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**Differential Effects of General versus Cued Invitations on Children's Reports of a Repeated  
Event Episode**

Meaghan C. Danby<sup>1</sup>, Stefanie J. Sharman\*<sup>1</sup>, Sonja P. Brubacher<sup>1</sup>, Martine B. Powell<sup>1</sup>, and Kim P.  
Roberts<sup>2</sup>

<sup>1</sup> Centre for Investigative Interviewing, Deakin University

<sup>2</sup> Wilfrid Laurier University

Author Note

This research was conducted for a PhD Research Project by MD. Many thanks to the children and teachers at the participating schools. \*Correspondence and reprint requests should be addressed to Stefanie Sharman, School of Psychology, Deakin University, 221 Burwood Highway, Burwood, VIC 3125, Australia, (e-mail: stefanie.sharman@ deakin.edu.au).

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## Abstract

The ability to describe individual episodes of repeated events (such as ongoing abuse) can enhance children's testimony and assist the progression of their cases through the legal system. Open-ended prompts have been advocated as a means to assist children in accurately retrieving information about individual episodes. In the current study, two subtypes of open-ended prompts (cued and general invitations) were compared for their effects on 5–9-year-olds' ( $n = 203$ ) reports about individual episodes of a repeated event. Interviews occurred 1-2 weeks after the last of four event sessions. Cued invitations assisted children to provide specific details about individual episodes of a repeated event, while general invitations were useful to elicit more broad happenings of the episodes. The accuracy of responses to general invitations was similar for children of all ages up to one week after the event, but at a longer interview delay younger children were less accurate than older children. There were no differences in the accuracy of responses to cued invitations as a function of age or interview delay. Results suggest that interviewers tasked with eliciting accounts of individual episodes from a repeated event, such as ongoing abuse, should consider the differential efficacy of each prompt-type on children's reports.

*Keywords:* children; repeated event; open-ended invitations; episodic memory; interviewing

In the past decade, numerous studies have been devoted to facilitating children's recall of individual episodes within a repeated event (see Brubacher, Roberts & Powell, 2014, for a review). This work is essential for assisting children to particularise episodes of repeated offences, such as child abuse. Particularisation requirements in many jurisdictions necessitate that children describe individual episodes of abuse with a reasonable level of detail (e.g., the time, place, or some other unique detail) if their case is to progress through the legal system (Powell, Roberts & Guadagno, 2007; *S v. R*, 1989). Even where particularisation is not mandatory, evidence suggests that the credibility of children's testimony is enhanced when episodic details are provided (Burrows & Powell, 2013; Connolly, Price, Lavoie, & Gordon, 2008; Smith & Milne, 2011).

Providing incident-specific details from an episode of a repeated event is difficult for children, who (like adults) develop generalised cognitive representations for how the event usually transpires (i.e., scripts; Fivush, 1984; Hudson, Fivush & Kuebli, 1992; Hudson & Nelson, 1986). Scripts can be useful, as they strengthen memories for details that happen similarly across episodes (Connolly & Lindsay, 2001; Powell, Roberts, Ceci, & Hembrooke, 1999), and children retain these details in memory even after a delay (e.g., 3 weeks after the event; Powell et al., 1999). However, scripts create difficulties for children when they need to retrieve memories of individual episodes (Fivush, 1984; Means & Loftus, 1991; Powell & Thomson, 1996). Details that are script-consistent but happen differently across episodes are commonly linked to the wrong episode (Powell & Thomson, 1996; Powell et al. 1999). Powell and Thomson (1996) found that young children who participated in a repeated event were most likely to err in their recall of an individual episode by reporting similar details that were experienced in other episodes, like confusing the colour of the leader's cloak, which changed each day. To assist children in accurately retrieving information about individual episodes, Brubacher and colleagues (2014) recently advocated open-ended prompting when interviewing children about repeated events to: (a) permit children to recall episodes in their own words, rather than according to interviewer direction; and (b) reduce interviewers' reliance on closed questions (e.g., direct, yes/no) that increase confusion of details across episodes.

The use of open-ended prompts is widely supported as the ideal manner for prompting children in interviews, regardless of whether the child is reporting on a one-off or a repeated event (Lamb, Orbach, Hershkowitz, Esplin, & Horowitz, 2007; Lamb, Orbach, Warren, Esplin, & Hershkowitz, 2007; Powell, Fisher, & Wright, 2005). Open-ended prompts encourage narrative responses without dictating the information to be reported (e.g., 'Tell me what happened'; Snow, Powell, & Murfett, 2009). Children provide more accurate (Dent & Stephenson, 1979) and more detailed (Brown et al., 2013) responses to open-ended than closed questions (see Larsson & Lamb, 2009 for a review). In fact, children sometimes provide forensically relevant temporal details in free recall, reducing interviewers' reliance on riskier closed questions to elicit this information (Lamb et al., 2003; Powell, Wright, & Hughes-Scholes, 2011).

### **Variants of Open-ended Prompts**

Previous work on interviewer questioning has revealed that there are various sub-types of open-ended prompts, which may evoke different kinds of narrative information (e.g., Feltis, Powell, Snow, & Hughes-Scholes, 2010; Lamb et al., 2003). Of particular relevance to the current study are two variants described by Lamb and colleagues (Lamb et al., 2003, Orbach & Lamb, 2000): *general* invitations (which are broad in nature; e.g., 'What else happened?', 'Then what happened?') and *cued* invitations (which probe previously disclosed information; e.g., 'Tell me more about the part where [previously disclosed detail]'). These prompts are also referred to in some literature as *breadth* and *depth*, respectively (see Powell & Snow, 2007). For simplicity, Lamb's terminology has been used in the current paper. In an examination of high-quality forensic interviews with two children (one aged 5 and one aged 15 years) about a single incident of sexual abuse, Orbach and Lamb (2000) found proportionally more overall details were elicited via general than cued invitations, but more central (as opposed to peripheral) details were elicited via cued than general invitations. Lamb et al. (2003) explored developmental improvements in children's responding to each prompt-type in 130 forensic interviews with 4- to 8-year-olds. The older children were found to provide more information to both prompt-types than the younger children. Differences between children alleging single versus repeated abuse, however, were not explored.

Furthermore, the accuracy of children's responses to general versus cued invitations could not be determined in these field studies.

