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Running Head: CHILDREN'S SUGGESTIBILITY.

The effect of a suggestive interview on children's memory of a repeated event: Does it matter whether suggestions are linked to a particular incident?

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Abstract

This study examined the impact of linking misleading information to a particular occurrence of a repeated event. Children aged 5- to 6-years took part in the same staged event four times and 16 target details varied in each occurrence (e.g., the colour of a cloak varied each time). Three days or three weeks later they were asked questions, some of which included false information, about the final occurrence. The next day, the children were required to recall what happened in the final occurrence. Compared to children whose biasing interview was not focused on any particular occurrence of the repeated event, linking the biasing interview to the final occurrence increased the number of suggested details that were reported. Interestingly, the children whose biasing interview was not focused on any occurrence were also less likely to report the false suggestions than another group of children who had only experienced the event once and whose biasing interview was linked to that single occurrence. These findings have implications for how lawyers and investigative interviewers question children about multiple incidents.

The effect of a suggestive interview on children's memory of a repeated event: Does it matter whether suggestions are linked to a particular incident?

The issue of children's ability to remember a repeated event has important implications for theories of memory as well as for legal systems. In many trials in which children are asked to testify, the matter involves a repeated offence (e.g., acts of sexual or physical abuse that occurred on numerous occasions). In normal legal proceedings, for an alleged offender to be charged and convicted in relation to a repeated offence, at least one specific occurrence must be identified with reasonable precision with reference to place and time (see *S v. R.* 1989). For example, a child who has experienced repeated occurrences of abuse may be asked to remember contextual factors related to at least one of the occurrences, such as where the incident occurred, what clothing was worn, what the alleged perpetrator did and said during the occurrence of abuse and where members of the family were. The act of identifying an occurrence and distinguishing it from other occurrences is a difficult task for any witness after a delay in time, however it is especially difficult for child witnesses, whose knowledge and understanding of time is not as well developed as that of adults (Friedman, 1993). Given that children can be susceptible to interviewer suggestions when asked yes/no questions about items that varied across occurrences (Connolly & Lindsay, 1998; Powell & Roberts, 2000), it is important for lawyers and investigative interviewers to consider research which examines ways of minimising this error in children's accounts. In the present study, we assessed the impact of different types of suggestive questions that contained misleading information on children's reports of a variable repeated event. Specifically, we investigated whether linking the false suggestion to a particular occurrence of the event has a more detrimental impact on children's reports of this occurrence than when the suggestions are not directly linked to any of the occurrences.

Remembering an occurrence of a repeated event is a complex process which is determined by a wide range of factors including the age of the child, the time between the event

and the interview, and the nature of the event details being recalled. Further, when comparing memory of an occurrence of a repeated event to that of a single event, repetition has both beneficial and detrimental effects on recall. For instance, after multiple occurrences of an event, details that are fixed (experienced exactly the same way during each occurrence) are strengthened in memory and are therefore well remembered over time compared to details of an event that was experienced one time only (Holliday, Douglas, & Hayes, 1999; Hudson, 1990; Powell & Thomson, 1996; Pezdek & Roe, 1995). However, with regards to children's recall of details that varied across the occurrences (e.g., remembering what clothing was worn, or precisely what somebody did or said during a specified incident), repeated experience has detrimental effects on children's ability to remember a particular occurrence. Specifically, the number of correct details reported about a particular occurrence is lower than when recalling a single event and intrusions of details from other occurrences (hereafter referred to as internal intrusion errors) are common (Hudson, 1990; Powell & Thomson, 1996; Farrar & Goodman, 1992). While other errors such as the reporting of details that had not been included in any occurrence (hereafter referred to as external intrusion errors) are less likely to be reported by children who experienced a repeated versus a one-time event, the number of internal intrusion errors outweighs the number of external intrusion errors reported by children who have experienced a single occurrence. The high number of internal intrusions arise because recalling an occurrence of a repeated event involves memory of content (i.e., remembering which details were experienced in the event per se) as well as the capacity to remember the precise temporal location of details (i.e., matching the different instantiations of the details to the individual occurrences). While memory for both the content and temporal source of details declines over time, the decline is more rapid for temporal information (Powell & Thomson, 1997a).

