate participants are functioning at the 75th percentile (above average: 4% of the current sample) and scores above 31 indicate participants are functioning in the top 25th percentile (intellectually superior: 13% of the current sample). Four individuals were unable to

undertake the test due to physical limitations; they were matched across interview conditions based on their MLU scores alone.

Procedure

The events. A speech pathologist with experience working with minimally verbal adults conducted a 30-minute scripted event in groups of 1 - 6 individuals, once a week for three weeks at regular intervals. A speech pathologist was selected to ensure participants understood the language used during the events. Fourteen adults participated alone and 20 in pairs. There were also two groups of three each, one group of four, six groups of five, and one group of six. No person other than the speech pathologist, the participants, and their carers (if requested by the participant) was present in the room during the event. The event was based on the Deakin Activities, a paradigm used in numerous repeated event studies with children (e.g., Powell et al., 1999), but modified to be age-appropriate.

Each session comprised 15 target items administered in a fixed temporal order and centered around three main activities: a show and tell, a relaxation exercise, and a snack. In each occurrence, the specific presentation of the memory items (i.e., the instantiations of the item) differed according to a schedule, so that each individual occurrence was different (see Appendix A). Each day, the event began with the leader putting on her nametag and shirt, and hanging the University logo to help participants remember the name of the activities. Next, she said she had an interesting object she wanted to share with the group. She showed them the object and a photograph of the person who gave it to her. Objects were always wrapped in something unique. She unwrapped the object and then showed participants its interesting features and spoke about the person who donated the item. Subsequently, she led the participants through a relaxation exercise. She played music, instructed participants in deep breathing, and encouraged them to

focus on relaxing a specific body part. After the relaxation, participants were given something to refresh with, and a snack. Finally, the leader packed up to leave.

Testing

A Psychology PhD student administered language and intelligence tests individually to each participant, in a separate session from the events. All testing took place in a quiet room in a location of convenience to the participants, and lasted 30-40 minutes.

The Interviews

Individual interviews were conducted with each participant one week after the third occurrence of the staged event. Participants were interviewed by an interview trainer (with extensive experience in asking open-questions to a range of interviewees) in one of three conditions; narrative-first interview, intermixed interview, and interview with visual cues. Interviews ranged from 6.49 to 35.36 minutes ($M = 14.12$, $SD = 6.22$). Interviews began with a practice narrative, in which the interviewer asked the participants to nominate a fun activity they had participated in recently. The practice narrative consisted solely of open-ended prompts such as, “Tell me what happened the last time you did [event]”, “What happened then” and “Tell me more about the part where you did [previously disclosed detail]” and minimal encouragers (e.g., “Uh-huh,” “Mmm-hmm”), which have a similar function to open-ended prompts in that they encourage elaboration without specifying what information is required. For participants in the visual cues condition, visual aids were introduced during the practice phase alongside the open-ended questions and minimal encouragers. Otherwise, the practice phase was the same in each interview condition and consisted of 14.63 prompts on average [range 4-35].

Following the practice phase, all participants were asked the question “I heard [event demonstrator] came to visit you, did [event demonstrator] come visit you?” All participants said yes and were then asked the question “Did [event demonstrator] visit you one time or more than

one time”. Following their response, all participants were then directed to the last (target) occurrence, by asking, “tell me what happened the last time [demonstrator] came to visit you”. The last occurrence frequently serves as the target in the repeated event literature (e.g., Connolly, Price, Lavoie, & Gordon, 2008; Powell et al., 1999), and it is recommended best practice to query the last occurrence because memory may be superior, at least compared to intermediate occurrences (Brubacher, Powell, & Roberts, 2014).

Once recall for the last time was complete, participants were directed to recall the first and then the second time, but only if they had responded “more than one time” to the frequency question. They were interviewed in the same manner as was used for the recall of the last time. Each interview only consisted of non-leading questions, and no participants were asked about target items that had not been reported. As such, responses to leading or suggestive questions could not be assessed during this study. Interview conditions primarily differed according to structure.