Evans and colleagues conducted both field and laboratory studies comparing the effects of different open-ended prompt variants. Their work examined the use of *expansion paraphrases* to elicit children's reports (Evans & Roberts, 2009; Evans, Roberts, Price, & Stefek, 2010). Expansion paraphrases were considered requests for elaboration that reiterated a just-disclosed detail (e.g., Child: 'They did bad stuff to me.' Interviewer: 'They did bad stuff to you. Tell me more.'). Expansion paraphrases always followed the structure of '[disclosed detail]. Tell me more' and were used to probe about a detail immediately after its disclosure. As such, expansion paraphrases could be considered a sub-type of cued invitations, where the broader category of cued invitations takes multiple forms (e.g., 'What happened when [disclosed detail], 'Tell me more about the part where [disclosed detail], 'You said [disclosed detail], Tell me more'), and can probe details disclosed at any earlier point in the interview. Evans and colleagues grouped all of the other formats of cued invitations with general invitations to create an open-ended prompt category. Neither of their studies found evidence that expansion paraphrasing elicited more details than open-ended prompts. Accuracy was assessed in Evans and Roberts' (2009) laboratory study; it showed that children provided comparable numbers of accurate and inaccurate details to expansion paraphrases and other open-ended prompts.

To our knowledge, the only other laboratory study to directly compare different types of open-ended prompts was conducted by Horowitz (2009). Children viewed a slideshow about animals engaged in various actions. A week later, their responses to *open* (e.g., 'Tell me about the pictures you saw'), *direct* (e.g., 'What did the squirrel have in its hands?'), and *mixed* prompts (containing both closed and open aspects; e.g., 'Was there a squirrel?' [if yes] 'Tell me more about that') were compared. Overall, open prompts elicited longer responses than mixed prompts, which elicited longer responses than direct prompts. In ten of the 50 interviews (20%), children had already disclosed the information to be requested from a mixed prompt, so the wording was altered to, 'You mentioned [e.g., a squirrel]. Tell me more about that.' This phrasing is structurally

equivalent to a cued invitation, and children responded to this wording with fewer omission errors (i.e., leaving out details) than to the standard mixed prompts.

Taken together, the literature does not provide an overly clear picture of the efficacy of different types of open-ended prompts on children's memory reports. Studies have used different terminology, disparate definitions, small samples, field designs where accuracy cannot be assessed, and/or to-be-remembered information that did not have an event structure. Further, none of the laboratory studies involved repeated events, while both field studies included children making allegations of single and repeated abuse but did not compare them. The omission of laboratory studies in which different open-ended prompt-types are compared in interviews about repeated events needs to be addressed for both practical and theoretical purposes. With repeated experience children develop and strengthen memory scripts, which are associated with enhanced memory for typically occurring details as well as increased confusions across experienced episodes (Powell & Thomson, 1996; Powell et al., 1999).

### **Prompting about Repeated Events**

Rather than comparing general versus cued invitations, research on eliciting information about repeated experience has focused on prompts that activate different memory representations. Specifically, when open-ended prompts about the event script (e.g., 'What usually happens?') are delivered in a block prior to a block of open-ended prompts about an individual episode (e.g., 'Ok, now tell me everything that happened the last time') laboratory research has shown that children's reports of repeated events were more complete than if the order of the blocks were reversed (Brubacher, Roberts, & Powell, 2012; Connolly & Gordon, 2014). Field studies have further shown that children readily provide scripts in response to prompts for their scripts, and conversely, are more likely to report details about individual episodes in response to episodic prompts (Brubacher, Malloy, Lamb, & Roberts, 2013; Schneider, Price, Roberts, & Hedrick, 2011). This line of research yields a clear picture of how the event script versus episode information can be elicited from children following repeated events, but leaves unexamined the effects of different open-ended prompts within reports of an individual episode (i.e., when children are talking about just one time).

### Current Study

Despite differences in the extant research, some broad conclusions can be drawn about general versus cued invitations. Children's ability to provide information to both prompt-types develops with age (Lamb et al., 2003), and while general invitations may elicit overall more information about what happened (e.g., there was a puzzle), cued invitations may be particularly helpful to obtain specific details (e.g., it was a clown in a car puzzle) from children (e.g., Feltis et al., 2010; Horowitz, 2009; Orbach & Lamb, 2000).

Cued invitations have been associated with fewer omission errors (Horowitz, 2009), and provide more scaffolding for children's responses by directing them to attend to a previously mentioned detail (Lamb et al., 2003). As such, when children have experienced repeated events and their accuracy rests on attributing the correct details to the incident in question, an accuracy advantage for cued versus general invitations should be expected.

The current study sought to advance research on the differing effects of various open-ended prompts by examining the influence of cued and general invitations within children's reports of an individual episode of a repeated event. Five- to 9-year-olds participated in four episodes of a repeated classroom activity session, and were interviewed after a shorter delay (4-7 days) or a longer delay (8-14 days). Children were prompted about individual episodes of the event via cued and general invitations. The amount, specificity, and accuracy of children's reported details to each prompt-type were analysed. Considering the variation in terminology of open-ended prompt-types, we defined cued invitations as any open-ended prompt that requested elaboration about a detail previously mentioned by the child (e.g., 'You said you did relaxing. Tell me more about that part;' 'What happened when you relaxed?'). General invitations were considered any open-ended prompt not requesting elaboration on a pre-disclosed detail (e.g., 'What happened next?' 'What else happened?').

**Predictions.** Given children's responsiveness to variation in open-ended prompting for information about event scripts versus episodes (Brubacher et al., 2012; 2013; Schneider et al., 2011), we expected that they would demonstrate similar patterns *within* their reports of an individual episode. It was predicted that general invitations would tend to elicit the details of the



episode that were represented in children's scripts for how the event usually occurred (e.g., 'We heard a story that day,' when a story was present every day). In contrast, cued invitations were predicted to elicit episode-specific details (details unique to the episode; e.g., 'That time, the story was about monsters'). Children were also predicted to be more accurate at attributing the source (episode) of specific details in response to cued than general invitations. Secondary questions related to the effects of age and delay on children's responses. Similar to Lamb et al.'s (2003) findings, we anticipated that the number of details children provided would increase with age, regardless of invitation-type. The effect of delay has not previously been tested with different prompt-types and was included for exploratory purposes.