Research, to date, has shown that the problems associated with the recall of variable details of an occurrence of a repeated event are accentuated under certain conditions. The more

frequently events are experienced, the longer the time delay between the event and the interview, and the greater the similarity between the events, the more difficult it is to keep track of which details were included in a particular occurrence (Lindsay et al., 1991; Powell & Thomson, 1996; 1997a, 1997b). Young children (i.e., 4-5 years of age) have greater difficulties in discriminating between occurrences of a repeated event than older children (Farrar & Goodman, 1992; Powell & Thomson, 1996). Further, the accuracy of children's recall of an occurrence of a repeated event is shaped by the manner in which memory is tested. When children are asked to freely report what happened in an occurrence of a repeated event, they provide few specific features that discriminate one occurrence from others in a series. In contrast, when specific questions are asked (which focus the child on aspects of the event that were likely to have varied), the child provides a greater number of correct details compared to that which is provided in response to general or open-ended questions. This is because specific questions cue the child to information that is available in memory but could not be spontaneously recalled (Dent & Stephenson, 1979). However, the number of errors increases with the use of specific questions because when the information requested is not available, the child may guess or make up a response merely to comply with the interviewer's request. The most detrimental types of specific questions are those that suggest a possible answer or incorporate false information (Powell & Thomson, 1996; Powell, Roberts, Ceci & Hembrooke, 1999). While all children are susceptible to suggestive or leading questions (Ceci & Bruck, 1993), the issue of suggestibility is particularly pertinent in relation to repeated events. This is because repeated experience can increase children's willingness to accept false information suggested by an interviewer, provided the information refers to details that varied across the series of events and is consistent with the sorts of details that were actually experienced (Connolly & Lindsay, 1999; Powell et al., 1999).

It is important to note, however, that the detrimental effect of repeated experience on children's suggestibility is not equally apparent across all question types. With yes/no

questions, children who have experienced a repeated event are clearly more vulnerable to an interviewer's suggestions than those who have experienced a single event (Connolly & Lindsay, 1998; Powell & Roberts, 2000). However, the difference in suggestibility across event groups is attenuated when children are required to generate a response about which details were included in the occurrence. The detrimental impact of repeated experience on suggestibility is more obvious in the former instance because a yes/no question may merely indicate that the suggested item is plausible or familiar to the child. With a recall task, however, the child must search memory to retrieve the correct response. If there are other familiar items that are available in memory to select from, the likelihood of choosing the false item is reduced. In some cases (i.e., when there is a relatively large pool of familiar items still available in memory), children who experience a repeated event may be no more likely to select the suggested detail compared to children who experience a single event, even though the suggestion may seem more plausible to them (see Powell et al., 1999).

One limitation of previous studies, however, is that children's suggestibility about an occurrence of a repeated event has always been examined using only one experimental procedure. In most previous work; (a) the child was given a biasing interview where he/she was asked questions about a to-be-recalled (target) occurrence of the event, (b) the questions in the biasing interview included false information, and (c) the child was subsequently asked to recall what happened in the target occurrence. It is yet to be determined whether these findings generalise to other situations such as when the biasing questions are asked about the event *per se*, and not related to any particular occurrence. It is possible that such a minor change in procedure may greatly reduce the impact of misleading questions on children's recall, due to a reduction in social demand characteristics and/or memory contamination. When an interviewer's false suggestions are not linked to any occurrence, there may be less pressure on the child to acquiesce to the suggestion because an alternative response (when recalling the target occurrence) may not necessarily contradict the interviewer's suggestion (i.e., the details

reported by the interviewer in the biasing interview could have feasibly been included in another occurrence of the event). Further, if the child does not have the target occurrence in mind when the false suggestions are made it is less likely that the child's memory of the target occurrence will be contaminated.

In the current study, we examined whether removing the focus of a biasing interview on a to-be-recalled (target) occurrence decreases the likelihood that the false information will be included in the child's recall of the occurrence. Five to six-year-old children took part in a staged event four times whereby details varied in each occurrence of the event. Three days or three weeks later, the children were asked questions that included false details, but the interview did not focus on any particular occurrence of the event. The following day, the children were required to recall the details that occurred in the target occurrence of the event. The recall performance of these children was compared to that of children in two linked conditions; a group who participated in the repeated event, but where the biasing interview was related specifically to the target occurrence of the event, and a group who participated in only a single occurrence of the event and where the biasing information was obviously linked to the event. Only one single-event group was needed because in this case, the suggestion must of necessity be linked to the (only) occurrence.

