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# Disorder in the courtroom? Child witnesses under cross-examination

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### ABSTRACT

When a witness gives evidence in an adversarial criminal trial, there are two main questioning phases: direct examination and cross-examination. Special provisions are sometimes made for children to give direct evidence, but the majority of child witnesses are still cross-examined. While several decades of research have demonstrated how to elicit children's direct evidence in a manner that promotes completeness and accuracy, the cross-examination process directly violates many of these principles. Here, we outline the characteristics of cross-examination, particularly as it pertains to children, and we review research about its impact on children, their testimony, and their credibility. We consider options for reforming the cross-examination process and propose avenues for future research.

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### Introduction

Under an adversarial legal system, any witness's evidence is subject to scrutiny from the opposing lawyer in a process known as cross-examination. Cross-examination was designed to serve two main functions: (1) to elicit favorable evidence by having the witness agree with facts supporting the cross-examining lawyer's case and (2) to weaken the opposing side's case by discrediting unfavorable evidence or the person who provided it (Eichelbaum, 1989; Hampton & Wild, 2000; Salhany, 1999). Cross-examination is considered to be an important part of the criminal justice system; in fact, many experts have argued that it is the primary means by which the truth in any case emerges (Wellman,

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1986; Wigmore, 1974). Although many of the characteristics of cross-examination of adults and children are similar, here we focus on child witnesses.

### **Cross-examination and the child witness**

Over the past three decades, widespread concern has been raised about children's ability to cope with a legal system that was designed by adults, for adults (Pipe & Henaghan, 1996). For example, research suggests that children's experiences within the criminal justice system can have marked and prolonged negative effects on their education, mental health, and beliefs about re-engaging with the legal process (Eastwood & Patton, 2002; Eastwood, Patton, & Stacy, 2000; Goodman et al., 1992; Prior, Glaser, & Lynch, 1997). In fact, many child complainants of sexual offences who have testified in court are so unsettled by the adversarial process that they say they would not report being a victim again (Eastwood & Patton, 2002; Prior et al., 1997). Likewise, parents of child complainants have insisted that they would not put their children through the legal process again, and would advise other parents against it (Alaggia, Lambert, & Regehr, 2009; Eastwood & Patton, 2002). Even legal professionals generally consider the legal process to be traumatic for children (Cashmore & Bussey, 1996; Eastwood & Patton, 2002; Powell, Wright, & Hughes-Scholes, 2011), and would not want their own children to participate in it (Eastwood & Patton, 2002).

In response to these concerns, many jurisdictions have implemented reforms in an attempt to render the adversarial process more child-friendly. These reforms have included removing corroboration requirements, removing judicial warnings about the unreliability of children's testimony, reducing trial delays, allowing the use of support people, allowing children to take a simplified oath, and permitting children to testify via special measures such as closed-circuit TV or from behind a screen (Bala, 1999; Pipe & Henaghan, 1996; Westcott & Jones, 1999; Whitcomb, 2003).

Despite these changes, many experts still believe that some aspects of the adult judicial system continue to pose a considerable obstacle to children participating fully in the courtroom. Although there have been attempts to make direct-examination procedures more developmentally appropriate for children, there have been no changes to the process of cross-examination. There is little doubt that being cross-examined is not a pleasant process for any witness. Even expert witnesses and police officers find the process of being cross-examined stressful and confusing (Flin, 1993); considerable material has been written to assist experts to respond to cross-examination questions calmly and with confidence (e.g., Brodsky, 2004). Children, however, are likely to find the challenges that cross-examining lawyers pose to their accuracy, credibility, and motivation particularly disconcerting, because this type of verbal exchange goes well beyond their conversational experience (Donaldson, 1982; Lyon, 2002). Indeed, most child complainants describe cross-examination as very distressing (Eastwood & Patton, 2002; Prior et al., 1997); many cite cross-examination and the behavior of defense lawyers<sup>1</sup> as the most frightening aspects of the trial (Eastwood & Patton, 2002; Eastwood et al., 2000; Prior et al., 1997; but see Wade, 2002, for more moderate views from non-complainant witnesses).

The kinds of questions that are asked during cross-examination differ markedly from those used during other components of the legal process (Davies, Henderson, & Seymour, 1997; Zajac & Cannan, 2009; Zajac, Gross, & Hayne, 2003; see Table 1 for examples). They also differ markedly from "best practice" guidelines for questioning children (e.g., American Professional Society on the Abuse of Children, 1990, 1997; Home Office, 1992, 2002). In fact, cross-examination has been described as a "how not to" guide to asking children questions (Henderson, 2002, p. 279).

#### *Questions that challenge credibility*

One goal of cross-examination is to weaken the opposing lawyer's case by discrediting unfavorable evidence, or the witness who provided it. There are a number of ways that this might be achieved.

<sup>1</sup> While we acknowledge that child witnesses can be called to give evidence for the defense (e.g., as alibi witnesses), the vastmajority appear for the prosecution, most often as complainants. For this reason, throughout this review, we refer to defenselawyers conducting cross-examination.

**Table 1**

Examples of cross-examination questions posed to children in Zajac et al. (2003) and Zajac and Cannan (2009).

Question Type	Examples
<i>Credibility Challenges</i>	
Poor Eyewitness Ability	It would have been pretty dark, was it? It would have been hard to see his face? And you're sure that this isn't just an accident; that maybe once when he's held your hand you've accidentally touched his penis? Have any of those people helped you remember what [accused] did?
Dishonesty	When you were at [mother's friend's] house and the dirty movie was on, why didn't you tell [mother's friend] that night what happened? He's going to say that he has never put your hand on his penis; that he wouldn't do that sort of thing to you. Now, wouldn't he be telling the truth? He didn't really touch your private parts at the camp, did he?
Leading/Suggestive Questions	You never got into the front seat at any stage, did you? Have Mum and Dad been telling you how bad [accused] is? And you kids yelled at him, do you remember that?
<i>Complex Questions</i>	
Complex Grammar/Jargon	Is that the lady who you told about [accused] touching you? And if you say that you didn't say these things, would you be telling the truth? You've suggested in relation to the incident in May that you were bringing [accused] a cup of tea?
Ambiguity/Sense	So neither of your brothers weren't there? That night after you told Mum about [accused] and before you made the videotape at the police station, do you remember whether you went to school the next day? So he could have just about seen you where you were across the road through the window when he backed in?
Specificity/Measurement	How long after [accused] waking you up did the police arrive, do you remember, can you estimate the time? What kind of day was it? How cold? If I suggested to you that you were there for about an hour, would that be right do you think?

### *Accusations of poor eyewitness ability*

One way that defense lawyers challenge children's testimony is by challenging their perceptions or understanding of the alleged event, their memory for details of the event, or their ability to communicate their recollections to the court (Eichelbaum, 1989). For example, the lawyer might imply that the witness could not have observed the event in the way it was originally recounted (Hampton & Wild, 2000). In one study conducted by Davies et al. (1997), for example, the researchers examined court transcripts in which 26 children gave evidence in cases of alleged sexual abuse. In over one third of these transcripts, lawyers accused children of having mistaken the identity of their alleged abuser. In one transcript, for example, the defense lawyer suggested that the child could not have seen the offender's face due to poor lighting in the room. The strength of a child's memory for the alleged event may also be questioned during cross-examination (Brennan & Brennan, 1988; Hampton & Wild, 2000) by highlighting the delay between the alleged event and a child's disclosure (Elliot & Briere, 1994; London, Bruck, Ceci, & Shuman, 2005; London, Bruck, Wright, & Ceci, 2008) or between the disclosure and the trial (Eastwood & Patton, 2002; Goodman et al., 1992; Martone, Jaudes, & Cavins, 1996; Prior et al., 1997; Westcott & Page, 2002). During cross-examination, lawyers also challenge children's credibility by highlighting inconsistencies in their testimony (Davies et al., 1997).

During cross-examination, lawyers also attempt to discredit children's evidence by emphasizing their potential for suggestibility (Davies et al., 1997; Salhany, 1999). Because children are questioned – formally and informally – many times during the legal process (Goodman et al., 1992; Runyan, Hunter, Everson, Whitcomb, & De Vos, 1994; Tedesco & Schnell, 1987), defense lawyers might argue that children's allegations against the defendant are the product of suggestive questioning by parents and professionals rather than an accurate account of an actual event (Davies et al., 1997; Salhany, 1999).