## Method

### Participants

Two-hundred and three children (110 girls, 93 boys) from primary schools across [location] and surrounding areas completed the study. Children were aged 5- to 9-years-old ( $M = 7.67$  years,  $SD = 1.28$ ). Children demonstrate notable growth in memory abilities for repeated events (Roberts, 2002), and responsiveness to open-ended questions (Lamb, Sternberg, & Esplin, 2000; Sternberg et al., 1996) throughout this developmental period. This age range is similar to that used in previous studies on children's repeated event memory (e.g., Brubacher et al., 2011; Powell & Thomson, 1997). To explore developmental differences in children's reports to general and cued invitations, children were divided into age groups. *Younger* children were considered 5 – 7 year-olds ( $n = 114$ ,  $M_{\text{years}} = 6.74$ ,  $SD = .86$ ) and *older* children were 8 – 9 year-olds ( $n = 89$ ,  $M_{\text{years}} = 8.86$ ,  $SD = .50$ ). This division was made because children aged 8 and older have demonstrated an increased ability to particularise episodes of a repeated event (Roberts, 2002), and increased responsiveness to invitations (Lamb et al., 2003) when compared to their younger counterparts.

### Materials

Children experienced a scripted classroom activity session (the [blinded] Activities), which lasted approximately 25 minutes and was repeated on four occasions. Each episode of the activities comprised 16 target memory items created specifically for research so that children would not have previous experience with them in that context. Items were always administered in the same

temporal order to assist children to develop a script for how the event usually occurred. Items centred around six main activities: meeting a puppet, listening to a story, doing a puzzle, relaxing, getting refreshed, and receiving a surprise (a sticker). The items represent various modes of relaying information (e.g., verbalisations, movements, objects) and were based on similar memory items successfully employed in previous in-school research (Agnew, Powell & Snow, 2006; Powell, Roberts, & Thomson, 2000, Powell & Thomson, 1996).

In each episode of the [blinded] Activities the presentation of the memory items (i.e., the *instantiation* of the item) varied according to a schedule, so each individual episode was slightly different (see Appendix A). Nine *fixed* items had identical instantiations in each episode (e.g., children sat on cardboard each time), six *variable* items were repeated across all episodes but had a different instantiation each time (e.g., children heard a story in each episode, but the content of the story differed each time), and one *new* item was presented per episode that was never repeated other times (e.g., children completed a puzzle in only one of the four episodes; thus children experienced four new details over the entire course of the [blinded] Activities; see also Brubacher, Glisic, Roberts, & Powell, 2011). Four counterbalanced presentation schedules were created, such that the fixed items for one group of children became variable or new items for the next group, variable items became fixed or new items, and so on. Children were randomly assigned to a counterbalanced presentation schedule. A series of ANOVAs showed no significant main effects or interactions with the counterbalanced presentation schedules on any of the dependent variables,  $F_s \leq 1.90$ ,  $p_s \geq .152$ .

### **Procedure**

Children's parents gave informed consent, and children assented to participate in the study. The activities were carried out in schools with groups of 20 – 40 children over a two-week period and were administered by a trained research assistant who took attendance at every session. Teachers were instructed not to discuss the activities with the children or to inform them that they would be later interviewed. Children were individually interviewed by a single interviewer after a *shorter* delay (4 – 7 days,  $n = 128$ ,  $M_{\text{days}} = 6.04$ ,  $SD = .82$ ) or a *longer* delay (8 – 14 days,  $n = 75$ ,

$M_{\text{days}} = 10.23$ ,  $SD = 2.02$ ) following the final episode of the activities. The interviews lasted approximately 20 minutes and were audio recorded and transcribed verbatim.

The interviewer was a postgraduate student extensively trained in best practice child interviewing but blind to the hypotheses of the study. The interviews were conducted in accordance with general best practice guidelines (e.g., *National Institute of Child Health and Human Development protocol*, Lamb, La Rooy, Malloy, & Katz, 2011; *the Standard Interview Method—Child*, Powell, 2014). Interviews commenced with the presentation of ground rules (see Brubacher, Poole, & Dickinson, 2015) and a rapport-building practice narrative phase (Roberts, Brubacher, Powell, & Price, 2011). The interviewer then explained that she was naïve about the [blinded] Activities ('I wasn't there when you did the [blinded] Activities, but I'd really like to know what happened'), and invited children to report what happened. Once children provided some information about the activities (verifying that they remembered them), the interviewer asked if the activities happened one time or more than one time (all children acknowledged the activities occurred multiple times). The interviewer subsequently asked children to nominate one well-remembered episode of the activities ('Tell me everything that happened the time you remember best at the [blinded] Activities'), and prompted children about the episode using general (e.g., 'What else happened?') and cued (e.g., 'You said you saw her friend, tell me about that part') invitations. Children were then requested to select another individual episode of the activities, and were prompted in the same manner until they said that they could recall no more. The interviewer was trained not to use other prompt-types (e.g., direct, yes/no), which occurred less than 3% of the time.

If children struggled to nominate an episode, the interviewer prompted them to talk about an episode associated with a pre-disclosed detail (e.g., 'You mentioned a dog story, tell me what happened the day with the dog story'). In order to ensure that as many children as possible would be able to talk about a specific episode, as was done in Brubacher et al. (2012), the interviewer was provided with a list of the details that were unique to episodes. However, the interviewer could only prompt children using a listed unique detail if the child had mentioned that detail spontaneously.

## Coding

Coders first tallied the number of general and cued invitations posed while discussing the [blinded] Activities. Next, children's mentions of each detail-type from the activities (fixed, variable, and new) were recorded. Coders additionally recorded the specificity of the child's report: *item level* reports were mentions of general details that usually occurred (e.g. 'Then we heard a story'), *instantiation level* reports were mentions of the specific detail presentation in an individual episode (e.g. 'One time we heard a story *about an elephant*'). All mentions of details (across all detail-types and specificity levels) were then matched to which prompt-type (general or cued invitation) had been posed to elicit them.

If children linked a variable or new instantiation to a particular episode (e.g., 'The *last* time we heard a story about an elephant'), coders recorded whether or not the detail was accurately attributed to the correct episode. Accuracy scores were then computed as proportions of the total instantiations reported per prompt-type (e.g., accurate instantiations reported to general invitations were divided by all instantiations reported to general invitations). Thus, the term 'accuracy' is used throughout this paper to refer to *source* accuracy, not confabulations. Since fixed details had identical instantiations in each episode, accuracy was only computed for variable and new details. However, few children linked new instantiations ( $n = 39$ ) to a particular episode, so they were collapsed with variable instantiations to derive children's overall accuracy score. For both detail types, the chance of accurately attributing to the correct occurrence is 1/4 or 25%.