The purpose of the above design was to allow two issues to be tested. First, comparison of responses across the two repeated-event groups allowed the precise effect of linking suggestions to the target occurrence to be examined. The single-event condition was included to provide an interesting point of comparison: If linking the suggestions to the target occurrence has a detrimental effect on children's suggestibility, it would be interesting to see whether this effect could outweigh the detrimental effect of repeated experience on suggestibility for variable details. The inclusion of a control group who experienced a single occurrence of the event (where the suggestions were linked to this occurrence) would permit such a comparison.

Method

Design

Children aged 5-6 years participated in one or four occurrences of a scripted event and were given a biasing interview (incorporating true and false details about the event) after either a 3-day or 3-week delay. The children at each retention interval were divided into three groups that differed depending on the frequency of the event and/or whether the interview was explicitly linked to one of the occurrences. One of the groups (referred to as the single/linked group) experienced a single event and the suggestions were obviously linked to that event. Another group (referred to as the repeat/linked group) experienced a repeated event and the suggestions were linked to the final occurrence. Finally, a third group (referred to as the repeat/not linked group) experienced a repeated event and the suggestions were not linked to any occurrence. The next day, the children were asked to recall the instantiation (i.e., the particular version of the detail) for each item that was included in the target (final or single) occurrence to examine whether there were differences between the groups in the uptake of false suggestions. The design employed was a 3 (Event condition; Single/linked, repeat/not linked, repeat/linked) x 2 (Retention interval; 3 days vs. 3 weeks) with both factors being manipulated between- subjects.

Participants

The participants were selected from a large pool of participants who provided data for this experiment and those reported in two other papers (Powell & Roberts, 2000; Roberts & Powell, 1999). They were recruited through letters to parents that were distributed by 15 primary school teachers in 4 outer Melbourne metropolitan schools (all from the same predominantly middle-class region). The initial sample included 193 children, however 39 children were excluded because they did not attend at least one of the occurrences and/or interviews. The final subject pool consisted of 153 children aged 5- to 7-years (M age = 5 years, 8 months; SD in months = 4.20, age range = 5 years, 1 month to 7 years, 0 months). This

experiment required only 93 of these children (M age = 5 years, 8 months, SD in months = 4.16; age range = 5 years, 1 month to 6 years, 8 months); the remainder of the subject pool received a different experimental procedure that was not the focus of the current study. Children were assigned to the experimental conditions pseudo-randomly to ensure that each Event condition x Retention interval cell were equated for age (in months) and gender.

Materials

Each occurrence of the event consisted of 16 target items that were administered in the same temporal order. For the children who participated in the repeated event, all items were “variable” in that a new instantiation represented the item in each occurrence across the series. For example, the children received a sticker in each occurrence, however the theme of the sticker (e.g., dinosaur, flag) differed across the occurrences. In contrast, the children who received the single event were obviously only exposed to one instantiation. Table 1 presents the full set of target items and possible instantiations that were used to make up the event.

Insert Table 1 here

To control for item effects, the order and choice of instantiations that were selected to make up the event, the biasing interview and the final interview varied across the event conditions. Five sets of items were created (A, B, C, D, and E) in which each item was represented by a different instantiation; these are presented in full in Table 1. Half of the children who received the single event experienced Set B and Set C was used as the suggested-false instantiations, and the other group experienced Set D and Set B was used as the suggested-false instantiations. Half of the children in each of the repeated event conditions experienced Sets CDBE in that order, and Set A was used as the suggested-false instantiations; the other group experienced, in order, Sets ABDC and Set E were the suggested-false instantiations. The assignment of true/false instantiations that were suggested in the biasing

interview were also counterbalanced across the event conditions so that each item in the event was equally often referred to as a true and false suggestion in the biasing interview. Refer to Powell et al. (1999) for a full rationale of this design.