### *Accusations of dishonesty*

During cross-examination, a lawyer might also directly challenge the child's honesty by attacking his or her character or by portraying him or her in a negative light (Eichelbaum, 1989; Westcott & Page, 2002). A lawyer might try to argue that the child has some bias or motive for making an allegation (Brennan & Brennan, 1988; Davies et al., 1997; Eichelbaum, 1989). For example, in 65% of the transcripts reviewed by Davies et al., 1997, the cross-examining lawyer suggested that the child had an ulterior motive for alleging sexual abuse; the primary motive put forward was to gain revenge on a person whom the child did not like. Attention-seeking and deflecting attention from one's own inappropriate behavior were also raised as possible reasons why a child would erroneously allege abuse. For example, Westcott and Page (2002) report the case of a 14-year-old girl who was accused during cross-examination of making a false abuse allegation to cover up rebellious behavior such as smoking, breaking curfew, and unsanctioned interactions with males.

A lawyer might also describe prior episodes of dishonest conduct, or suggest that the witness's general character is untrustworthy. Many children who undergo cross-examination are directly – and often repeatedly – accused of lying (Brennan & Brennan, 1988; Davies et al., 1997; Eastwood et al., 2000; Hanna, Davies, Henderson, Crothers, & Rotherham, 2010; Westcott & Page, 2002). It is also common for lawyers to suggest that a child's behavior during the alleged abuse (e.g., absence of protest) and the disclosure of the abuse (e.g., delay in disclosure) is incongruent with behavior that might be considered "appropriate" or "expected" in such situations (Davies et al., 1997; Eastwood & Patton, 2002; Westcott & Page, 2002). These arguments are highly similar to arguments commonly used in cases involving adult rape complainants (Krulowitz & Nash, 1979; Lees, 2002; Ong & Ward, 1999).

### *Leading and suggestive questions*

In addition to challenging their honesty, motives, and credibility, cross-examining lawyers also ask specific kinds of questions that might pose particular problems for children. While open-ended questions (e.g., "can you tell me everything that happened?") are associated with a high degree of accuracy (Cassel, Roebbers, & Bjorklund, 1996; Dent & Stephenson, 1979; Lamb & Fauchier, 2001; Orbach & Lamb, 2001; Poole & Lindsay, 1995; Quas & Schaaf, 2002) and have therefore emerged as the "gold standard" for interviewing children, these types of questions have been described as "disastrous" during cross-examination (e.g., Eichelbaum, 1989, p. 204) because they allow the witness to provide information that could harm the cross-examining lawyer's case. Instead, because the primary goal of cross-examination is to control the dialogue with the witness (Eichelbaum, 1989; Henderson, 2002; Salhany, 1999; Wellman, 1986; Westcott & Page, 2002), the bulk of the questions that are asked are leading (Stone, 1998); that is, they suggest a desired response (Brennan & Brennan, 1988; Hanna et al., 2010; Zajac & Cannan, 2009; Zajac et al., 2003).

### *Complex questions*

The kinds of questions that children are asked during cross-examination are often linguistically complex. On the broadest level, cross-examining lawyers often jump from topic to topic without warning so that the witness is unaware of the line of questioning (Hanna et al., 2010; Zajac et al., 2003). This technique is specifically designed to be confusing; legal text books recommend that, to assist in comprehension and recall, lawyers address topics with their own witnesses in a logical and chronological order, but they are encouraged to use indirection when questioning witnesses from the opposing side (e.g., Eichelbaum, 1989; Stone, 1998).

Cross-examination questions are also characterized by complex grammatical structures, including multifaceted questions, negative rhetorical questions, and embedded clauses (e.g., Brennan, 1995; Brennan & Brennan, 1988). These questions are often difficult for adults to follow, but they may be completely incomprehensible to a child whose language skills are still developing. Cross-examination questions may even be objectively ambiguous or nonsensical (Zajac et al., 2003). In turn, children will often attempt to answer a nonsensical question (Hughes & Grieve, 1980), even when they recognize that the question is "silly" (Waterman, Blades, & Spencer, 2000); they are particularly likely to do

so when questions require only a yes or no answer (Waterman et al., 2000), as is typical during cross-examination.

Finally, cross-examination questions often request highly specific information about the alleged event or perpetrator (Eichelbaum, 1989). For example, children are often asked questions about time, frequency, duration, directions, and measurement (Davies et al., 1997; Saywitz, Nathanson, & Snyder, 1993; Walker, 1993). These questions are often beyond children's developmental reach (Bala, 1999; Friedman, 1982; Saywitz et al., 1993). Developmental differences in memory are also likely to make recall of specific details difficult for children. Children tend to focus on (and therefore remember) different information about an event than do adults (Nelson, 1989; Reese, 1999). Furthermore, peripheral details are less likely to be encoded and are more susceptible to suggestion than central information (Cassel & Bjorklund, 1995; Coxon & Valentine, 1997).

### **How do children respond to cross-examination questions?**

How do children respond to cross-examination questions? One way that researchers have attempted to understand how children perform under cross-examination is by examining children's ability to comprehend the types of questions that are typically posed. For example, Brennan and Brennan (1988), analyzed over 5000 questions from court transcripts of child sexual abuse complainants, and asked children of the same age to repeat individual questions verbatim. Children's performance on this task was compared to their ability to reproduce questions created by teachers and counselors. Children's ability to reproduce the cross-examination questions so that the questions maintained their original meaning was lower than their ability to do so for the two other question types. In fact, children were most likely to repeat the cross-examination questions in a manner that made no sense whatsoever. Some attempts to repeat cross-examination questions resulted in questions that were semantically and syntactically correct, but were altered in terms of meaning.

In a similar study, Perry and colleagues (Perry et al., 1995) showed children and adolescents a short video and then interviewed them about it with questions phrased in either 'lawyerese' (i.e., questions containing negatives, double negatives, multiple parts, difficult vocabulary, or complex syntax) or in a simplified form. Consistent with Brennan and Brennan (1988), children under 10 years of age found it very difficult to replicate 'lawyerese' questions verbatim. Furthermore, while 5–7-year-olds found it difficult to retain the meaning of either simple or complex questions, the 9- and 10-year-olds were more likely to retain the meaning of simple questions than complex questions. Interestingly, over 90% of children correctly identified whether or not they had understood simple questions, but when participants believed that they had understood the questions in 'lawyerese' form, only 54% of participants were correct, indicating that children do not necessarily know when they have misunderstood what they are being asked (Markham, 1977).

In other studies, researchers have used court transcripts to ascertain how actual child witnesses respond to cross-examination. For example, Zajac et al. (2003) examined transcripts in which 5–13-year-old sexual abuse complainants gave evidence. In the cases that were examined, children undergoing cross-examination seldom requested clarification, often answered questions that were ambiguous or didn't make sense, and showed high rates of compliance with leading questions. Notably, 75% of the children changed at least one aspect of their testimony during cross-examination; many made considerably more than one change, and some retracted their allegations altogether. Many of the changes that children made were preceded by a leading question that challenged the child's credibility (e.g., "but that's not really what happened, is it?"). Zajac and Cannan (2009) obtained very similar findings.

### **The Effect of cross-examination on the accuracy of children's reports**

One reason that cross-examination continues to play such an important role in criminal trials with both children and adults is that many members of the legal profession firmly believe that cross-examination is a vital means of ascertaining the truth; many also firmly believe that cross-examination will

not pose any problems for a witness who is telling the truth (Eichelbaum, 1989; Salhany, 1999; Wellman, 1986; Wigmore, 1974). But is this actually the case?

A number of laboratory studies have now cast doubt on the assumption that cross-examination leads to more accurate accounts from children. In the first study of this kind, Turtle and Wells (1988) asked 8- and 12-year-old children and adults to watch a film clip of a simulated child abduction. The next day, each participant was asked 10 direct examination and 10 cross-examination questions about the film. Participants in all age groups were less accurate in response to the cross-examination questions than in response to direct examination questions. The 8-year-olds' overall accuracy rate (41%) was lower than that of the adults and the 12-year-olds (61% and 65%, respectively), although this difference only reached marginal levels of significance. Turtle and Wells' findings came as little surprise to many researchers, who had long suspected that cross-examination could exert a detrimental effect on children's accuracy. Because the authors did not provide any detail about the questions that were asked of their participants, however, it is impossible to assess whether their cross-examination questions were an accurate reflection of courtroom questioning.