All coders were blind to participant ages and the hypotheses of the study. For reliability purposes 15% of transcripts were double-coded. Reliability in interviewer prompt coding ranged from 88% - 100% agreement. Cohen's Kappa was calculated for the categorisation of the interviewer prompts and agreement ranged from .75 - 1.00 ( $M = .89$ ). Kappa was also calculated for identification of detail-types present in children's reports and their accuracy. Agreement ranged from .73 - 1.00 ( $M = .88$ ). Disagreements were resolved through discussion.

## Results

### Preliminary Analyses

Before examining the effects of prompt-type on children's reports, we conducted exploratory analyses on the number of each type used by the interviewer. A paired-samples *t*-test showed more general ( $M = 9.76$ ,  $SD = 3.88$ ) than cued ( $M = 3.09$ ,  $SD = 1.86$ ) invitations were posed on average per interview,  $t(202) = 22.57$ ,  $p < .001$ ,  $d = 2.47$ . The ratio between general and cued invitations observed here is similar to the pattern naturally delivered by investigative interviewers in Lamb et al. (2003) (i.e., an average of 15.81 invitations per interview, with 5.36 being cued). To control for the distribution of prompt-types, the number of details reported to each prompt-type was divided by the number of those prompts delivered (e.g., the number of items reported to general invitations were divided by the number of general invitations asked).

### **Differential effects of prompt-type on specificity and type of information**

**Specificity level.** To test the hypotheses that general invitations would elicit the episodic details common to the script (e.g., 'we heard a story, we did a puzzle'), while cued invitations would elicit the episodic details unique to individual episodes (e.g., 'she gave us paper fans to refresh us') we inspected the specificity level children reported per general and cued invitation. Analyses were 2 (prompt-type: general, cued) x 2 (specificity: item, instantiation) x 2 (delay: shorter, longer) x 2 (age: younger, older) mixed ANOVAs<sup>1</sup>, the latter two factors being between-subjects.

There were main effects of prompt-type and specificity on total details reported per prompt,  $F_s \geq 10.65$ ,  $p_s \leq .001$ ,  $\eta_p^2$ s  $\geq .05$ , which were qualified by an interaction,  $F(1, 199) = 63.95$ ,  $p < .001$ ,  $\eta_p^2 = .24$  (see Figure 1, left panel). As predicted, children reported more items per each general than cued invitation,  $t(202) = 13.80$ ,  $p < .001$ ,  $d = .98$ , but more instantiations per each cued than general invitation,  $t(202) = 3.45$ ,  $p = .001$ ,  $d = .25$ . Age also interacted with specificity,  $F(1, 199) = 7.59$ ,  $p = .006$ ,  $\eta_p^2 = .04$ . Older children reported more details per prompt at the instantiation level ( $M = 1.65$ ,  $SD = 0.99$ ) than younger children ( $M = 1.09$ ,  $SD = 0.62$ ),  $t(139.33) = 4.91$ ,  $p < .001$ ,  $d = .70$ , but did not differ in reporting at the item level,  $t(201) = 0.30$ ,  $p = .77$ . No other main effects or interactions were significant,  $F_s \leq 2.51$ ,  $p_s \geq .15$ .

**Type of information reported.** To more deeply explore the hypothesis that general invitations tend to elicit script elements, while cued invitations are more likely to obtain episode-

specific information when prompting about individual episodes of repeated events, we repeated tests separately for children's reports of fixed, variable, and new details. Fixed details occur exactly the same way every time, and thus could be represented in children's scripts, while variable instantiations and new details (at both the item and instantiation levels) are unique to individual episodes (see Appendix A).

**Fixed.** The ANOVA conducted on the average number and specificity of fixed details reported per prompt revealed main effects of prompt-type and specificity,  $F_s \geq 77.86$ ,  $ps < .001$ ,  $\eta_p^2s \geq .28$ , qualified by an interaction,  $F(1, 199) = 39.22$ ,  $p < .001$ ,  $\eta_p^2 = .17$ . The middle panel in Figure 1 shows that both general invitations and cued invitations were more likely to elicit fixed instantiations than fixed items,  $t(202) = 4.94$ ,  $p < .001$ ,  $d = .39$  and  $t(202) = 9.00$ ,  $p < .001$ ,  $d = .65$ , respectively. However, examination of the effect sizes demonstrates a notably larger effect for cued than general invitations. Age interacted with specificity level in the same manner as for total details,  $F(1, 199) = 6.49$ ,  $p = .012$ ,  $\eta_p^2 = .03$ . Both age groups ( $M_{older} = 0.24$ ,  $SD_{older} = 0.23$ ;  $M_{younger} = 0.19$ ,  $SD_{younger} = 0.18$ ) reported similar amounts of information at the item level,  $t(161.96) = 1.86$ ,  $p = .07$ . At the instantiation level, older children reported more fixed information ( $M = 0.59$ ,  $SD = 0.37$ ) than younger children ( $M = .38$ ,  $SD = .25$ ),  $t(147.34) = -4.63$ ,  $p < .001$ ,  $d = .69$ . Age interacted with prompt-type,  $F(1, 199) = 10.37$ ,  $p = .001$ ,  $\eta_p^2 = .05$ . Older children provided more fixed details per general invitation ( $M = 0.78$ ,  $SD = 0.42$ ) than younger children ( $M = 0.49$ ,  $SD = 0.29$ ),  $t(147.05) = 4.38$ ,  $p < .001$ ,  $d = .65$ . Both age groups ( $M_{older} = 0.11$ ,  $SD_{older} = 0.18$ ;  $M_{younger} = 0.07$ ,  $SD_{younger} = 0.12$ ) performed similarly to cued invitations,  $t(152.07) = 1.82$ ,  $p = .07$ . No other effects were significant,  $F_s \leq 3.17$ ,  $ps \geq .08$ .

**Variable.** The ANOVA for variable details showed a main effect of prompt-type,  $F(1, 199) = 47.88$ ,  $p < .001$ ,  $\eta_p^2 = .19$  but not specificity,  $F(1, 199) = 1.53$ ,  $p = .23$ . Prompt-type interacted with specificity,  $F(1, 199) = 86.33$ ,  $p < .001$ ,  $\eta_p^2 = .30$ . As shown in the right panel of Figure 1, children reported a higher number of variable details at the item level to general invitations than cued invitations,  $t(202) = 15.07$ ,  $p < .001$ ,  $d = 1.13$ , but they reported a higher number of variable details at the instantiation level to cued invitations than general invitations,  $t(202) = 2.21$ ,  $p = .03$ ,  $d = 0.16$ . No other effects were significant,  $F_s \leq 3.34$ ,  $ps \geq .07$ .