Procedure

The Event

The event was referred to as the "Deakin Activities" and was administered by a research assistant in the children's regular classroom. The four occurrences in the repeated event were evenly spaced over two weeks and were always carried out at the same time of day. On the first (or single) occurrence, the confederate said "I've called it the Deakin Activities because some people at a place called Deakin University helped me to get all the things ready for what we are going to do today". The 16 items for each occurrence represented various kinds of information (e.g., verbalisations, actions, objects, persons), and they centered around several activities: Listening to a story, doing a puzzle, having a rest, receiving a surprise, and getting refreshed. While these are common childhood activities, the materials were developed solely for this research and hence the children would not have had contact with them before. During the final or single occurrence of the event (referred to as the "target occurrence"), the children wore a badge which was later used to orient them to that occurrence. Teachers were instructed not to talk with the children about the activities outside the event or to inform them that they would later be interviewed about the event.

The Interviews

The children individually attended two interview sessions which were held in an isolated room at the school. All interviews consisted of a standard list of questions which were conducted by one of two interviewers (neither of whom had administered the activities), but the same person always conducted both interviews for any given child. The interviews took no longer than twenty minutes to administer.

Session 1: The biasing interview. The aim of the first session was for the interviewer to suggest instantiations that may have occurred in the event. For the single and the repeat-linked groups, some brief introductory questions were asked to determine that the children could remember the Deakin Activities and remembered wearing the badge. The interviewer then said "I'm going to ask you some questions about the day you wore the badge to the Deakin Activities". For the repeat-not linked group, the badge was not mentioned in the introduction and the interviewer merely said "I'm going to ask you some questions about the Deakin Activities". For all groups, a series of 16 questions were then asked (in random order) whereby half of the questions suggested false instantiations and half of the questions suggested true instantiations in accordance with the counterbalancing procedure described earlier. For example, if a child received a sticker of a flag in the target occurrence, a corresponding suggested-false question might be "What color was the sticker of the dinosaur?" where a dinosaur sticker was not received in any occurrence of the event. If a child received a sticker of a flag in the target occurrence, a corresponding suggested-true question might be "What color was the sticker of the flag?" Questions of this nature have successfully been used to show reliable suggestibility effects using a similar event (e.g., Powell et al., 1999). For the single-linked and repeat-linked groups, the children were reminded approximately every third question that they were supposed to be recalling the day they wore the badge to the Deakin Activities.

Session 2: The Recall Interview. The aim of the second interview session was to elicit the children's recall of the target (final or single) occurrence, so that the effect of the suggestive questions in the biasing interview could be examined across the event conditions. The interviewer initially introduced herself to the child again and explained that she needed to ask some questions (described as "some further questions" for those in the linked groups) about the day he/she wore the badge to the Deakin Activities. For each child, a series of 16 questions were then asked (in random order); one question for each of the 16 target items included in the

event. For each item, the child was required to recall the instantiation that was included in the target occurrence. Examples of these probes include: "What did you sit on the day you wore the badge to the Deakin Activities?", "What story did you hear on the day you wore the badge?", and "What part of your body did you rest that day?". Note that in this interview, the questions were focused on the "badge day" for all groups and that children were reminded every third question that they were supposed to be recalling the day they wore the badge to the Deakin Activities.

Coding

Each interview was audiotaped and transcribed verbatim for coding. Responses to the cued-recall questions were assigned to one of five categories as follows:

(i) Correct: When the instantiation (version of detail, e.g., dinosaur sticker, flag sticker) from the target (single or final) occurrence was reported.

(ii) False-suggestion: When the false instantiation that was suggested in the biasing interview was reported.

(iii) External intrusion error: When an entirely new false instantiation that had not been suggested and had not occurred in the series was reported.

(iv) Internal intrusion error: When a non-target instantiation in the series was reported (note that these errors can only be made by children in the repeated event conditions).

(v) Other responses: The final category included confusions of details from within the same occurrence, "don't know" responses, and responses where the child could not decide between various alternatives. These responses were not analysed although, for completeness, their means are represented in the table.

Children were credited with identifying a non-target or correct instantiation provided they referred to the instantiation in such a way that it could not be confused with any other instantiation. All the transcripts were first rated by a trained coder. A person who was not otherwise involved in the study then scored 10% of the transcripts representing a cross-section

from all the conditions. Inter-rater reliability was calculated by dividing the total number of agreements by the total possible number of agreements. Reliability was 96% showing that agreement was high.