More recently, researchers have used court transcripts to develop a standardized laboratory analogue of cross-examination. In the first study of this kind, Zajac and Hayne (2003a) took 5- and 6-year-old children on a surprise trip to the police station and then interviewed them twice about their experiences. The first interview, a basic analogue of direct examination, took place 6 weeks after the event. This interview consisted of a free recall phase followed by four yes-no questions. Consistent with legal processes in numerous jurisdictions around the world, where an early forensic interview is videotaped and later used in place of direct evidence in court, this interview was videotaped. Eight months later, the children were shown their videotaped direct examination interview and were then interviewed with an analogue of cross-examination. The aim of the cross-examination interview was to talk children out of their direct examination responses to the four yes-no questions, irrespective of accuracy. To do this, the interviewer asked four sets of questions; one for each response. In each question set, the cross-examining interviewer first confirmed the child's direct examination response (e.g., "In the video, you said that you got to try on handcuffs, didn't you?"), and then asked a series of relevant and irrelevant questions, many of which were leading, complex, multi-part, ambiguous, or nonsensical (e.g., "The handcuffs would have been pretty heavy, were they?"). Next, the interviewer presented the child with a reason for disbelieving the child's earlier response (e.g., "I don't think that you did get to try on handcuffs. I think someone just told you to say that. That's what *really* happened, isn't it?"). Several reasons for disbelief were used; most of these were taken directly from court transcripts, while some were based on statements that adults often make when challenging children.

The primary dependent measures in the Zajac and Hayne (2003a) study were whether or not children changed their original responses, and whether any changes that they made were directed towards or away from the truth. As in the courtroom (Zajac et al., 2003), the vast majority of the children (85%) changed at least one aspect of their earlier reports under cross-examination. In fact, 33% of children changed *all* of their previous responses. Moreover, these changes were by no means limited to correcting earlier mistakes. In fact, children were just as likely to change a correct response as they were to correct an error. Overall, cross-examination questioning was detrimental to children's accuracy; in fact, the accuracy of children's cross-examination responses did not differ significantly from chance (50%). This finding held even when only considering the large number of children whose initial reports were 100% accurate.

Since the Zajac and Hayne (2003a) study, researchers have turned their attention to exploring the factors that influence children's responses to this unique style of questioning. Some of these are factors over which the legal system has little or no control, but which could help to identify children who might be particularly vulnerable to cross-examination's negative effects. Others are procedural factors that could help us to generate more developmentally appropriate guidelines and practices for cross-examination.

### Age

While children as young as 2 or 3 years old have been known to testify as witnesses in the criminal justice system, most child witnesses are considerably older (Goodman et al., 1992; Hanna et al., 2010;

Plotnikoff & Woolfson, 1995). In fact, the 5- and 6-year-old children who participated in Zajac and Hayne's (2003a) original study represent the younger extreme of the typical child witness population. Given this, how might older children answer the kinds of questions that are commonly posed during cross-examination? To answer this question, Zajac and Hayne's (2003a) study was repeated with a sample of 9- and 10-year-old children. Their performance differed from that of the 5- and 6-year-olds in several ways. First, the older children, made fewer changes during cross-examination than did the younger children. Second, unlike the younger children, the older children were more likely to change an incorrect answer than a correct one. These age-related improvements might reflect the development of skills that help children to accurately remember and report past events (e.g., language skills, Bohannon & Stanowicz, 1988; Valian, 2006; theory of mind, Antonietti, Liverta-Sempio, Marchetti, & Astington, 2006; Eisbach, 2004; the ability to learn new concepts, Schneider & Pressley, 1989) or resist social pressure (e.g., an appreciation that adults can be deceptive in conversation; Demorest, Meyer, Phelps, Gardner, & Winner, 1984). Despite age-related improvements, however, 9- and 10-year-old children's performance under cross-examination was significantly compromised. Notably, these older children still changed 43% of their correct responses, leading to a considerable decrease in accuracy (Zajac & Hayne, 2006).

### *Individual differences*

Although we know that eyewitness accuracy depends largely on the way in which evidence is solicited, individual children's responses to forensic questioning still vary even when these external factors are held constant (see Bruck & Melnyk, 2004, for a review). Understanding some of the individual differences that might influence children's responses to cross-examination questioning is therefore crucial, so that we can identify children who might be particularly vulnerable during cross-examination.

In one study designed to assess the effect of individual differences in children's response to cross-examination questions, Zajac, Jury, and O'Neill (2009) examined the role of several psychosocial variables on 5- and 6-year-old children's cross-examination performance. Although cross-examination questioning was detrimental to accuracy in almost all participants, children with low levels of teacher-rated self-esteem, self-confidence, and assertiveness performed particularly poorly. Given that children who have experienced abuse also tend to obtain low scores on these types of measures (Howing, Wodarski, Kurtz, & Gaudin, 1990; Kaufman & Cicchetti, 1989; Martin & Beezley, 1977; Oates, Forest, & Peacock, 1985), these findings raise a concerning possibility: that the same factors that could make children targets for abuse, or may be the consequences of it, could also make children particularly vulnerable in the courtroom.

Preliminary research examining the effect of individual differences in cognitive ability (i.e., IQ, memory, and language ability) indicates that, within the normal range of functioning, these variables contribute little to how children respond to cross-examination questions (O'Neill, Jury, & Zajac, submitted for publication). At this stage, however, we cannot rule out the influence of cognitive variables altogether; other cognitive processes could influence children's cross-examination performance. For example, executive functions such as working memory and inhibitory control could place children at risk for suggestion in the context of highly suggestive interviews (Karpinski & Scullin, 2009), as they are both directly and indirectly related to children's suggestibility (Alexander et al., 2002; Karpinski & Scullin, 2009; Roebers & Schneider, 2005; Ruffman, Rustin, Garnham, & Parkin, 2001; Scullin & Bonner, 2006). Better executive functioning could allow for stronger encoding and retrieval through the suppression of irrelevant stimuli (Alexander et al., 2002), and/or better ability to inhibit the tendency to agree with misleading suggestions (Scullin & Bonner, 2006). If executive functioning skills are related to cross-examination performance, then certain child populations could be particularly vulnerable. Children with ADHD, for example, are both more likely to exhibit executive functioning deficits (Willcutt, Doyle, Nigg, Faraone, & Pennington, 2005), and at greater risk of abuse/neglect (Briscoe-Smith & Hinshaw, 2006; Rucklidge, Brown, Crawford, & Kaplan, 2006). This is clearly an avenue for future research.

### *Delay*

In most cases, a child witness is cross-examined long after the alleged crime has occurred (Eastwood & Patton, 2002; Goodman et al., 1992; Hanna et al., 2010; Jonker & Swanson, 2007; Lash,

1995; Plotnikoff & Woolfson, 1995). In an attempt to model the effects of delays of this kind, the cross-examination interview in our original analogue studies occurred 8 months after children's direct evidence was pre-recorded. In light of research showing that suggestibility increases with delay (e.g., Zaragoza & Lane, 1994), however, it was important to consider the possibility that eliminating the delay between direct- and cross-examination might facilitate children's cross-examination performance.

To test this hypothesis, Righarts, Jack, Hayne, and Zajac (submitted for publication) employed the same basic paradigm, but cross-examined children either 1–3 days or 8 months after their direct-examination interview. Despite highly accurate initial reports, children's performance during cross-examination was very poor, even when cross-examination took place very soon after the target event. In fact, children's cross-examination accuracy scores did not differ as a function of delay. These data allow us to conclude that cross-examination questioning impairs accuracy even when it is conducted very soon after the event, before significant forgetting is likely to have taken place. Similarly, Turtle and Wells (1988) observed a negative effect of cross-examination questioning a mere 24 h after participants viewed the film clip.

Of course, delays during criminal investigations are not restricted to those occurring between allegation and trial. Child victims of sexual abuse, for example, may not disclose until many months or even years after the abuse has occurred (London et al., 2005). It is possible that by conducting our direct examination interviews very soon after the target event, children in our studies have been inoculated against the impact of delay. In this way, findings using short delays between each phase of the experimental paradigm might well be considered a *best-case scenario* of children's cross-examination performance. Again, this is an important area for future research.