Narrative-first interview. Following the initial free recall prompt, participants in the narrative-first condition were interviewed using a non-leading, open-ended interview. They were first asked a series of open-ended breadth (e.g., “what happened then” and “what else happened”) and depth prompts (e.g., “tell me more about the part where [previously disclosed detail]” and “what happened when...”), and minimal encouragers. Once the free recall prompts appeared to have exhausted participant’s memory, they were asked a series of cued recall questions (e.g., “what color was the top?”, “what did [demonstrator] look like?” and “who else was there?”) based on details they had previously reported. Although specific questions increase the risk of error, they are nonetheless included in most investigative interviews after the narrative account has been exhausted (Cederborg, Alm, Lima da Silva Nises & Lamb, 2013; Cyr & Lamb, 2009). Further, interviewers may find it difficult to alternate between open-ended and cued recall

questions in an effective manner, without compromising accuracy or slipping into asking solely specific questions (not paired with open-ended ones; Guadagno, Hughes-Scholes, & Powell, 2013). This interview condition was modelled on the Standard Interview Method (SIM) protocol utilized in various jurisdictions by investigative interviewers (Benson & Powell, 2015).

Intermixed interview. After the initial free recall prompt, participants in the intermixed interview condition were interviewed using non-leading open-ended prompts and minimal encouragers paired with follow-up cued recall questions, to exhaust each chunk of information once it was recalled (e.g., “Tell me more about her putting on her uniform,” then “Uh-huh”, followed by “what color was her uniform?” and then “what happened after that?” before moving to the next cued recall question, etc.). This intermixed approach was used throughout the interview.

Visual cues interview. Participants in the visual cues condition were interviewed in the same manner as those in the narrative-first condition, but with the use of visual aids for the breadth and depth questions (Mayer-Johnson Inc., 2017; see Appendix B). Instead of cue cards representing the content of questions such as those used in the Narrative Elaboration Technique (Saywitz & Snyder, 1996), the cue cards in the present study were intended to depict the question *type*. A card with a forward arrow was used for breadth questions (e.g., “What else happened?”). When a sequence of breadth questions were asked (e.g., “What happened next?”, “Then what happened”) a second arrow card was placed next to the first and the interviewer pointed to the second card. There were two different images used for depth cards; a clock with a question mark in the center was used for questions that requested more information around a period of the event (e.g., “What happened when [pre-disclosed detail]?”) and a question mark with arrows pointing in multiple directions was used for depth questions that requested elaboration (e.g., “Tell me more about the part when [pre-disclosed detail]”).

Coding

All interviews were audiotaped, transcribed verbatim, and de-identified. Responses to the practice narrative were not coded, as accuracy could not be determined and the purpose was to provide interviewees with the opportunity to practice responding to the interview questions and to make them feel comfortable. All event-related responses after the practice narrative phases were coded.

Question types were coded as open-ended, minimal encourager, and cued recall. There were no other question types asked. For each occurrence that participants could recall (last, first, second) responses were coded into one of the following five categories; (i) *generic details* when participants described what happened during the event, but did not give the alternative specific to one occurrence or gave details which remained consistent during each event (e.g., “put top on”); (ii) *specific details* when they described the detail specific to one session (e.g., “red top on”, when the top was red); (iii) *internal intrusion* when they described an experienced detail from a different occurrence than the one they were currently narrating (e.g., “blue top on”, when a different occurrence included a blue top); (iv) *external intrusion* when they described a detail not included in any occurrences (e.g., “pink top on”, when no occurrence included a pink top); and (v) *don’t know responses*.

Participants were able to receive multiple codes for their mentions of details. For example, if participants stated, “cow, black, see inside” they would receive three points in any of the categories because the cow was unique to an occurrence and multiple descriptors were provided (i.e., one point each for “cow”, “black”, and “see inside”).

Responses to the “one time or more than one time” question were coded as correct (more than one time) or incorrect (one time). No participant gave an alternate response (e.g., no response, digression).

Reliability. One postgraduate student coded all transcripts for the study. For reliability purposes, 20% of the transcripts (16 transcripts) were double coded by a second independent coder. Percent agreement was used as the measure of reliability because variables were continuous and required agreement on the total number identified per interview. Agreement was 90% or greater for all codes.

Results

The data were screened for assumptions and outliers. There were three outlying values: two on the internal intrusions variable (one from the narrative-first and one from the visual cues condition) and one on the don't know variable (a second participant from the visual cues condition). In order to retain all participants in analyses, the three values were replaced with their scale means.