Results

The main comparisons of interest are those between the group where the biasing interview was not linked to any occurrence and the linked groups (single/linked, repeat/linked). Differences between the linked groups are examined in more detail in Powell and Roberts (2000). The mean number of responses in each of the response categories are presented in Table 2.

Insert Table 2 here

The total number of correct responses were entered into a 3 (Event: single/linked, repeat/linked, repeat/not linked) x 2 (Retention interval: 3 days vs. 3 weeks) x 2 (Suggestion in biasing interview: true vs. false) analysis of variance (ANOVA) with the last factor within subjects. There were main effects of event, $F(2, 87) = 33.83, p < .0001$, retention interval, $F(1, 87) = 31.79, p < .0001$, and suggestion, $F(1, 87) = 132.93, p < .0001$. There was no difference in the number of correct answers from children in the repeat/not linked and repeat/linked groups, but children in both repeat groups gave fewer correct answers ($M_s = 6.03, 5.94, SD_s = 3.08, 2.89$ for the repeat/linked and repeat/not linked groups, respectively) than children who had experienced the event once ($M = 10.41, SD = 2.60$). All children gave a greater number of correct answers when the biasing interview was three days ($M = 8.91, SD = 3.20$) than three weeks ($M = 6.07, SD = 3.28$) after the target occurrence. In addition, there were a greater number of accurate responses to questions about the true suggestions ($M = 4.91, SD = 2.17$) than to those about false suggestions ($M = 2.59, SD = 1.92$). The effects of event and suggestion were qualified by an interaction between them, $F(2, 87) = 7.48, p = .001$, because the difference

between correct answers to the true and false suggestions was especially strong for children in the repeat/linked condition (True suggestions: $\underline{M}s = 6.19, 4.73, 3.77$ and $\underline{SD}s = 1.55, 2.05, 2.18$; False suggestions: $\underline{M}s = 4.22, 1.30, 2.16$ and $\underline{SD}s = 1.60, 1.49, 1.34$ for the single/linked, repeat/linked, and repeat/not linked groups, respectively).

The false-suggested responses were entered into a 3 (Event) x 2 (Retention interval) ANOVA. The within-subjects variable of suggestion was not included because the false-suggested responses reflected answers to false items only. There was a main effect of event, $\underline{F}(2, 87) = 4.45, p = .01$, because children in the repeat/not linked group reported fewer suggested responses ($\underline{M} = 0.58, \underline{SD} = 0.81$) than children in the two control groups ($\underline{M}s = 1.34, 1.40$, and $\underline{SD}s = 1.36, 1.40$, for the single/linked and repeat/linked groups, respectively).

The total number of external intrusion errors were entered into a 3 (Event) x 2 (Retention interval) x 2 (Suggestion) analysis of variance (ANOVA) with the last factor within subjects. There was a main effect of event, $\underline{F}(2, 87) = 6.32, p < .01$, because, although there was no difference between responses from children in the two repeat groups, they reported fewer external intrusions ($\underline{M}s = 0.63, 0.68$, and $\underline{SD}s = 1.13, 1.05$ for the repeat/linked and repeat/not linked groups, respectively), than did children in the single-linked group ($\underline{M} = 1.75, \underline{SD} = 1.87$). There was also a Retention interval x Suggestion interaction, $\underline{F}(1, 87) = 5.09, p < .03$. Specifically, at the 3-day delay, children reported more external intrusions for the false ($\underline{M} = 0.60, \underline{SD} = 1.04$) than true ($\underline{M} = 0.30, \underline{SD} = 0.59$) items, but there was no difference between the true and false items at the 3-week delay ($\underline{M}s = 0.67, 0.50$, and $\underline{SD}s = 1.08, 0.78$, for the true and false suggestions, respectively).

The total number of internal intrusion errors were entered into a 2 (Event: repeat/linked, repeat/not linked) x 2 (Retention interval) x 2 (Suggestion) ANOVA. The between-subjects event variable was not included because internal intrusion errors were only possible for children who had repeated experience. There were effects for event, $\underline{F}(1, 57) = 11.94, p = .001$, retention interval, $\underline{F}(1, 57) = 7.16, p = .01$, and suggestion, $\underline{F}(1, 57) = 18.71, p < .0001$. The

children in the repeat/not linked group reported more internal intrusions ($M = 7.32$, $SD = 2.36$) than did those in the repeat/linked group ($M = 5.13$, $SD = 2.85$). Children reported more internal intrusions when the biasing interview took place three weeks ($M = 4.63$, $SD = 4.14$) than three days after the event ($M = 3.57$, $SD = 3.29$). Finally, children responded to more of the questions about the false items with an internal intrusion ($M = 3.72$, $SD = 1.79$) than they did in response to the true items ($M = 2.52$, $SD = 1.75$).