### Question type

Up to this point, the studies that we have reviewed have investigated questioning style as a within-subjects factor, by comparing children's accuracy before and after cross-examination. It is important, however, to consider the possibility that children's accuracy could decrease regardless of the cross-examination questions that they were asked. Specifically, because cross-examination is never the first interview that children undergo, it is important to consider that children interviewed multiple times can be at risk of a reduction in accuracy simply by virtue of multiple interviews (Ceci, Huffman, Smith, & Loftus, 1994; Poole & White, 1991; Quas & Schaaf, 2002). To disentangle the effects of a second interview from the effects of the cross-examination questions per se, O'Neill and Zajac (2012) included a group of children who were not cross-examined, but were merely asked the direct examination questions again. They also manipulated child age (5–6 years or 9–10 years), and the delay between direct- and cross-examination (1 week or 6 months). Children's accuracy decreased irrespective of age or delay, but delay particularly impacted younger children's performance. Children's accuracy also decreased regardless of the form of the second interview, but the negative impact on accuracy was several times greater following cross-examination style interviewing. These data allow us to place responsibility for the negative effect of cross-examination chiefly, but not exclusively, on the typical types of questions asked.

### Subsequent questioning

It is now well established that children make changes to their reports under cross-examination-style questioning, but what are the effects of these response changes on their subsequent reports? To answer this question, Righarts, Jack, et al. (submitted for publication) asked children the direct examination interview questions again 1 week following the cross-examination interview. In an attempt to persuade children to report what they remembered, rather than what they felt was expected of them, this final interview was conducted by an experimenter who had accompanied children on the memory event, but had not interviewed them previously. Children's accuracy returned to pre-cross-examination levels; the vast majority of response changes made during cross-examination were not maintained in the final interview. These data suggest that, when children undergoing cross-examination make response changes that are directed away from the truth, these changes do not necessarily result in memory impairment (Righarts, Jack, et al., submitted for publication).



## Generalizing from the laboratory to the courtroom

Laboratory studies of cross-examination help us to identify the variables that affect how children respond to this unique style of questioning. Despite careful attention to study design, however, there will always be factors that could affect how well experimental findings generalize to the courtroom.

### *Ecologically valid questioning*

The studies conducted by Zajac and her colleagues have involved highly standardized analogues of the cross-examination process, which were developed based on court transcripts of actual child sexual abuse trials. While these scripted cross-examination protocols are often necessary to maintain a high degree of experimental control, especially when additional variables are being manipulated, the associations between lawyers' questions and child witnesses' responses in the courtroom will be bidirectional; that is, the questions that a lawyer asks will depend on what the child has said, and vice versa. Crossman, Segovia, and Miller (in preparation) addressed the limitation of highly standardized cross-examination analogues by having actual lawyers interview their participants as they would interview real witnesses. Three- to five-year-olds observed an innocuous event, following which an experimenter interviewed each child repeatedly and suggestively. Three months later, 12 of these children underwent unscripted direct- and cross-examination interviews conducted by experienced trial attorneys. In many cases, children who had formed false beliefs during the suggestive interviews became accurate as a result of cross-examination, but the increase in correct information and the decrease in errors observed during cross-examination did not reach statistical significance.

### *Traumatic events*

Although we must emphasise that not all episodes of abuse are frightening, painful, or otherwise traumatic for children (Okami, 1991; Schultz & Jones, 1983), children who appear in court as witnesses may often be required to testify about events that have been unpleasant to experience or observe. To this point, however, cross-examination studies have been largely limited to children participating in an enjoyable class trip (e.g., O'Neill and Zajac, 2012; Zajac & Hayne, 2003a, 2006; Zajac et al., 2009) or innocuous classroom-based event (Crossman et al., in preparation). Those that have used a more forensically relevant – albeit filmed – memory event (simulated child abduction; Turtle & Wells, 1988) have not set out to address the issue of stress, and have therefore lacked a comparison condition or relevant individual difference measures that would allow us to investigate any differences in cross-examination accuracy as a function of stress or trauma at the time of the alleged event.

The fact that experimental findings on children's memory for stressful events are equivocal (see Cordon, Pipe, Sayfan, Melinder, & Goodman, 2004; Goodman, Quas, & Ogle, 2010, for reviews) makes it difficult to determine whether existing cross-examination research using enjoyable or neutral memory events could be underestimating or overestimating the effect of cross-examination on children's accounts of traumatic experiences. What we can say, however, is that children can be pressured into changing their answers during cross-examination even when they remember the target event very well (Righarts, Jack, et al., submitted for publication). Additionally, the literature on stress and memory has focused on children's memory for stressful experiences, rather than how their memory or suggestibility is affected under stressful recall conditions. The latter issue is particularly relevant to cross-examination, during which child complainants report high levels of negative emotional arousal (Eastwood & Patton, 2002; Prior et al., 1997).

### *Repeated events*

To date, experimental analogue studies have exclusively examined the impact of cross-examination questioning on children's memory for a single event. In many real-world cases, however, children must provide testimony about events that have happened repeatedly (Davies et al., 1997; Powell & Thomson, 2002; Prior et al., 1997). For example, 75% of the child complainants interviewed by Prior

et al. (1997) reported having been sexually abused on more than one occasion, while 20 of the 26 child witnesses interviewed by Davies et al. (1997) alleged that they had been abused on more than three occasions by the same perpetrator.

Repeated exposure to an event often improves children's memory for features that are consistent across each episode (Farrar & Goodman, 1992; Ornstein et al., 1998; Powell, Roberts, Ceci, & Hembrooke, 1999). In the courtroom, however, children are often required to particularize – that is, to give highly specific details about discrete episodes of chronic abuse, including – but not limited to – time, location, what was said, and descriptions of clothing (Powell & Thomson, 2002; Powell, Thomson, & Dietze, 1997). Eastwood et al. (2000) give an example of a child complainant who was allegedly abused repeatedly over a 4-year-period, but was cross-examined about what she was wearing on one specific day. Questions like this pose difficulty for children because their descriptions of events tend to be sparse, comprise common elements across the episodes (*fixed* elements), and lack acknowledgement of details that deviate from what typically happens during the event – so-called *variable* details (Farrar & Goodman, 1992; Powell & Thomson, 1996; Powell et al., 1999). As well as being less able to recall specific or variable details about repeated events, children tend to be more suggestible regarding these elements (Connolly & Lindsay, 2001; Powell & Thomson, 1996).

Given the research outlined above, we can generate a number of specific hypotheses about how cross-examination questioning might affect children's reports about repeated events. First, the closed, leading nature of cross-examination questions may increase the likelihood of children changing their responses to questions about repeated events, particularly after a long delay. Second, children may be somewhat buffered from the negative effects of cross-examination on their recall of details that are consistent across repeated events, but more at risk for changing their responses to questions about the episode-specific details that are often crucial in obtaining a conviction. Vulnerabilities in this area are highly relevant to the courtroom, where cross-examining lawyers often draw attention to children's inability to give consistent accounts of specific details from repeated events (Eichelbaum, 1989; Salhany, 1999).

### *Secrets and threats*

There are several reasons why some children might fail to disclose genuine abuse, even when questioned about it. They might be keeping a promise, protecting a family member, avoiding embarrassment or punishment, or they might have been threatened with harm if a disclosure is made (Hartwig & Wilson, 2002; Pipe & Goodman, 1991). Alternatively, one of children's greatest fears about the legal process is that they will not be believed (Berliner & Conte, 1995; Flin, Stevenson, & Davies, 1989; Freshwater & Aldridge, 1994), and abusers can exploit this fear to encourage victims to remain silent (Eastwood et al., 2000). Unfortunately, even when disclosures have been made, any of these factors could make children vulnerable to retracting information under cross-examination pressure.