Preliminary Analyses

Preliminary analyses were conducted to detect any unexpected differences across interview conditions. Given that conditions were matched on expressive language and intellectual functioning they did not differ on these measures (see Table 1 for means and statistics). We also assessed whether there were any differences in group composition (participants took part in groups of 1 – 6). To reduce the prevalence of small cell sizes, we collapsed groups into: individual, small group (2 – 4), and large group (5 or 6) and tested it with a 3 (group size) x 3 (interview condition) Chi square. The analysis was not significant, $\chi^2(4, N = 80) = 5.67, p = .23$, Cramer's $V = .19$.

Next, we verified that participants were given an equal opportunity to share information in each interview condition. A one-way ANOVA demonstrated no significant difference in the total number of prompts delivered, $F(2, 77) = 1.31, p = .28, \eta_p^2 = .01$. The average number of prompts in the narrative-first ($M = 77.63, SD = 39.07$), intermixed ($M = 65.89, SD = 17.36$), and

visual cues ($M = 72.50$, $SD = 17.30$) interviews were all statistically equal. One participant received a very high number of prompts, which related to her communication style (using a letter board). She was retained, as her inclusion did not affect the results of any analysis.

A MANOVA checked for differences in question type across conditions. The multivariate result was significant, Pillai's Trace = .27, $F(6, 152) = 4.01$, $p = .001$, $\eta_p^2 = .14$. The univariate F tests revealed no differences across conditions in the percentage of cued recall questions, $F(2, 77) = 1.23$, $p = .30$, $\eta_p^2 = .03$, or minimal encouragers, $F(2, 77) < 1$, $p = .53$, $\eta_p^2 = .02$, but a significant difference in open-ended questions, $F(2, 77) = 12.05$, $p < .001$, $\eta_p^2 = .24$. As would be expected, there was no difference in the percentage of open-ended questions in the narrative-first and visual cues condition, but both included a significantly greater percentage compared to the intermixed condition. The percentages of cued recall, minimal encouragers, and open-ended questions in each condition were as follows: narrative-first 36%, 37%, 27%; intermixed 42%, 41%, 17%; visual cues 37%, 36%, 27%. In other words, the majority of prompts in all interview conditions were high quality (open-ended and minimal encouragers; $M = 62\%$, $SD = 14\%$).

Four participants did not have a practice narrative phase because they persisted in talking about the target event from the outset of the interview, regardless of prompting to describe a practice event. They were one each in the narrative-first and visual cues, and two in the intermixed condition. Participants' mean length of utterance (MLU) ranged from 1 to 7.50 in the practice narrative ($M = 3.61$, $SD = 1.64$) and 1 to 7.34 in the substantive phase ($M = 3.07$, $SD = 1.58$). There was no difference across interview conditions (Table 1, bottom two rows).

In the subsequent sections, we compare the three interview conditions with regard to reports for the last occurrence and responses to the frequency question. We then present correlations between the matching and dependent variables. When participants responded

accurately to the frequency question they were asked to report the details of the first and then second occurrences; we conclude the results with an overview of their ability to do so.

Main Analyses

Reports of the last occurrence. To test the hypothesis that the intermixed and visual cues interviews would elicit more correct information than the narrative-first interview, and that participants would report more generic than specific details regardless of interview condition, a 3 (interview type) by 2 (detail type: generic vs. specific) mixed measures analysis of variance (ANOVA) was conducted, the latter factor was within-subjects. A one-way (interview-type) MANOVA was conducted to assess the effects of interview type on internal intrusion errors, external intrusion errors, and don't know responses. Significant differences across interview types were evaluated with Bonferroni-corrected pairwise comparisons.

Correct information and reporting specificity. The mixed measures analysis revealed a main effect of interview, $F(2, 77) = 4.67, p = .012, \eta_p^2 = .11$, and a main effect of detail, $F(1, 77) = 58.86, p < .001, \eta_p^2 = .43$. The interaction was not significant, $F(2, 77) = .32, p = .73, \eta_p^2 < .01$. Post-hoc tests indicated that mean number of details reported about the last occurrence was significantly lower in the narrative-first ($M = 5.41, SD = 3.70$) than the intermixed ($M = 7.48, SD = 3.73$) and visual cues interviews ($M = 7.62, SD = 4.16$), as predicted. There was no difference between the intermixed and visual interview. As hypothesized, more generic ($M = 9.04, SD = 4.26$) than specific details ($M = 4.61, SD = 3.77$) were reported.