Discussion

This study examined whether linking suggestions to a to-be-recalled (target) occurrence mediates the incorporation of those suggestions in subsequent recall of the occurrence. None of the groups were completely immune to the interviewer's suggestions, but the children who experienced the repeated event and whose suggestions were not oriented to any occurrence were significantly less likely to incorporate the suggestions into their account of the occurrence, compared to other children whose suggestions were explicitly related to the occurrence. As discussed earlier, this finding could be due to social and/or memory mechanisms. Considering social mechanisms first, the interviewer's suggestion may have created a conflict for the child such that if the suggested detail and the experienced detail were both remembered at the time of the recall interview, then the child may feel compelled to report the suggested detail merely to please the interviewer. When suggestions are not linked to the target occurrence, however, there may be less pressure on the child to acquiesce with the interviewer's suggestion because not reporting the interviewer's suggestion in the final occurrence does not necessarily mean that the child is disputing that the suggestion occurred in the event at all. Children presented with suggestions that were explicitly related to the target occurrence may have felt more confident about the interviewer's response than his/her own memory leading to greater acceptance of the suggestions. For instance, if the interviewer suggests something about the target occurrence that conflicts with what the child remembers, it may make the child less certain of what he/she remembers given that the adult interviewer is perceived as a credible source (Ceci, Toglia &

Ross, 1987). Regarding memory mechanisms, the children in the repeat/not linked group may have been less likely to repeat the false suggestions because their memory of the occurrence had been less contaminated by the suggestions compared to children in the other repeat group. That is, the suggestions may have been incorporated into the child's general memory of the event, but not necessarily that occurrence per se (Powell et al., 1999).

It is interesting to note that although repetition can have a deleterious effect on the ability to give an accurate report of a particular occurrence, the children who experienced the repeated event and were not oriented to any occurrence in the biasing interview reported a lower number of false suggestions compared to children in the single event group. In other words, in this experiment, the detrimental effect of repeated experience on children's suggestibility had a lesser impact on subsequent recall than the detrimental effect of linking a suggestion to a particular occurrence. This is an important finding because it shows that inconsistencies in the effect of repeated experience in previous studies may be partly accounted for by different treatment of the suggestions (i.e., whether the suggestion was linked to a particular occurrence or not). For instance, Powell et al., (1999; Experiment 1) reported a beneficial effect of repeated experience on suggestibility for variable items, whereas Powell et al., (1999; Experiment 2) and Powell and Roberts (2000) did not find any such effect. The Powell et al. (1999, Experiment 1) study differed from the other studies because, in the former study, the suggestions were not linked to any particular occurrence. Further research is needed to explore the precise conditions in which the detrimental impact of linking suggestions to an occurrence outweighs the detrimental impact of repeated experience. It may be that greater suggestibility effects for variable details would be observed when different interviewers conduct the biasing and recall interviews, or when interviewers openly acknowledge that false details may have been suggested; these factors have been found to reduce the reporting of false suggestions (Lindsay, Gonzales, & Eso, 1995).

While there was no difference in the number of false suggestions reported by children in the repeat/linked versus single/linked groups, repeated experience reduced children's ability to recall the target occurrence. These effects of repeated experience were consistent with previous research which has also examined children's memory for variable event details (see Powell, Thomson & Dietze, 1997 for review). Repetition reduced the number of accurate details that children could recall about the occurrence and it reduced the number of completely new details (referred to as external intrusion details). However, there was a relatively high number of intrusions of details from other occurrences which increased as a function of retention interval. Taken together, these findings show that although children become confused between the events after repeated experience, they tend to be fairly capable of confining their responses to the series of events in question unless false suggestions are offered by the interviewer. The likelihood of false suggestions contaminating the child's recall of an occurrence however increases when these suggestions are linked to the target occurrence compared to when they are not.