*New.* Only a quarter (50) of children ever reported a *new* detail at any level in response to any prompt-type, so ANOVA was not an appropriate method to analyse them. We collapsed item and instantiation level reports and examined the frequency that children reported new details in response to general versus cued invitations. Forty-three provided new details to a general invitation (33 children provided one new detail, nine provided two details, and one provided three details; there were four across the series), and ten provided new details to a cued invitation (nine children provided one detail, one child provided two details). Only three children provided new details to both prompt-types. Of the children who reported new details, the proportion who reported one or more to a general invitation was significantly higher than the proportion who reported one or more to a cued invitation,  $z = 6.61, p < .001$ .

**Interim summary: Specificity and type of information reported.** In response to general invitations (as compared to cued), children reported more items, more variable details at the item level, more new details overall, and older children provided more fixed details than younger children. In response to cued invitations (as compared to general), children reported more instantiations, fixed instantiations to a greater degree, and more variable details at the instantiation level. There were no age differences in response to cued invitations. There were no effects of delay.

#### **Accuracy of reported instantiations**

The second overarching prediction was that children would be more accurate in attributing reported instantiations to the correct episode when prompted with cued rather than general invitations, due to the proposed refocusing effects of the cued invitation. Roughly a quarter of the children ( $n = 54$ ; 27%) reported only fixed details, which occurred in every episode of the [blinded] Activities, so an accuracy score could not be calculated for them. Of the remaining children, 104 linked variable and/or new instantiations to an episode in response to a general invitation, and 149 did so in response to a cued invitation. Of these children, just 75 linked instantiations to an episode in response to *both* general and cued invitations.

To utilise as much of the sample as possible, we conducted a one-sample *t*-test comparing cued invitation accuracy scores to the mean accuracy of general invitations. Children were

significantly more accurate to cued ( $M = .63$ ,  $SD = .41$ ) than general invitations ( $M = .45$ ,  $SD = .43$ ),  $t(148) = 5.16$ ,  $p < .001$ ,  $d = .40$ . A paired-samples  $t$ -test conducted on the 75 children with accuracy scores for *both* general and cued invitations confirmed that these children's responses were more accurate to cued ( $M = .68$ ,  $SD = .38$ ) than general invitations ( $M = .43$ ,  $SD = .42$ ),  $t(74) = 3.89$ ,  $p < .001$ ,  $d = 0.45$ .

To examine effects of delay ( $n_{shorter} = 93$ ,  $n_{longer} = 56$  for cued invitation accuracy;  $n_{shorter} = 67$ ,  $n_{longer} = 37$  for general invitation accuracy) and age ( $n_{younger} = 81$ ,  $n_{older} = 68$  for cued invitation accuracy;  $n_{younger} = 63$ ,  $n_{older} = 41$  for general invitation accuracy) on children's accuracy, a univariate ANOVA was conducted for each prompt-type. The ANOVA for general invitations ( $n = 104$ ) showed a main effect of delay,  $F(1, 100) = 10.28$ ,  $p = .002$ ,  $\eta_p^2 = .09$ , which was qualified by an interaction with age group,  $F(1, 100) = 5.32$ ,  $p = .02$ ,  $\eta_p^2 = .05$ . A follow-up  $t$ -test showed younger ( $M = .66$ ,  $SD = .41$ ) and older children ( $M = .51$ ,  $SD = .39$ ) had similar accuracy across a shorter delay,  $t(65) = 1.59$ ,  $p = .12$ . For children interviewed after a longer delay, the  $t$ -test approached significance, demonstrating a trend for older children ( $M = .43$ ,  $SD = .39$ ) to outperform their younger counterparts ( $M = .16$ ,  $SD = .36$ ) at longer delays,  $t(35) = 1.81$ ,  $p = .07$ . There was no main effect of age,  $F(1, 100) = .36$ ,  $p = .55$ . The ANOVA for cued invitations ( $n = 149$ ) showed no significant effects of delay or age on children's accuracy,  $F \leq 2.70$ ,  $ps \geq .10$ .

**Interim summary: Accuracy of information reported.** A quarter of children reported only details that were common across episodes. For children who reported unique details, they were more accurate in doing so in response to cued than general invitations. Delay affected accuracy to general invitations (children were less accurate after a long than short delay), but did not affect accuracy to cued invitations. There were no main effects of age on accurate attributions for either prompt-type.

### Discussion

The current study was the first to demonstrate differing effects of general and cued invitations on children's reports of individual episodes of a repeated event. In line with the primary predictions, children had a tendency to respond with episodic information that was common across all episodes (e.g., 'We met a noisy animal') in response to general invitations and episode-specific



details (e.g., 'she had her friend the kangaroo') in response to cued invitations. Cued invitations elicited greater source accuracy (i.e., linking co-occurring details together correctly) than general invitations, and thus may be most beneficial when following up on a broad account. The effects of each prompt-type are discussed individually. We then consider secondary questions around children's age and the interview timing after the event (delay).

### **General Invitations**

Similar to interviews conducted in the field (Lamb et al., 2003), the current interviewer (who was extensively trained) posed more general than cued invitations. Considering the number of details reported per prompt, children provided more item level information (for both fixed and variable items) to general than cued invitations. The same pattern of results was seen for fixed (but not variable) instantiations. These findings support the hypothesis that general invitations elicit more typically-occurring details than cued invitations.

When children experience an event repeatedly, they create scripts for how the event usually occurs (Fivush, 1984; Hudson et al., 1992). These scripts strengthen memories for the details that occurred similarly across episodes of the event (Connolly & Lindsay, 2001; Powell et al., 1999). In the current study, children's scripts encompassed all item level information, since these broad category details occurred in every episode of the event. For fixed details, any child's script would be equally likely to contain the item (e.g., meeting a puppet) or the instantiation (e.g., named Boo) since both occurred identically across all episodes. General invitations are broad, asking children to recall numerous happenings from an episode (e.g., 'Tell me everything that happened that time'). When posed with such broad questions, children likely retrieve the first happenings that come to mind. Since script information for what has often happened is well remembered (Connolly & Lindsay, 2001; Hudson, 1990; Powell et al., 1999), it is unsurprising that more script components were reported to these broad, general invitations. In forensic situations, fixed details might include the timing of the abuse (e.g., evening) or situational parameters (e.g., mum being at work). While variable *items* are represented at the script level, their *instantiations* differ each episode. For example, in allegations of repeated sexual abuse, clothing being removed may be a common

element, but the specific type of clothing may vary in each episode. As expected, variable items, but not instantiations, were more often reported to general than cued invitations.