Errors and don't know responses. The results of the MANOVA demonstrated a significant multivariate effect, Wilks' Lambda = .82, $F(6, 150) = 2.55, p = .022, \eta_p^2 = .09$. The univariate F tests evinced significant effects of interview type on internal intrusions, $F(2, 77) = 12.07, p = .037, \eta_p^2 = 0.08$ and don't know responses, $F(2, 77) = 5.69, p = .005, \eta_p^2 = 0.13$, but not external intrusions, $F(2, 77) = .12, p = .89, \eta_p^2 < .01$. The Levene's test of equality of error

variances was significant for the don't know variable ($p < .001$), so its significance was evaluated at $p < .01$. As predicted, internal intrusions were lower in the narrative-first ($M = 1.88$, $SD = 1.78$) than the visual interview ($M = 3.22$, $SD = 2.11$). The intermixed interview ($M = 2.67$, $SD = 1.71$) did not differ from either. Contrary to prediction, there were no differences in external intrusion errors across the three interview types. On average, participants provided 0.52 external intrusions during the narrative-first interview ($SD = 0.75$), 0.63 external intrusions during the intermixed interview ($SD = 1.08$), and 0.62 external intrusions during the visual interview ($SD = 0.90$). There were ten participants in each the narrative-first and intermixed interview who made one or more external intrusions (38%), and eight (30%) in the visual cues interview. Also not as predicted, don't know responses were higher in the narrative-first ($M = 5.85$, $SD = 5.22$) than the intermixed ($M = 3.11$, $SD = 2.58$) and visual cues interviews ($M = 2.70$, $SD = 2.70$). The latter two did not differ.

Reports of repeated event frequency. We examined participant responses to the interview question, “Did [event] happen one time or more than one time?”. Contrary to expectation, 32.5% of participants replied incorrectly (e.g., “one time”). A 2 (correct, incorrect) x 3 (interview condition) chi square revealed no significant difference across conditions $\chi^2(2) < 1$, $p = .82$, Cramer's $V = .07$. Roughly one-third of participants in each condition answered incorrectly (narrative-first 37%, intermixed 30%, visual cues 31%).

Independent-samples t -tests were conducted to compare intelligence and MLU scores between participants who answered correctly versus incorrectly. Individuals who responded incorrectly had a lower intelligence score, ($M = 9.88$, $SD = 3.04$), $t(74) = 4.16$, $p < .001$, Cohen's $d = 1.04$ and also had a lower MLU score ($M = 2.49$, $SD = 1.05$), $t(78) = 3.65$, $p < .001$, Cohen's $d = 0.88$, compared to participants who answered correctly ($M_{intelligence} = 18.04$, $SD = 9.37$; $M_{MLU} = 3.81$, $SD = 1.69$).

Exploratory Analyses

Relationships among matching and outcome variables. While there were no differences across conditions in expressive language and intellectual functioning because samples were matched on these variables, they were related to performance on the frequency question and may have associations with other dependent variables. We conducted Pearson's correlations amongst the matching and outcome variables (see Table 2). The matching variables were correlated with each other. Further, intellectual functioning was positively correlated with specific details and negatively correlated with external intrusions. General details, specific details, and internal intrusions were all positively correlated with expressive language and all negatively correlated with don't know responses. The reporting of general details and internal intrusions were positively related.

Reports of the first and second occurrences. Whilst 54 participants answered the frequency question correctly and were thus asked about other occurrences, only 43 of them were able to provide any details about the first time (narrative-first $n = 14$, intermixed $n = 14$, visual cues $n = 15$). What they did provide was scant. Repeating the series of analyses conducted on reports of the last time produced only one significant effect: generic details ($M = 4.72$, $SD = 2.68$) were reported more often than specific details ($M = 2.87$, $SD = 2.47$), $F(1, 40) = 17.58$, $p < .001$, $\eta_p^2 = .31$. There were no effects of interview condition on errors and don't know responses, Wilks' Lambda = .81, $F(6, 76) = 1.42$, $p = .22$, $\eta_p^2 = .10$. Internal intrusions were few, averaging just 1.86 per interview ($SD = 1.77$), as were external intrusions ($M = .23$, $SD = .43$) and don't know responses ($M = 2.28$, $SD = 1.71$).