In light of these findings it is important that lawyers and investigative interviewers consider the difficulties children have in recalling an occurrence of a repeated offence, and consider how they can minimise the likelihood that false information will be incorporated into the child's account. The results of this study are considered to be generalisable at least in part to forensic settings because many children who give evidence are required to remember the specific details about an occurrence of a repeated event with some degree of precision. Two major implications can be drawn from these findings. First, if an interviewer needs to ask a child specific questions that may include false information, it is best to relate the question to the event per se, rather than to a particular occurrence. For example, it is better to ask "Did your uncle ever tell you not to tell anyone?", rather than "Did your uncle tell you not to tell anyone that time?". Further, it is better to ask "Is there another time that your mother used the belt?" rather than "Did your mother use the belt yesterday too?". If the interviewer unwittingly

provides false information in a specific question, the suggestions may be more likely to be incorporated into the child's subsequent account when they are focused on a particular occasion than when they are not. While it could be argued that linking suggestions to the target occurrence of the repeated event in the present study increased the accuracy of recall for true (correct) suggested items, interviewers in forensic settings do not usually have the advantage of knowing whether the information being suggested had actually been included in the occurrence. Contamination of any kind, therefore, needs to be avoided.

Finally, because children who experience a repeated event make several different types of errors (the most common of which is internal intrusion errors), the presence of errors in a child witness' account about an occurrence of a repeated event should not be regarded as evidence that the child's account has been coached or contaminated, or that the incidents did not happen at all. However research currently provides no clear basis for distinguishing between correct details and details intruding from other occurrences of the event and no basis for distinguishing internal intrusion errors from errors that did not occur in the event at all (i.e., false suggestions or external intrusions). This poses a problem when the case rests on the child's ability to accurately recall the specific details of the occurrence.

References

- Ceci, S. J., & Bruck, M. (1993). The suggestibility of the child witness: A historical review and synthesis. Psychological Bulletin, *113*, 403-439.
- Ceci, S.J., Ross, D.F., & Toglia, M.P. (1987). Suggestibility of children's memories: Psycholegal implications. Journal of Experimental Psychology:General, *116* (1), 38-49.
- Connolly, D. A., & Lindsay, D. S. (1998). The influence of suggestions on children's reports of a unique event versus an instance of a repeated event. Manuscript submitted for publication.
- Dent, H. R., & Stephenson, G. M. (1979). An experimental study of the effectiveness of different techniques of questioning child witnesses. British Journal of Social and Clinical Psychology, *18*, 41-51.
- Farrar, M. J., & Goodman, G. S. (1992). Developmental changes in event memory. Child Development, *63*, 173-187.
- Friedman, W. J. (1993). Memory of the time of past events. Psychological Bulletin, *113*, 44-66.
- Holliday, R.E., Douglas, K.M., & Hayes, B.K. (1999). Children's eyewitness suggestibility: Memory trace strength revisited. Cognitive Development, *14*, 443-462.
- Hudson, J. A. (1990). Constructive processing in children's event memory. Developmental Psychology, *26*, 180-187.
- Lindsay, D. S., Johnson, M. K. & Kwon, P. (1991). Developmental changes in memory source monitoring. Journal of Experimental Child Psychology, *52*, 297-318.
- Lindsay, D. S.; Gonzales, V.; & Eso, K. (1995). Aware and unaware of memories of postevent suggestions. In M.S. Zaragoza, J.R. Graham, G.C.N. Hall, R. Hirschman & Y.N. Ben-Porath (Eds.). Memory and testimony in the child witness (pp. 86-108). Thousand Oaks, CA: Sage Publications Inc.

Pezdek, K., & Roe, C. (1995). The effect of memory trace strength on suggestibility. Journal of Experimental Child Psychology, *60*, 116-128.

Powell, M. B., & Roberts, K. (2000). The effects of repeated experience, question type and retention interval on children's suggestibility about an event. Manuscript in preparation.

Powell, M. B., Roberts, K., Ceci, S. J. & Hembrooke, H. A. (1999). The effects of repeated experience on children's suggestibility. Developmental Psychology, *35*, 1462-1477.

Powell, M. B., & Thomson, D. M. (1996). Children's recall of an occurrence of a repeated event; Effects of age, retention interval and question type. Child Development, *67*, 1988-2004.