While scripts contain information about typically occurring details, they also help to highlight deviations, which become noted due to their infrequency (Hudson et al., 1992; Farrar & Boyer-Pennington, 1999). In the current study, new details deviated from the typical event happenings, but their inclusion in an episode did not change the outcome of the rest of the episode (*discrete* deviations irrelevant to the goal; see Connolly, Gordon, Woiwod & Price, 2016, Experiment 3; Davidson & Hoe, 1993). When atypical details do not affect the remainder of an event, they are less well-remembered than when they do (Hudson, 1988). Our purpose for including discrete deviations in the event paradigm was to increase variability across the repeated episodes. We avoided using continuous deviations (which disrupt the script) in the current study in order to maintain the focus on prompt-types rather than effects of various details. Because the new details used in the current study were plausible (they were atypical for the script but not implausible; e.g., see Pezdek, Finger, & Hodge, 1997) we expected they would be reported in a similar manner as script elements. Indeed, in the current study, more new details were elicited by general (than cued) invitations.

### **Cued Invitations**

Cued invitations were predicted to elicit more episode-specific details than general invitations, a hypothesis supported by children's reporting of more instantiation level information to cued (than general) invitations. This effect was largely driven by reports of variable instantiations, which demonstrated the same interaction when analysed separately. While general invitations were useful for getting the overall picture, cued invitations requested more detail about pre-disclosed aspects. Orbach and Lamb (2000) suggested that the cue (that is, the pre-disclosed detail) serves to scaffold children's retrieval by focusing their attention. They found that cued invitations elicited proportionally more central (as opposed to peripheral) event details than general invitations. Similarly, Lamb et al. (2003) asserted that cued invitations are useful as they break down an episode into smaller components (e.g., 'Tell me more about *the part with the koala puppet*'). Focusing children on one aspect of the episode enhances the likelihood that children will

continue to report specific instantiations from the same episode, rather than being distracted and drifting to details that occurred regularly.

Support for the notion that the use of a pre-disclosed detail re-captures children's attention comes from Brubacher et al. (2013). In their field study, when forensic interviewers adopted children's words for episodes of a repeated event (in contrast to using the interviewer's own language), children were more responsive to the interviewer's prompts. Similarly, it has been suggested that reiterating the child's word in a cue helps the child feel listened to and comfortable, serving to build rapport between the child and interviewer (Evans & Roberts, 2009). Improved rapport may reduce social demand characteristics (such as the pressure to answer an adult interviewer even when the answer is unknown) so that children are free to report what they accurately recall.

Details reported in response to cued invitations were indeed attributed to the correct episode of the [blinded] Activities more often than those reported in response to general invitations. Accuracy results were largely driven by children's recall of variable instantiation level information, since new details were infrequently recalled. Work comparing cued and general invitations has largely been field-based to date, and thus accuracy often has not been assessed. Two laboratory-based exceptions measured children's accuracy, both examining reports of a non-repeated event. Similar to current results, Horowitz (2009) found mixed prompts (combining direct and open questions) reduced omission errors relative to open prompts (i.e., general invitations). When the mixed prompt was specifically phrased as a cued invitation, these errors were further reduced. In contrast to Horowitz and the current results, Evans and Roberts (2009) found that expansion paraphrases (comparable to cued invitations) did not increase accuracy over other open-ended prompts, but the latter included some formats of cued invitations. Evans and Roberts did find that expansion paraphrases yielded reports containing six times the number of accurate details compared to paraphrasing the child in a yes-no question. It is likely that their accuracy results largely reflect differences between open-ended prompts and yes/no questions, since it is well documented that responses to open-ended prompts are more accurate than responses to yes-no questions (Brown et al., 2013; Larsson & Lamb, 2009).

### Age and Delay Effects

Previous work by Lamb et al. (2003) found that older children provided more information to both general and cued invitations than younger children. In the current study, similar developmental improvements to each prompt-type were found; however, age interacted with the specificity of the information provided. Older children reported more fixed instantiation level details than younger children, but they did not differ in reporting fixed item level details. Item level information is represented in scripts, which strengthen memories for both younger and older children (Hudson & Nelson, 1986; Hudson et al., 1992), so it is unsurprising to see both age groups recall comparable amounts of item level information.

General invitations elicited a higher number of fixed details from older than younger children, but each age group provided similar numbers of fixed details to cued invitations. The provision of a cue likely assisted the younger children to focus on the event component of discussion and provide additional fixed details. This pattern of results supports Lamb et al.'s (2003) suggestion that cued invitations structure children's recall, in particular serving to enhance young children's ability to reconstruct past events.

In exploratory analyses investigating the effect of delay on responses to each prompt-type, the current study found delay to have no influence on the specificity and type of information reported. This result is likely due to relatively short delays (even in the 'longer' condition) in the current study when compared to previous research on delay (e.g., Flin, Boon, Knox, & Bull, 1992; Lamb et al., 2000; Pipe, Gee, Wilson & Egerton, 1999; Powell & Thomson, 1996; 2003).

Accuracy results were impacted by delay. Specifically, when responding to general invitations after a short delay, children of all ages performed similarly. However, at a longer delay, the older children fared better than the younger. When responding to cued invitations, children of all ages performed similarly at both delays. Previous examinations of responses to open-ended prompting about non-repeated (and thus non-scripted) events have similarly shown that younger children do not give less accurate responses than their older counterparts after at a short delay; however, older children provide more accurate responses after a longer delay (Flin et al., 1992, Oates & Shrimpton, 1991). Studies specifically measuring *source* accuracy for children reporting

on episodes from a repeated event have included more disparate delays than those examined in the current study, making comparisons difficult. For example, Powell and Thomson (1996; 1997) compared responses at one versus six week delays, while the current study compared one versus two weeks. In contrast to the current study, where age differences were only seen after longer delays, Powell and Thomson found that age differences were less prominent at longer than shorter delays. This incongruity is likely a consequence of the differing definitions of a 'long' delay, since longer delays in the current study more closely align with shorter delays in Powell and Thomson's work. Indeed, children at a two week delay in the current study ('longer') showed a similar pattern of results as children in the one week delay in Powell and Thomson's studies ('shorter'): the older children were more accurate than the younger.