Of the 43 participants who described the first time, just 26 were able to provide any details about the second occurrence (narrative-first $n = 10$, intermixed $n = 6$, visual cues $n = 10$). Due to very low cell sizes, we did not repeat the inferential analyses. Participants reported an

average of 3.08 generic details ($SD = 2.12$) and 2.35 specific details ($SD = 1.92$). They made 1.35 internal intrusions ($SD = 1.33$), 0.34 external intrusions ($SD = .94$), and 1.54 don't know responses ($SD = 1.68$).

Discussion

Past research has indicated that open-ended prompts may be too broad to elicit extensive detail from certain witness groups (e.g., very young children and individuals with intellectual disability) and that additional structure may be necessary (Hershkowitz, et al., 2012; Wyman et al, 2018). We investigated which of three interview protocols (narrative-first, intermixed, or visual cues) would elicit the most detailed and accurate information from adults with limited verbal ability. Our secondary aim was to examine reports of repeated events in this population. Broadly, the present research is intended to inform forensic interview practice on how best to interview minimally verbal adults, and can provide interviewers with guidance around what level of detail may reasonably be expected in interviews with this group of witnesses.

As predicted, participants reported overall more correct information in the intermixed and visual cues compared to the narrative-first interview. Regarding errors, hypotheses were partially confirmed. The narrative-first interview did elicit fewer internal intrusions compared to the visual cues, but not compared to the intermixed interview, and there were no differences for external intrusions. Contrary to prediction, participants provided fewer "don't know" responses in the intermixed and visual interview than the narrative-first interview. In sum, key findings regarding interview type were that some type of non-suggestive scaffolding provided added benefit to the participants' accounts compared to an interview without (i.e., narrative-first interview).

As expected, talking about occurrences of a repeated event was very challenging for this population. They reported more generic than specific details as predicted, but unexpectedly, nearly a third could not effectively answer the "one time more than one time" question. Of the

ones who did answer correctly, 20% were unable to provide details about any other occurrences, and the remainder provided scant information. Exploratory correlational analyses demonstrated that measures of expressive language and intellectual function were positively associated with the provision of event details. The following sections further outline the findings in relation to the details provided by interviewees, their reports of event frequency, and recommendations for interviewing.

Details Provided by Interviewees

Participants provided more correct information in the intermixed and visual cues compared to the narrative-first interview. At first glance, this finding seems inconsistent with prior research, which has demonstrated that open-ended questions are superior to other types with respect to eliciting accurate information (e.g., Brown, Lamb, Lewis, Pipe, Orbach, & Wolfman, 2013; Brown, et al., 2012; Dion & Cyr, 2008). However, all three interview conditions comprised the same ratio of specific (cued recall) to free recall (open-ended and minimal encouragers) prompting but differed in how those were delivered. The intermixed interview paired free with cued recall prompts, and the visual cues condition combined open-ended prompts with cue cards. Both of these conditions, therefore, provided the participants with additional support to respond to high quality prompting (Hershkowitz, et al., 2012; Wyman et al, 2018). Our findings suggest that a free recall phase may be too broad and that more structure is required to increase narrative information from minimally verbal adults (Dorado & Saywitz, 2007; Hershkowitz et al., 2012; Peterson, Warren, & Hayes, 2013).

One reason that open-ended prompts and minimal encouragers produce more accurate reports than those elicited with specific questions is because people are less likely to guess in response to the former (Brown & Lamb, 2015; Waterman, Blades, & Spencer, 2010). The narrative-first interview allowed participants to report everything they could about a specific

occurrence before being asked specific questions about details they had mentioned (Lamb et al., 2018). As such, we expected that they would produce the fewest errors (Agnew & Powell, 2004; Brown et al., 2012). They only did so in comparison to the visual cues interview, and only for internal intrusions. The use of non-verbal tools (e.g., drawings and diagrams) has been shown to increase the reports of both false and true information (Nathanson et al., 2007; Poole & Dickinson, 2011). Notably, however, internal intrusions are not false details; they are simply mislocated. The visual cues condition in the present study did not increase external intrusions, perhaps because the cards are symbols of question types (an arrow and question mark) rather than of categories like people and settings that might lend themselves to increased fabrication. Nevertheless, the present findings suggest that use of the narrative-first or intermixed protocol would be advantageous when the credibility of a case may be impacted by confusing details across occurrences (i.e., internal intrusion errors).