Powell, M. B., & Thomson, D. M. (1997a). Contrasting memory for temporal source and memory for content in children's discrimination of repeated events. Applied Cognitive Psychology, *11*, 339-360.

Powell, M. B., & Thomson, D. M. (1997b). The effect of an intervening interview of children's ability to remember an occurrence of a repeated event. Legal and Criminological Psychology, *2*, 247-262.

Powell, M. B., Thomson, D. M. & Dietze, P. M. (1997). Children's ability to remember an occurrence of a repeated event. Expert Evidence, *5*, 133-139.

Roberts, K.P., & Powell, M.B. (1999). The roles of inhibition and interference in children's eyewitness memory and suggestibility. Manuscript submitted for publication.

S vs R (1989). A.L.R., 321.

Table 1

Entire Set of Target Items and Instantiations

No.	ITEM	INSTANTIATION				
		A	B	C	D	E
1.	Children sit on X	Cardboard	garbage bag	rubber mat	white sheet	newspaper
2.	Cloak of leader	red	yellow	White	blue	green
3.	Koala's name	Boo	Kip	Pop	Stan	Jo
4.	Noisy animal	Kangaroo	goanna	Kookaburra	dingo	wombat
5.	Warm-up activity	run	wiggle fingers	touch toes	jump	dance
6.	Source of story	Cupboard	leader wrote	Posted	library	present under tree
7.	Content of story	police	sea creature	Easter	Supercat	elephant
8.	Child who holds up pictures	Child A	Child B	Child C	Child D	Child E
9.	Utensil to note who child is	pencil	crayon	chalk	texter	ballpoint pen
10.	Puzzle	Car with flat tyre	eating cakes	balancing balls	juggling	walking on tightrope
11.	Music/scene for resting	beach	kites	birds	rain	park
12.	Body part that is focus of relaxation	legs	nose	stomach	arms	neck
13.	Method of getting refreshed	Baby wipe	fan (paper plate)	handcream	face spray	cool drink
14.	Theme of sticker	Rocket	dinosaur	apple	flag	ball
15.	Container with stickers	Pencil case	purse	envelope	jar	basket
16.	Next stop	To movie	walking a dog	friend in hospital	birthday party	going on holiday

Table 2

Accuracy of Responses as a function of how they were described in the Biasing Interview.

Condition	Type of response				
	Correct	False suggestion	External intrusion	Internal intrusion	Other
True items					
Single/linked					
3 day del (N=16)	6.69 (1.35)	--	0.50 (0.82)	--	0.81 (0.98)
3 wk del (N=16)	5.69 (1.62)	--	1.19 (1.52)	--	1.13 (0.89)
Repeat/linked					
3 day del (N=15)	5.87 (1.41)	--	0.33 (0.49)	1.33 (1.18)	0.47 (0.83)
3 wk del (N=15)	3.60 (1.99)	--	0.27 (0.46)	2.40 (1.45)	1.73 (2.05)
Repeat/not linked					
3 day del (N=16)	4.63 (2.00)		0.06 (0.25)	2.50 (1.26)	0.81 (1.11)
3 wk del (N=15)	2.87 (2.07)		0.53 (0.74)	3.87 (2.10)	0.73 (0.96)
False items					
Single/linked					
3 day del (N=16)	4.81 (1.60)	0.88 (0.96)	1.06 (1.24)	--	1.25 (1.07)
3 wk del (N=16)	3.63 (1.41)	1.81 (1.56)	0.75 (1.00)	--	1.81 (1.17)
Repeat/linked					
3 day del (N=15)	1.93 (1.79)	1.27 (1.22)	0.47 (1.13)	2.93 (1.94)	1.40 (1.50)
3 wk del (N=15)	0.67 (0.72)	1.53 (1.60)	0.20 (0.41)	3.60 (2.13)	2.00 (2.73)
Repeat/not linked					
3 day del (N=16)	2.75 (1.29)	0.56 (0.89)	0.25 (0.45)	4.00 (1.03)	0.44 (0.81)

3 wk del (N=15)	1.53 (1.13)	0.60 (0.74)	0.53 (0.74)	4.33 (1.76)	1.00 (1.36)
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Note. Standard deviations appear in parentheses. Internal intrusions were not possible for children with a single experience of the event.