In laboratory studies, several factors of particular relevance to cross-examination have been linked to the concealment of information. Bottoms, Goodman, Schwartz-Kenney, and Thomas (2002), for example, demonstrated that children would often keep a secret to protect a parental figure. Bribery and threats are also effective motivations for children to maintain a secret (Bottoms et al., 2002; Bussey, 1992, cited in Pipe & Goodman, 1991). Finally, the presence of the secret-giver during interviewing appears to influence whether secrets are concealed or disclosed, at least for older children (Wilson, Powell, Raju, & Romeo, 2004). While an alleged offender will not be present when children are interviewed in the early stages of the investigation process, his or her presence in the courtroom may make children more likely to change accurate testimony or retract genuine allegations under cross-examination. This possibility lends some support to the use of screens or CCTV to shield child witnesses from the defendant.

### *Interview length*

Child witnesses often report the length of cross-examination to be distressing, with a considerable number of children testifying for several hours and/or across more than 1 day (Eastwood & Patton, 2002; Goodman et al., 1992; Hanna et al., 2010). In contrast, experimental studies of cross-examina-

tion have used relatively short questioning protocols. Crossman et al. (in preparation) direct and cross-examination sessions combined lasted approximately 20 min. Turtle and Wells (1988) asked their participants 10 cross-examination questions, while Zajac and colleagues use a protocol that is up to 40 questions in length (O'Neill and Zajac, 2012; Righarts, Jack et al., submitted for publication; Righarts, O'Neill, et al., submitted for publication; Zajac & Hayne, 2003a, 2006; Zajac et al., 2009). Clearly time and ethical constraints prevent researchers from interviewing children over an extended time period. In the real world, however, longer interviews provide greater opportunity for children to become confused and change previous responses. Alternatively, children who find cross-examination aversive may acquiesce with the lawyer's suggestions to end the questioning as quickly as possible.

### *Physical environment*

Children's ability to answer questions in an actual courtroom may differ from their capacity to answer the same questions in a less formal or more familiar setting (Bala, 1999). Indeed, the physical courtroom environment has been criticized for creating a threatening atmosphere that could hinder children's ability to answer questions posed to them (Brennan & Brennan, 1988; Scott, 1994). Research findings support these concerns: children find the courtroom environment to be stressful, and their resultant anxiety appears to interfere with their ability to provide complete and accurate recall. Child witnesses who testify from outside of the courtroom – via closed circuit television – appear to experience less anxiety than those who testify in open court, as rated by observers (Law Reform Commission., 1992; Murray, 1995) and the children themselves (Murray, 1995). Children interviewed in a mock courtroom show higher scores on self-report anxiety measures (Goodman et al., 1998; Saywitz & Nathanson, 1993) and observer ratings of anxious behavior (Hill & Hill, 1987) than those interviewed in a less formal setting. Furthermore, children interviewed in a courtroom setting tend to be less accurate when answering misleading and specific questions (Goodman et al., 1998; Nathanson & Saywitz, 1993; Saywitz & Nathanson, 1993), and display less complete free recall information (Hill & Hill, 1987; Saywitz & Nathanson, 1993) than those who are not. In Saywitz and Nathanson's (1993) study, children's self-reported stress levels were negatively correlated with free recall accuracy. Similarly, Nathanson and Saywitz (1993) showed that heart rate reactivity was negatively correlated with children's correct responses to specific questions.

What do these findings tell us about the applicability of cross-examination findings to the real world? Because Zajac and colleagues have always interviewed children in a room at their school, a familiar – and presumably non-threatening – environment, it may be that this aspect of the paradigm could have underestimated the effect of cross-examination on children's performance. Crossman et al. (in preparation) attempted to simulate a courtroom, but differences in the experimental paradigms make it impossible to compare findings. The role of the courtroom environment itself therefore remains an experimental question that can only be tested by manipulating interview setting. What empirical research can never address adequately, however, is the possibility that the gravity of a real trial situation inoculates children against making the types of cross-examination errors that arise in laboratory studies.

### *Interviewer manner*

By manipulating the interviewer's behaviors, researchers have established that the emotional tone of an interview, determined by factors such as the interviewer's rate of speech, eye contact, posture, tone of voice, and physical proximity to the interviewee affects children's susceptibility to suggestion (Carter, Bottoms, & Levine, 1996). The supportive interviewer may introduce himself to the child, engage in eye contact, smile frequently, sit in a relaxed manner during the interview, and provide encouraging comments (e.g., "You're doing a great job"). In contrast, the non-supportive interviewer makes no attempt to establish rapport with the child, speaks in monotone, smiles or makes eye contact infrequently, and sits with formal posture during the interview (Carter et al., 1996; Davis & Bottoms, 2002; Quas, Bauer, & Boyce, 2004; Quas, Wallin, Papini, Lench, & Scullin, 2005). Typically, children interviewed in a non-supportive manner make more errors on misleading questions (Carter

et al., 1996; Davis & Bottoms, 2002; Quas et al., 2005, for an exception see Imhoff & Baker-Ward, 1999).

In our cross-examination paradigm, the interviewer adopts a professional, non-aggressive tone, builds some rapport with the child before starting the interview, sits at the same level as the child, and makes eye contact. In this way, the interviewer's behavior could be seen as relatively supportive. Given the findings discussed above, it is possible that our paradigm could underestimate the negative effect of cross-examination on children's performance. We must point out, however, that lawyers (Davies et al., 1997; Henderson, 2002) and legal texts (e.g., Eichelbaum, 1989) frequently promote cross-examining children in a gentle, non-intimidating manner, because it is under these conditions that child witnesses are more likely to agree with the lawyer. If this were the case, we might expect our findings to generalize to the courtroom. To test these hypotheses, however, interviewer style must be experimentally manipulated within the cross-examination paradigm. This has yet to be done, possibly because ethical constraints limit researchers' capacity – and willingness – to interview children in the aggressive manner often seen in the courtroom.

### **Jurors' reactions to cross-examination**

Regardless of the accuracy of children's responses to cross-examination, it is the jury that makes the ultimate decision about whether or not the defendant is guilty.

Jurors have noted that cross-examination appears very difficult for child witnesses. In Cashmore and Trimboli's (2006) Australian survey, for example, jurors in child sexual assault cases believed that defense lawyers treated the child complainants less fairly than did judges or prosecutors. Jurors tended to be critical of the questions that defense lawyers asked children, saying that many were not appropriate for the child's age or intellectual functioning. The behavior of the defense lawyers also came under fire from many jurors. In particular, jurors condemned defense lawyers who upset the child or accused him or her of lying. Jurors also identified children as being more distressed and less confident when they answered cross-examination questions, relative to direct examination questions.

Given that jurors acknowledge that children find cross-examination difficult, does this influence their evaluation of children's evidence? Several studies suggest that potential jurors take into account the questioning style used to interview children (e.g., Castelli, Goodman, & Ghetti, 2005; Schmidt & Brigham, 1996; Tubb, Wood, & Hosch, 1999), although these studies have focused on children's primary evidence, where inappropriately suggestive questioning could lead to a false allegation. In Tubb et al. (1999) study, for example, mock jurors in a simulated case of child sexual abuse were less likely to convict when the child's primary evidence was elicited through the use of suggestive questioning.

Given Tubb et al. (1999) findings, could inappropriate questioning during cross-examination influence jurors' verdicts? Indeed, there is some recent evidence to suggest that this might be the case. Evans, Lee, and Lyon (2009) used an automatic linguistic analysis tool to examine the link between question complexity and trial outcome in 46 child sexual abuse court transcripts. The complexity of direct examination questions was unrelated to verdict, but the complexity of the cross-examination questions accurately predicted trial outcome in 83% of cases. Contrary to expectations, complex cross-examination questioning was associated with guilty verdicts, rather than acquittals. How can we account for these findings? It is possible that defense lawyers might use highly complex questions when the prosecution case is strong, in an effort to confuse a witness that they cannot easily discredit. Alternatively, the complexity of cross-examination might influence jurors' perceptions of the child or his or her evidence. This second option could occur in one of two ways. First, jurors might be more sympathetic to a child complainant's case when they see the child undergoing highly complex cross-examination questioning, regardless of how the child responds. Second, jurors could be taking children's responses to the questioning into account. That is, they might perceive a child who stands up to a rigorous cross-examination as more credible than one who stands up to a less rigorous one.