Contrary to our prediction, participants provided more “don’t know” responses in the narrative-first interview than the visual or intermixed interview. Despite some research showing infrequent “don’t know” responses in free recall about repeated events (e.g., Danby et al., 2015), there is also evidence that open-ended questions yield these responses at higher than expected rates (Melinder & Gilstrap, 2009). Further research is needed to illuminate the reasons for the “don’t know” responding observed in the current study. “Don’t know” responses may reflect encoding failures. If this were the case, however, differences across interview conditions would not be expected. Such responses may also reveal participant attempts at accuracy. Research has demonstrated a greater tendency to give “don’t know” responses to recall than recognition questions (e.g., Waterman et al., 2000), but all three protocols in the present study consisted exclusively of the former. We propose that the broadness of the questions at the outset of the

narrative-first interview, combined with the lack of support provided by visual cues, might have led participants to say, “I don’t know” more often than in the other conditions.

Talking About Occurrences of Repeated Events

A novel aspect of the current research was to describe minimally verbal adults’ reports of repeated events, and it was evident that talking about individual occurrences was challenging. Similar to research conducted with children, minimally verbal adults confused details between the occurrences and, regardless of interview condition, provided almost double the number of generic than specific details (Roberts & Powell, 2001). This was true in reports of the last and first occurrence. These findings are in keeping with the general repeated event literature showing that people find it easier to report what usually happens than details specific to one occurrence (Brubacher & Earhart, 2019).

It was expected that most of the minimally verbal adults in our sample would be able to respond to the “one time or more than one time” question. Roberts et al. (2015) found that none of the 4- to 8-year-old children in their analogue study answered it incorrectly (even though they made mistakes in response to the cued recall question about the precise number of times). Similarly, Orbach and Lamb (2007) found that allegedly maltreated 4- to 7-year olds were more likely to respond effectively to the forced choice prompt rather than cued recall prompts such as “how many times did [event] happen?” Yet, nearly a third of adults in the current sample erred (by choosing the one time option). Of these, their intellectual ability and MLU was significantly lower than those participants who were accurate. They functioned at an age range of 16-41 months for their verbal ability, which is lower than the populations previously studied. Our results suggest that a different approach may be needed to determine how many times an event has occurred when interviewing adults with limited verbal ability and associated cognitive impairments.

Associations amongst the matching and dependent variables suggest additional challenges in reporting about repeated events for people with very limited language abilities. Greater intellectual functioning was associated with fewer external intrusions, as has been found by others (e.g., Gudjonsson & Sigurdsson, 1996). As expressive language and intellectual function increased, participants provided increasing numbers of specific details. Expressive language was also associated with providing more general details and more internal intrusions; in other words, greater ability to describe the events overall. This result is to be expected, and can be framed with regard to how adults with typical verbal skills describe occurrences of repeated events. For example, Theunissen and colleagues' (2017) adult participants provided around 100 units of information in their first interview about one in a series of 2.5 minute films, and Rivard, Fisher, Robertson, & Mueller's (2014) law enforcement participants reported approximately 230 details about one occurrence of a repeated event (a specific meeting that preceded a field exercise such as conducting surveillance). In comparison, adults in the present study with minimal verbal ability produced around 13 details for the last occurrence of the activities (combining generic and specific details). This rate is similar to the reports of children in Brubacher, Roberts, and Powell (2012), who reported an average of five to ten details (generic and specific) in their recall of one occurrence.

Implications for Interviewing Policy

Despite documented difficulty in reporting details specific to individual occurrences, particularization requirements in many jurisdictions mean that victims must do just that (Burrows & Powell, 2015). Reporting a repeated event is challenging because individuals find it easier to recall what generally happens on one occasion rather than specific details relating to one occurrence (Brubacher et al., 2012), and they are likely get confused about which details happened on which time (Powell et al., 1999). These internal intrusion errors can lead to

inconsistencies when individuals are questioned and therefore run the risk of impacting credibility. For example, Connolly and colleagues (2008) found that 4- to 7-year-old children interviewed about repeated laboratory events were perceived as less credible than those interviewed about a single event. When these authors explored the content of the interviews, they found that, with repeated experience, children were less consistent about which specific details had been present in a target occurrence.