### **Limitations**

Several limitations impacting the generalisability of our findings to forensic interviews should be considered. First, the repeated event was innocuous, where discussion topics in forensic interviews are likely unpleasant. Accordingly, children's readiness to describe abusive acts in specific detail may be complicated in forensic interviews. Despite this limitation, findings are similar to the patterns observed in Lamb and colleagues' (2003) field interviews. Second, interviews were conducted up to two weeks after the final episode of the event. In forensic settings, interviews may occur months or years after offences have been committed, so the accuracy and amount of information reported may be lower than current results (Lamb et al., 2000; Oates & Shrimpton, 1991). Third, child abuse may occur more frequently and over a longer timeframe than was examined in the current study. These factors further confound children's ability to accurately recall specific episodes of ongoing abuse (Price, Connolly & Gordon, 2006). Nevertheless, the results are strongly consistent with theoretical predictions and existing literature.

### **Conclusions**

Our finding that cued invitations elicited more episode-specific and more accurate information from children should not signify that interviewers should forsake general invitations. Discussing an individual episode from a repeated event is a difficult task for children (Connolly & Lindsay, 2001; Hudson & Nelson, 1986; Powell et al., 1999), and the current results indicate that

general and cued invitations offer different forms of assistance. General invitations were more successful at eliciting the broad components of an event episode, and thus may be necessary early in an interview to elicit plentiful information about the happenings of the episode. Cued invitations are useful to follow-up previously mentioned details, in order to elicit more specific information about them. The efficacy of each prompt-type should be considered when interviewing children about repeated events, such as ongoing abuse.

ACCEPTED MANUSCRIPT

**Footnote**

<sup>1</sup>Since item and instantiation data showed significant skew and kurtosis, Related-Samples Wilcoxon Signed Rank non-parametric tests were also conducted. Each non-parametric test showed the same pattern of results as the ANOVAs. Given that ANOVA is relatively robust to violations of normality, we report the ANOVA results here for ease of interpretation.

ACCEPTED MANUSCRIPT

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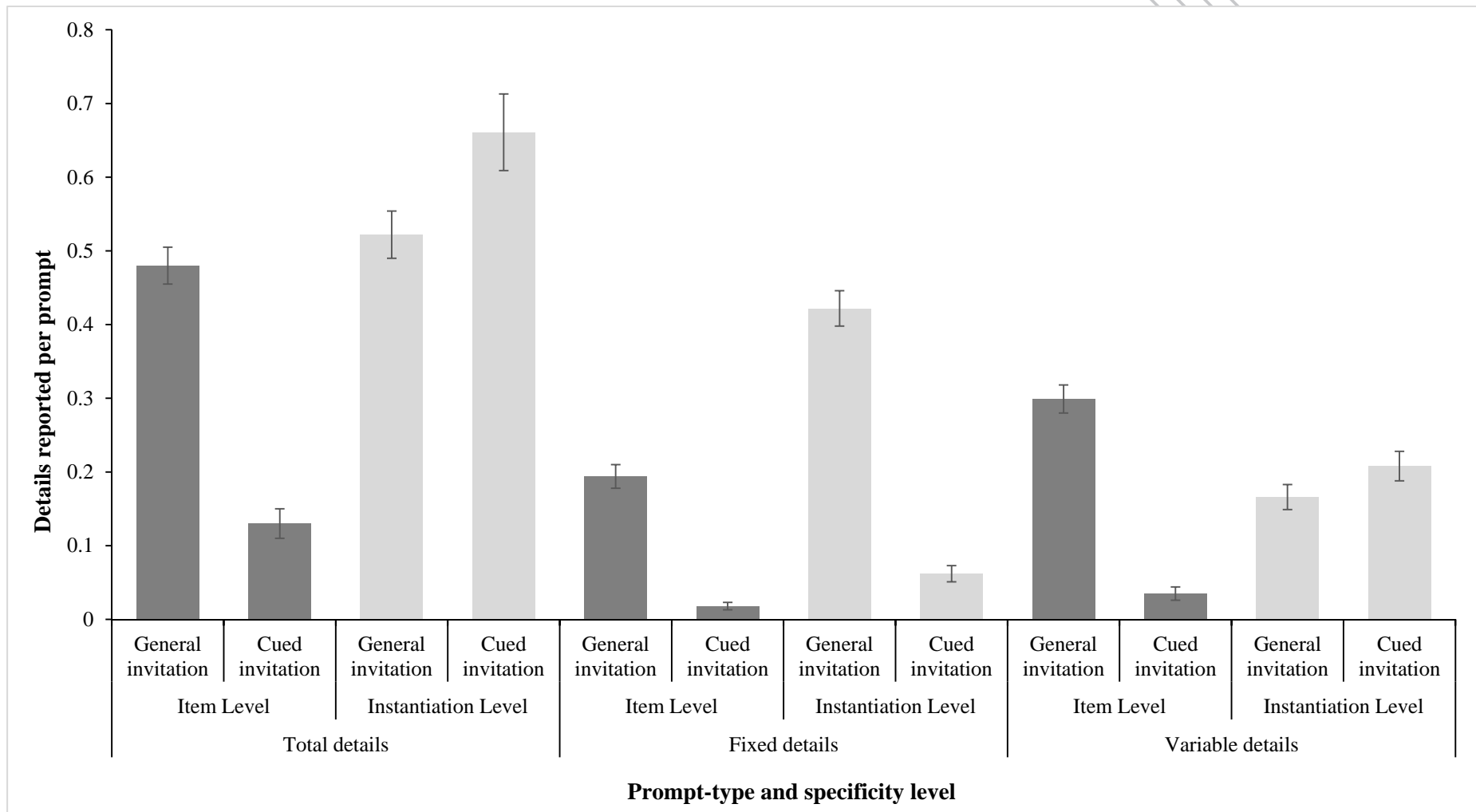


Figure 1. Number of details reported per general and cued prompt, by specificity level and detail type.  
*Note.* Bars represent standard errors.

## Appendix

Sample list of items during the [blinded] Activities from one counterbalanced version.