Once we start to consider the possible effects of cross-examination on a child's evidence and how this might influence jurors, the issue of consistency arises. Because cross-examination is not the first interview that children undergo in the adversarial legal system, it may result in a contradiction of earlier – direct examination – testimony. In the case of inconsistency across two interviews, jurors are

required to weigh which version of events is more likely to be the truth. Inconsistency in an adult witness's report has typically led mock jurors to conclude that that witness's original report was not truthful (Berman & Cutler, 1996; Berman, Narby, & Cutler, 1995; Brewer, Potter, Fisher, Bond, & Luszcz, 1999; Semmler & Brewer, 2002). In fact, Granhag and Stroemwall (2000) identified consistency as the most frequently used cue for making truth/lie judgments about an adult witness's testimony.

There is a dearth of research examining the effect of inconsistency on mock jurors' perceptions of a child's evidence. At least one study has suggested that mock jurors may be particularly sensitive to inconsistencies between a young child's direct- and cross-examination evidence (Leippe & Romanczyk, 1989, Experiment 3). In a recent study by Zajac and Hayne (2012), however, there was some indication that mock jurors took the questioning style used during cross-examination into account when evaluating a situation in which a child retracted her abuse allegation. In that study, cross-examination only exerted an influence on jurors' verdicts when the complainant retracted her allegation despite developmentally appropriate questioning. When the child retracted her allegation in the face of *inappropriate* cross-examination questioning, the conviction rate did not drop significantly.

The next step in this research is to ascertain whether cross-examination is a help or a hindrance to jurors faced with the task of determining children's accuracy. Turtle and Wells (1988) showed videotapes of their child 'witnesses' to mock jurors and asked them to determine what really happened during the videotaped event. They found that cross-examination was more helpful to mock jurors in this sense than direct examination. Similarly, some preliminary work of ours in a similar vein suggests that jurors can distinguish between a cross-examination change directed towards the truth and one directed away from it (Zajac & Hayne, 2003b), but substantially more research effort needs to go toward addressing this question.

### **Facilitating accurate evidence during cross-examination**

Taken together, the extant research findings suggest that not only might cross-examination be an ineffective method for ascertaining the truth, but that in some cases it might even create the very errors that it aims to uncover. There is considerable potential for these errors to compromise the outcome of a trial. Consequently, while researchers continue to explore the mechanisms behind the effects of cross-examination, our attention must now expand to encompass reforms to policy and practice.

We note that much of the impetus for reform has come from concern about the psychological impact of testifying on children. Although there is little doubt that negotiating the criminal justice system is not a pleasant process for children, this unpleasantness is by no means limited to child witnesses, and is likely to apply even more so to wrongly accused defendants. In our opinion, the fundamental goal in considering reform should be to achieve the best quality evidence.

While cross-examination contravenes most well established principles for eliciting accurate evidence from children, its aim from a legal standpoint is not to elicit evidence, but to *test* that evidence. Furthermore, while eyewitness memory researchers are concerned with facilitating accurate testimony, many in the legal profession will argue that the adversarial court process is concerned not with the truth, but with convincing arguments. For these reasons, suggestion of reform of cross-examination is often met with considerable resistance from legal practitioners (Cashmore & Bussey, 1996; Davies et al., 1997; Peters & Nunez, 1999). Despite conflicting perspectives of the legal profession and psychological scientists, however, several countries have made reforms to the cross-examination process, and several more have proposed them. Implemented and proposed reforms encompass both bottom-up approaches, which aim to help children to negotiate the existing system; and top-down approaches, in which the system, or an aspect of it, is changed to better accommodate children. The principal options are discussed below; many of these are not mutually exclusive.

#### *Option 1: Retain cross-examination in its current form*

Can we afford to retain the status quo and hope that justice will be served? Recall that Evans et al. (2009) observed that complex child cross-examinations were associated with convictions, suggesting

that developmentally unsound cross-examinations may not necessarily reduce conviction rates. Furthermore, Righarts, Jack, et al. (submitted for publication) observed a high level of consistency between children's final interview responses and their highly accurate direct examination responses, raising the possibility that at least some of the damage done during cross-examination could be undone during re-examination, when lawyers may attempt to rectify any inconsistencies between their witnesses' direct-examination and cross-examination testimony.

Caution is warranted, however, since Crossman et al. (in preparation) data suggest that desirable changes made during cross-examination (i.e., those directed *towards* the truth) may not be retained. Moreover, even if *all* of the errors that children made during cross-examination were corrected during re-examination, children who provide inconsistent testimony may be seen as less credible in the eyes of a jury than those who remain consistent (Leippe & Romanczyk, 1989, Experiment 3). That said, Zajac and Hayne's (2012) data suggest that jurors might be forgiving of inconsistencies that are elicited by inappropriate cross-examination questioning, and two studies suggest that cross-examination might even help jurors to discern children's accuracy (Turtle & Wells, 1988; Zajac & Hayne, 2003b). It is also necessary to investigate the generalizability of Righarts et al.'s findings to situations that are more analogous to re-examination. For example, it will be necessary to confirm that children's re-examination responses were not influenced by the final interviewer's presence during the memory event, or the cross-examining interviewer's absence during the final interview. Finally, in our experience dealing with transcripts of criminal trials involving child witnesses, we have noted that re-examination does not always take place, even when retractions or other substantial inconsistencies have arisen during cross-examination. For these reasons, relying on re-examination as a mechanism to resolve any negative effects of cross-examination is risky.

#### *Option 2: Reduce delays to cross-examination*

Even in countries making concerted efforts to expedite trials involving child complainants, cross-examination typically occurs long after an allegation has been made (Eastwood & Patton, 2002; Goodman et al., 1992; Hanna et al., 2010; Lash, 1995; Plotnikoff & Woolfson, 1995). Furthermore, in many countries, these delays are increasing (e.g., New Zealand; Hanna et al., 2010).

In two of the three cross-examination analogue studies in which researchers manipulated delay, a longer delay was associated with a decrease in children's accuracy (O'Neill and Zajac, submitted for publication, 2012; but see Righarts, Jack, et al., submitted for publication). In light of these findings, one way to reduce the negative effect of cross-examination might be to carry out the cross-examination interview as close as possible to the time of the event in question. Several jurisdictions provide for cross-examination to be pre-recorded at time an allegation is made (e.g., USA, England, Wales, New Zealand, Australia), but this provision is rarely, if ever, used (Gupta, 1994; Hanna et al., 2010).

Given the effects of delay on children's accuracy, it would be encouraging to see policies that allow for early cross-examination to be used. Decreasing the delays might also incur other benefits as well. For example, long trial delays have been shown to exert a negative effect on a child's mental state (Runyan et al., 1994). By bringing forward cross-examination, child victims of abuse may also be able to gain earlier access to therapeutic intervention (Esam, 2002). On the other hand, children's performance under cross-examination-style questioning tends to be poor even when they are interviewed very soon after the memory event (O'Neill and Zajac, 2012; Righarts, Jack, et al., in preparation; Turtle & Wells, 1988; Zajac et al., 2009). Reducing delay might therefore be best considered a useful adjunct to other types of reform.

#### *Option 3: Put cross-examination questions through a third party*

Many countries have either implemented (e.g., England, South Africa) or considered (e.g., New Zealand) the option of conducting cross-examination through a third party, or intermediary. One of the biggest questions facing policy-makers who consider this issue is deciding the precise role of the intermediary. That is, will the intermediary act as a *translator*, who repeats lawyers' questions verbatim (e.g., Norway), or as an *interpreter*, who is permitted to rephrase questions to render them more developmentally appropriate (e.g., England)? The fundamental question here is whether merely buffering

children from the intimidating and aggressive tone that is commonplace during cross-examination is enough to substantially improve the quality of their evidence. Indeed, many practitioners believe that the emotional tone of the interview is just as important as the questions themselves (Jonker & Swanson, 2007). As discussed earlier, however, our research would suggest that children perform poorly under cross-examination even when the lawyer assumes a supportive – but professional – style (O'Neill and Zajac, 2012; Righarts, O'Neill, & Zajac, submitted for publication; Righarts, Jack, et al., submitted for publication; Zajac & Hayne, 2003a, 2006; Zajac et al., 2009); it is therefore unlikely that addressing emotional tone without addressing the nature of the questions will do much to facilitate quality evidence.