The present study has demonstrated that, like children and verbally fluent adults, those with limited expressive language report more generic than specific details following repeated experience, and they are prone to internal intrusion errors. These findings are indicative of similar memory organization across the populations, and indicate that interviewers should be sensitive to the ways in which they question minimally verbal adults about experiences that may be repeated.

To overcome children's difficulty in reporting occurrence-specific details, some jurisdictions have adopted continuous child sexual abuse statutes, allowing for reduced particularity of a repeated offence (*The Crimes Act 1958*, Victoria; *The Criminal Code Act 1899*, Queensland). Continuous abuse statutes allow for a minimum number of abusive acts to be charged, in relation to a period of time. Currently, in Australia and some jurisdictions of the U.S. the complainant must be a young child for a defendant to be charged with continuous abuse. Combined with the prior literature, the findings of the current study provide strong support for the proposition that guidelines for particularization of occurrences be relaxed in multiple vulnerable populations (see Woiwod & Connolly, 2017, for discussion).

As participants reported more correct information in the intermixed and visual interview (albeit with increased internal intrusions for the latter) compared to the narrative-first protocol, these more structured interviews would be best used in jurisdictions where charges of continuous abuse are allowed. For participants in jurisdictions where such charges are not available, the

narrative-first interview may be more appropriate due to lower intrusion errors (at least compared to the visual condition). From a policy standpoint, these findings serve as a reminder that there cannot be a “one-size-fits-all” approach to interviewing. Interviewers and their trainers must be aware of the broader empirical literature that supports various interviewing approaches so that they can tailor best practice protocols according to their needs.

The visual interview may be easier to apply than the intermixed interview, as interviewers can utilize open-ended questions by adding visuals, but cues should not be used without training (Brown & Pipe, 2003). The intermixed interview is a constant sequence of “Wh” questions paired with open-ended questions. While it was arguably the best one of the three in the present study, interviewers may find it difficult to alternate between question types without compromising accuracy or slipping into asking solely specific questions unpaired with open-ended ones (Guadagno et al., 2013). This behavior was demonstrated in research conducted by Wolfman, Brown, and Jose (2016) where interviewers did not request for elaboration following responses to specific questions. Interviewers with more developed skills may be able to pair open-ended and specific questions throughout an interview, but for the majority, the visual cues interview would be easier to apply and train.

Limitations

Lab studies are critical for understanding memory reports under controlled conditions, and provide ground truth. They can be criticized, however, for a lack of generalizability. While the modified Deakin Activities used in the current study bear no resemblance to a criminal offence about which victims might need to be interviewed, the event purposefully includes several details which would have forensic relevance if reported during an interview, such as donning and removal of clothes (leader’s top), body parts to be reported (i.e., during the

relaxation), and photographs being shown. Multiple sensory elements (e.g., auditory: music for relaxing; gustatory: snack) are also incorporated.

Although differences between the protocols were observed, findings may not generalize to interviews about single experiences, or interviews about maltreatment. Regarding the latter, past research has shown that confusions across occurrences of repeated events can occur for events perceived negatively as well as positively (Price & Connolly, 2007). Related to generalizability is the limitation that we did not obtain specific diagnoses for each participant. They shared a common feature; they had limited verbal ability, but could have differed in numerous other ways. We attempted to overcome this limitation by matching the participants on verbal ability and intellectual function. Conversely, it could be argued that the variability in our participants is a strength of the research because we found differences across interview protocols even with such a heterogeneous sample. We speculate that such heterogeneity would likely be observed among witnesses in field interviews.

There were a few limitations associated with our protocol design. Of the three protocols tested, the intermixed condition was the only one where the main interview differed to that of the practice narrative phase (i.e., only open-ended questions were used in the practice narrative of the intermixed condition). Nevertheless, on the whole the intermixed condition seemed to have outperformed the other interview conditions. Thus, it is unlikely that this confound impacted the results. Secondly, interviews in the field may contain leading or suggestive questions, and the impact of such questions on accuracy was beyond the scope of the present study. Finally, neither the modified protocols tested in this study nor the open-ended questioning practices recommended in investigative interviews may be directly applicable to courtroom questioning of witnesses who are minimally verbal. Further work is urgently needed to illuminate the challenges faced by this population during legal proceedings.