Item level	Instantiation level			
	Episode 1	Episode 2	Episode 3	Episode 4
<i>Fixed items</i>				
Poster design	Red	Red	Red	Red
Leader's bag for activities	Backpack	Backpack	Backpack	Backpack
Warm-up activity	Jump	Jump	Jump	Jump
Children sit on	Cardboard	Cardboard	Cardboard	Cardboard
Koala puppet's name	Boo	Boo	Boo	Boo
Manner of showing story	Book	Book	Book	Book
Body part relaxed	Legs	Legs	Legs	Legs
Music for relaxing	Waves	Waves	Waves	Waves
Container for stickers	Pencil case	Pencil case	Pencil case	Pencil case
<i>Variable items</i>				
Badge worn	Leaf	Letter	Jellybean	Feathers
Noisy animal	Kangaroo	Goanna	Kookaburra	Dingo
Content of story	Cat	Monsters	Police lady	Elephant
Volunteer to hold up story	Child A	Child B	Child C	Child D
Utensil to write volunteer name	Lipstick	Crayon	Chalk	Texta pen
Sticker design	Bees	Chicken	Flower	Star
<i>New items</i>				
Leader's cloak	Red			
Leader's tablecloth		Newspaper		
Puzzle			Clown eating	
Method to refresh children				Paper fans

## GENERAL VERSUS CUED INVITATIONS

### Abstract

The ability to describe individual episodes of repeated events (such as ongoing abuse) can enhance children's testimony and assist the progression of their cases through the legal system. Open-ended prompts have been advocated as a means to assist children in accurately retrieving information about individual episodes. In the current study, two subtypes of open-ended prompts (cued and general invitations) were compared for their effects on 5–9-year-olds' ( $n = 203$ ) reports about individual episodes of a repeated event. Interviews occurred 1-2 weeks after the last of four event sessions. Cued invitations assisted children to provide specific details about episodes of the event, while general invitations were useful to elicit more broad happenings of the episodes. The accuracy of responses to general invitations was similar for children of all ages up to one week after the event, but at a longer interview delay younger children were less accurate than older children. There were no differences in the accuracy of responses to cued invitations as a function of age or interview delay. Results suggest that interviewers tasked with eliciting accounts of individual episodes from a repeated event, such as ongoing abuse, should consider the differential efficacy of each prompt-type on children's reports.

*Keywords:* children; repeated event; open-ended invitations; episodic memory; interviewing



## GENERAL VERSUS CUED INVITATIONS

### Appendix

Sample list of items during the [blinded] Activities from one counterbalanced version.

Item level	Instantiation level			
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<i>Fixed items</i>				
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Children sit on	Cardboard	Cardboard	Cardboard	Cardboard
Koala puppet's name	Boo	Boo	Boo	Boo
Manner of showing story	Book	Book	Book	Book
Body part relaxed	Legs	Legs	Legs	Legs
Music for relaxing	Waves	Waves	Waves	Waves
Container for stickers	Pencil case	Pencil case	Pencil case	Pencil case
<i>Variable items</i>				
Badge worn	Leaf	Letter	Jellybean	Feathers
Noisy animal	Kangaroo	Goanna	Kookaburra	Dingo
Content of story	Cat	Monsters	Police lady	Elephant
Volunteer to hold up story	Child A	Child B	Child C	Child D
Utensil to write volunteer name	Lipstick	Crayon	Chalk	Texta pen
Sticker design	Bees	Chicken	Flower	Star
<i>New items</i>				
Leader's cloak	Red			
Leader's tablecloth		Newspaper		
Puzzle			Clown eating	
Method to refresh children				Paper fans

## GENERAL VERSUS CUED INVITATIONS

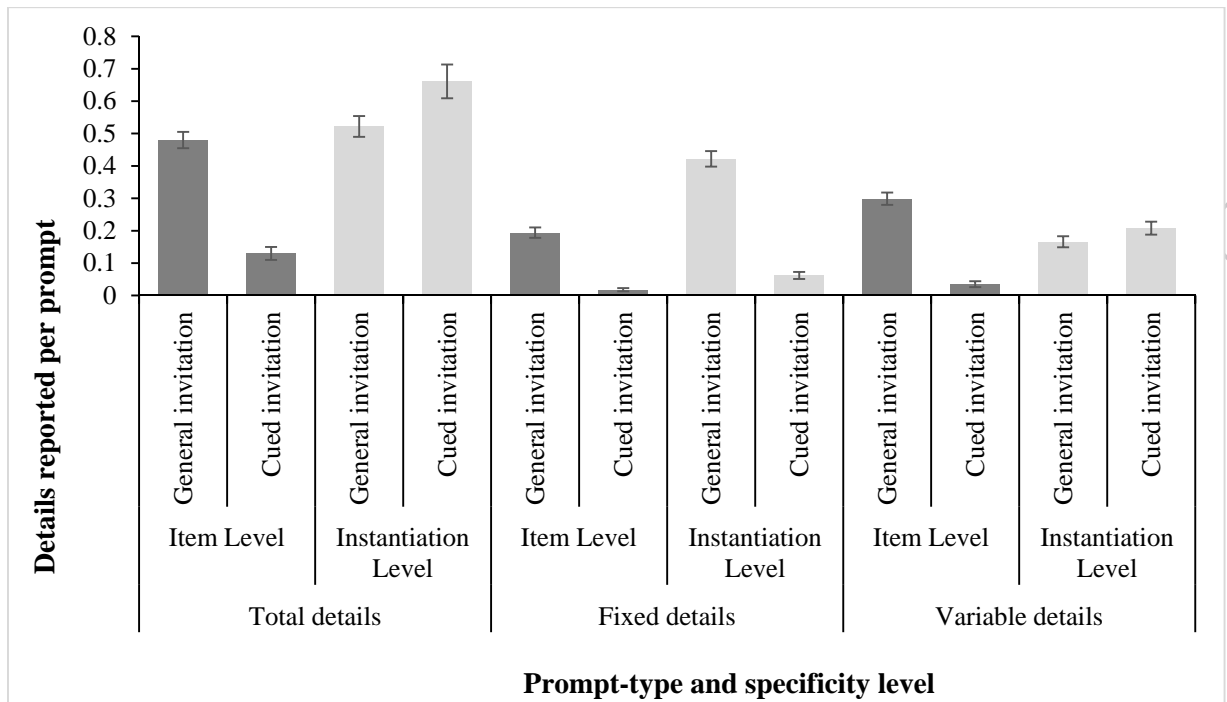


Figure 1. Number of details reported per general and cued prompt, by specificity level and detail type.

*Note.* Bars represent standard errors