Although the idea of a suitably qualified intermediary who rephrases questions holds considerable face validity, there are three main caveats to this reform. First, in an ideal world, any intermediary who was required or permitted to rephrase questions would require a comprehensive knowledge of child development, memory, linguistics, and the evidential process. In reality, intermediaries seldom possess all of these qualities, and accreditation processes differ widely (Hanna et al., 2010). Second, no direct systematic research has been carried out into what effect the 'intermediary as interpreter' approach would have on the quality of children's evidence. As already noted, our data have shown that cross-examination-style questions exert a far greater negative effect on children's accuracy than questions that address the same issues but are phrased in a more developmentally appropriate manner (O'Neill and Zajac, 2012). In that study, however, the vast majority of children provided accurate testimony to begin with. What we do not yet know is whether the intermediary approach would have the desired effect on a child whose original evidence was flawed or even fabricated. Finally, intermediaries who are permitted to rephrase questions are unlikely to be permitted to address *lines of questioning*, or comment on issues that arose earlier in questioning that might affect a child's response to a given question. The only model that may partially resolve this problem is a model in which the defense lawyer briefs the intermediary on elements to test the witness on; the intermediary then conducts his/her own questioning to achieve this. Again, however, the general lines of questioning may be non-negotiable.

#### *Option 4: Educate judges and lawyers about appropriate questioning*

Lawyers and judges may lack knowledge of child development and, consequently, what constitutes inappropriate questioning for children (Bala, 1999; Eastwood et al., 2000; Eltringham & Aldridge, 2000; Henderson, 2002). One defense lawyer interviewed by Eastwood et al. (2000, p. 169), for example, stated: "because the child has the same IQ as an adult, they can largely be treated as an adult". As a result of these types of misperceptions, education for lawyers and judges regarding what constitutes appropriate child questioning is frequently advocated. Jurisdictions that have taken this approach, however, have done so largely without success (e.g., Cashmore & Trimboli, 2005).

Why does this approach tend to be ineffective? At least one study suggests that lawyers overwhelmingly consider their cross-examination questions to be age-appropriate, but that they also appear to underestimate the steps that need to be taken to ensure that questions are developmentally sound (Henderson, 2002). One needs only to glance at legal textbooks, however, to see that a lack of knowledge regarding how to question witnesses in a developmentally appropriate manner may not be the only reason that lawyers ask complex and confrontational cross-examination questions. Discrediting the witness is the essence of cross-examination, and lawyers are encouraged to achieve this using techniques that would not be acceptable in any other forensic setting. Given that legal texts also instruct lawyers to use children's limited verbal proficiency against them to decrease their credibility (Bala, 1999; Eichelbaum, 1989; Henderson, 2002), it is likely that complex questioning is deliberately employed in some situations. In support of this notion, Henderson (2002) notes that, outside of cross-examination, defense lawyers appear to be aware of the dangers of suggestive questions in eliciting false abuse allegations. It may also be that the use of grammatically complex questions is not always a deliberate technique utilized to confuse the child, but rather the result of cross-examination questioning being impromptu (Zajac et al., 2003). Although the general line of cross-examination questioning can be prepared in advance, the individual questions cannot (Eichelbaum, 1989), perhaps

resulting in more complex questions than necessary or intended. Educating lawyers would do little to solve this problem.

Unlike lawyers, judges have a general duty to prevent questioning that may result in the court being misled, and many jurisdictions allow or compel judges to intercede when questions are inappropriate. Which questions are considered to be inappropriate does differ depending on the jurisdiction, but may cover questions that are confusing, misleading, harassing, offensive, repetitive, intimidating and/or annoying (Cashmore & Bussey, 1996; Eastwood & Patton, 2002). Hafemeister (1996) noted that judges tend to believe that they are adequately addressing inappropriate courtroom questions. Over 87% of judges in that study stated that they monitored questions that children were asked and ensured that they could be understood. Over 95% of judges thought that posing questions at children's comprehension level was fair and effective. In stark contrast, the data suggest that judicial intervention rarely occurs when a child is giving evidence (Davies & Seymour, 1998; O'Kelly et al., 2003; Zajac & Cannan, 2009; Zajac et al., 2003). In fact, Davies and Seymour (1998) reported that no one intervened to protect children from inappropriate questioning in the 26 New Zealand transcripts that they analyzed, while Zajac et al. (2003) and Zajac and Cannan (2009) both noted that judicial intervention was extremely rare. This lack of intervention may indicate that judges do not have a good understanding of the types of questions that are not appropriate for children (Eastwood & Patton, 2002).

Although educating judges on these issues may be more successful than educating lawyers, a lack of knowledge about what constitutes appropriate questioning is not the only reason that judges might be hesitant to intervene. Numerous researchers, for example, have suggested that judges may fear seeming biased (Davies & Seymour, 1998; Kebbell, Hatton, Johnson, & O'Kelly, 2001; O'Kelly et al., 2003). Intervening can also cause considerable disruption in a trial, especially if the jury needs to be sent out while discussion takes place. Finally, some judges in Cashmore and Bussey's (1996) study indicated that thorough testing of the child's evidence during cross-examination was of utmost importance, and that a child's distress was an unfortunate – but acceptable – consequence. Interestingly, judges' willingness to intervene was inversely related to their perception of children's susceptibility to fantasy and suggestibility.

#### *Option 5: Prepare children for cross-examination*

In recognition that testifying in court is difficult for child witnesses, many jurisdictions offer preparation programs to vulnerable witnesses in the lead-up to the trial. Unfortunately, children's difficulty with cross-examination questioning has largely been neglected in these programs, which generally focus on familiarizing children with the courtroom and its procedures (Davies, Devere, & Verbitsky, 2004; Dible & Teske, 1993; Doueck, Weston, Filbert, Beekhuis, & Redlich, 1997; Finnegan, 2000; Gersch, Gersch, Lockhart, & Moyses, 1999; Mellor & Dent, 1994; Morgan Libeau, Woodham, & Rickard, 2003; Welder, 2000). Some programs tell children that cross-examination will differ from other forensic interviews, in that their integrity might be questioned (Bauer, 1983), or give some basic instruction on addressing cross-examination questions (Morgan Libeau et al., 2003), but these elements typically comprise only a small part of the intervention.

Although children can be taught strategies to answer suggestive and other difficult questions accurately (Gee, Gregory, & Pipe, 1999; Peters & Nunez, 1999), these interventions do not prepare children for the challenges to credibility that characterize cross-examination. Helping children to respond to these types of questions is crucial, given that children might either assume that their evidence will be believed (Saywitz, 1989), or fear that it will not (Flin, 1993; Flin et al., 1989; Freshwater & Aldridge, 1994).

Recent research shows that merely warning children of the difficult nature of cross-examination is likely to be insufficient to buffer them from the negative effects of this questioning style (Righarts, O'Neill, et al., submitted for publication). In light of these findings, Righarts, O'Neill, et al. (submitted for publication) developed a brief (approximately 20 min) intervention specifically designed to give 5–10-year-old children practice and feedback at the types of questions that they might be asked during cross-examination. During the subsequent cross-examination interview, children who received the intervention made fewer changes to their earlier responses, and changed a smaller proportion of their correct – but not their incorrect – responses, relative to control children. Furthermore, accuracy levels



during the cross-examination interview were higher in the intervention group than in the control group. In short, the intervention was successful (Righarts, O'Neill, et al., submitted for publication).

At this early stage, three main advantages of the intervention are evident. First, children are not 'coached' on their testimony about the staged event; they receive practice at answering questions about an unrelated topic. Second, the intervention emphasizes accuracy rather than resistance to change per se. Third, the intervention was effective despite being conducted by an unfamiliar third party, as would occur in real life. Naturally, however, there are numerous aspects of the intervention that require more comprehensive investigation. For example, we recently confirmed that the efficacy of our preparation intervention decreases with time (O'Neill and Zajac, submitted for publication), raising questions about whether we can reduce/ameliorate this effect, perhaps with a brief verbal reminder of the intervention. Furthermore, because we cannot predict with any great certainty the questions that children will be asked, it is crucial that we investigate children's ability to generalize from the intervention to the courtroom. Our data (O'Neill and Zajac, submitted for publication; Righarts, O'Neill, et al., submitted for publication) suggest that the *extent* of the overlap between the practice questions and the cross-examination questions exerts little effect on intervention efficacy, but some degree of overlap has always been present. Finally, it is important to ensure that our intervention is beneficial to children with low levels of assertiveness, confidence and self-esteem, as these characteristics are common in victims of child abuse (Howing et al., 1990; Kaufman & Cicchetti, 1989; Martin & Beezley, 1977; Oates et al., 1985), and are also associated with poorer cross-examination performance (Zajac et al., 2009).