Conclusions

The current study has reiterated that minimally verbal adults are capable of providing accurate event-related information when interviewed using appropriate questioning techniques, even if the level of detail they can provide is scant. As with other interviewee groups, the onus is on the interviewer to support the interviewee's ability through effective questioning. The results indicate that all three interview protocols were effective in eliciting event-related detail from the vast majority of individuals who have limited expressive language, and that reporting details specific to occurrences of repeated events is challenging. We make the following recommendations for interviewing policy: 1) Charges of continuous abuse should be considered for multiple sub-categories of vulnerable witnesses; 2) where continuous abuse charges are allowed, scaffolding (i.e., the visual or intermixed protocol) may help to increase the amount of detail reported; and 3) if particularization is critical, the narrative-first protocol will be the most advantageous because of the lower risk of internal intrusion errors compared to the visual cues interview and greater ease of training compared to the intermixed protocol. The present findings should assist investigative interviewers to recognize both the limitations and capabilities of minimally verbal adults and enhance their ability to obtain essential information about experienced events.

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Table 1

Mean Language and Intellectual Ability of Participants Across Interview Conditions

	Interview condition			
	Narrative-first (<i>n</i> = 27)	Intermixed (<i>n</i> = 27)	Visual Cues (<i>n</i> = 26)	One-way ANOVA
Matching variables				
Intellectual functioning	15.33 (8.44), <i>n</i> = 24 ^a	16.08 (9.30), <i>n</i> = 26	14.96 (8.88)	$F(2,73) = 0.11, p = .90, \eta_p^2 = .01$
Expressive Language Picture Cards	3.19 (1.79)	3.40 (1.51)	3.56 (1.63)	$F(2,77) = 0.35, p = .71, \eta_p^2 = .01$
Interview performance				
Expressive Language Practice Narrative	3.35 (1.74) <i>n</i> = 26	3.53 (1.27), <i>n</i> = 25	3.96 (1.84), <i>n</i> = 25	$F(2,73) = 0.94, p = .40, \eta_p^2 = .03$
Expressive Language Substantive Phase	2.87 (1.72)	2.84 (1.36)	3.52 (1.62)	$F(2,77) = 1.57, p = .22, \eta_p^2 = .04$

Note: Standard deviations in parentheses. The expressive language ability score is from Miller, Gillon, and Westerveld (2018) and the intellectual functioning score is from Raven, Raven, and Court (1998). ^a *ns* are provided where the number deviates from the condition *n*. Four participants did not complete narrative practice; four participants did not complete the intellectual functioning assessment.

Table 2

Correlations Among Measures of Expressive Language, Intellectual Functioning, and Details Reported About the Last Occurrence.

	Expressive language	Generic details	Specific details	Internal^b intrusions	External intrusions	Don't Know^b responses
Intellectual functioning^a	.35**	.12	.47**	.14	-.27*	-.15
Expressive language		.46**	.39**	.23*	-.02	-.21
Generic details			.19	.28*	-.07	-.28**
Specific details				.21	-.21	-.37**
Internal intrusions					-.13	-.37**
External intrusions						.15

Note: ^a Four participants were unable to complete the intellectual functioning assessment.

^b Outliers removed from main analyses also omitted from correlational analyses.

* $p < .05$, ** $p < .01$

Appendix A**Target items across three events**

Item (Generic Detail)	Event 1	Event 2	Event 3
Name	Sticky label	Pant clip	Lanyard
Leader's top	Red	Blue	Yellow
Pictures	Door	Window	Floor
Show and tell	Cow	Fan	Magnet
Item came in	Bin bag	Bubble wrap	Newspaper
Item giver's name	Person A	Person B	Person C
Item giver's job	Artist	Teacher	Gardener
Music type	Birds	Beach	Children
Music played on	Laptop	Phone	Ipad
Relaxation	Head	Arms	Legs
Refresh	Hand sanitizer	Wipe	Moisturizer
Snack type	Chocolate mousse	Fruit tub	Packet of chips
Snack bought	Woolworths	Coles	Foodland
Demonstrator's appearance	Hair up	Hair down	Glasses
Who else was there	Person X	Person Y	Person Z

Appendix B**Cues used in visual cues interview**

Examples of Breadth Questions “What happened next” (point to card) “What happened then” (point to next card) “What happened after that” (point to card) “What else happened when” (point to card)	Breadth Visual Cue Cards
Examples of Depth Questions “What happened when X” (point to clock card) “Tell me more about the part when” (point to arrow-expansion card)	Depth Visual Cue Cards