Most important to note is that while our intervention has facilitated children's cross-examination performance across two studies, even children in the preparation conditions made changes to their earlier testimony that decreased their overall accuracy levels. Further work needs to determine which components could be added to preparation programs, which aspects should be altered, or which reforms they should be implemented alongside, to maximize their effectiveness.

## Directions for future research

Because laboratory analogue studies of child cross-examination are a relatively recent phenomenon, researchers will be busy for some time uncovering details of the effect of cross-examination on children's eyewitness reports, and the mechanism(s) responsible. There are, however, several other directions for future cross-examination research, each of which has particular forensic relevance.

### *Cross-examination of older witnesses*

Adult witnesses also face lengthy, linguistically complex, and coercive cross-examinations (e.g., Brereton, 1997; Danet & Bogoch, 1980; Kebbell, Deprez, & Wagstaff, 2003; Zajac & Cannan, 2009) and are susceptible to many of the same factors that influence children's performance during forensic interviewing (e.g., wording of a question; Kebbell, Hatton, Johnson, & O'Kelly, 2001; Kebbell & Johnson, 2000; Loftus & Greene, 1980; Loftus & Zanni, 1975; Perry et al., 1995; Poole & White, 1991; Waterman, Blades, & Spencer, 2001; social influence, Asch, 1956; Cialdini, 1988; Milgram, 1963, 1974). In light of this, are the negative effects of cross-examination limited to children?

By studying court transcripts in which child and adult complainants gave evidence in sexual offence trials, we recently confirmed that adults are not immune to the effects of cross-examination on their testimony (Zajac & Cannan, 2009). In fact, adults undergoing cross-examination made just as many changes to their evidence as children. Many of these changes were elicited by the types of questions that are unique to cross-examination (i.e., leading and/or credibility-challenging questions). In light of this finding, it is imperative that we examine whether these changes decrease adults' accuracy as they do that of children. Three of the four studies to examine this issue have observed that adults' accuracy decreases significantly following cross-examination-style questioning (Brimacombe, Jung, Garrioch, & Allison, 2003; Turtle & Wells, 1988; Valentine & Maras, 2011; but see Jack & Zajac, 2011).

Importantly, the questioning style used to cross-examine adults in the courtroom is likely to be qualitatively and quantitatively different from that used to cross-examine children. Relative to children, for example, adult witnesses tend to be asked more cross-examination questions, a higher proportion of which are complex and credibility challenging (Zajac & Cannan, 2009). The specific credibility challenges used to cross-examine adults are also likely to differ from those used with children. In cases of a sexual nature, for example, defense lawyers are likely to raise the issue of consent with adult complainants – clearly not a valid means of challenging a child. By asking participants of all age groups the same questions, it is likely that laboratory research could overestimate the age-related decrease in the cross-examination effect. Overcoming this obstacle in an empirically sound way poses a challenge for researchers.

#### *Cross-examination of witnesses with an intellectual disability*

Compared to their typically developing peers, individuals with an intellectual disability<sup>2</sup> (ID) are at greater risk of being a victim of a serious crime, including physical and sexual assault and robbery (Westcott & Jones, 1999; Wilson & Brewer, 1992). Despite this, crimes against persons with an ID frequently go unreported, and even when a report is made, only a few cases make it to court (Valenti-Hein & Schwartz, 1993). Part of the reason for this is that individuals with an ID are perceived to be unreliable witnesses. In fact, jurors consider witnesses with an ID to be less credible than their typically developing counterparts (Stobbs & Kebbell, 2003).

Is this skepticism warranted? Children and adults with an ID can give very accurate – albeit brief (Agnew & Powell, 2004; Michel, Gordon, Ornstein, & Simpson, 2000; Milne & Bull, 2001) – reports in response to open-ended questions (Agnew & Powell, 2004; Dent, 1992; Gordon, Jens, Hollings, & Watson, 1994; Henry & Gudjonsson, 1999, 2003). Given the cognitive delays and adaptive functioning deficits experienced by people with an ID, however, we should not be surprised that they struggle with questions that are specific, repeated, complex, and suggestive (Agnew & Powell, 2004; Dent, 1992; Gordon et al., 1994; Gudjonsson & Henry, 2003; Heal & Sigelman, 1995; Henry & Gudjonsson, 1999; Michel et al., 2000). These findings pose a problem for witnesses with an ID who are questioned in a forensic context (see Kebbell, Hatton, Johnson, & O’Kelly, 2001; Milne & Bull, 2001, for reviews). That is, the types of questions that these individuals find most difficult to answer accurately are just the sorts of questions that characterize cross-examination. For this reason, cross-examination is likely to pose more problems for these witnesses than for their typically developing peers (Gudjonsson & Henry, 2003; Kebbell, Hatton, & Johnson, 2004).

Adding to the problems that intellectually disabled witnesses might experience during courtroom questioning, lawyers and judges seem reluctant to alter their practices to accommodate witnesses with an ID. Kebbell et al. (2004) noted that, for the most part, lawyers question witnesses with and without an ID in a similar way. When compared to typically developing witnesses, however, individuals with an ID provided shorter responses, were less likely to resist leading questions (particularly during cross-examination), and were less likely to provide clarifying information. Furthermore, judicial intervention – whether addressed to the witness or to the questioning lawyer – is rare in cases involving witnesses with an ID, and does not occur significantly more often than in cases involving typically developing witnesses (O’Kelly et al., 2003).

#### *Cross-examination of dishonest witnesses*

It is now well established that cross-examination questioning can compromise the accuracy of children who are telling the truth. What is less well known is its effect on children whose original accounts are not accurate. Taken together, these two approaches would strike at the very heart of the cross-examination issue, and could exert substantial impact on policy-makers. Although Zajac and Hayne (2003a, 2006) and Crossman et al. (in preparation) ensured that children’s direct examination reports were not 100% accurate by misleading them on some aspects of the memory event, we know

<sup>2</sup> Intellectual disability is also referred to ‘learning disability’, particularly in the United Kingdom, and ‘mental retardation’, predominantly in the United States.

nothing about situations in which children are purposefully fabricating their evidence, and how cross-examination might uncover the truth in these cases. At this juncture, it is important to consider that a sexual abuse allegation would be particularly easy to fabricate, as there is seldom physical or eyewitness evidence to corroborate a complainant's story (Bays & Chadwick, 1993; Berenson, Heger, & Andrews, 1991; Walsh, Jones, Cross, & Lippert, 2010). Children who are fabricating their accounts can find it very difficult to maintain consistency across statements (e.g., Talwar, Gordon, & Lee, 2007; Talwar & Lee, 2002), raising the distinct possibility that their reports might be especially susceptible to cross-examination. Even if cross-examination identified 100% of liars, however, it is not a useful technique if it cannot discriminate acceptably between an accurate and an inaccurate witness. The caveat to this statement, of course, is that it is possible that jurors can distinguish a change made towards the truth from one directed away from it. As mentioned earlier, our preliminary research suggests that this might be the case when children have been misled about the memory event (Zajac & Hayne, 2003b), but again, we have no data regarding fabricated reports.

### Concluding remarks

Recent research has made it clear that cross-examination is unlikely to be the truth-finding technique that many believe it to be. Instead, the style of questioning typically used during this process directly contravenes almost every principle scientifically established over the past 30 years for obtaining complete and accurate evidence from any witness, particularly a child. Of specific concern, the types of questions typically employed during cross-examination have been shown to exert a significant negative effect on the accuracy of children's reports about personally experienced events. Although the difficulty that children experience during cross-examination appears to be widely recognized, because cross-examination is a mainstay of adversarial trial procedure, there appears to be resistance to its reform. Some progress in designing effective interventions has been made, with preparation programs that give children practice and feedback at answering cross-examination-style questions achieving promising results. Significant work is still needed, however, to maximize the effectiveness of these interventions. The legislature and judiciary also need to be open to alternative means of gathering and testing children's evidence. On the other hand, it is clearly dangerous to allow testimonial evidence to go untested – especially when corroborating evidence is absent or limited. What empirical research has yet to tell us is how proposed alternative methods of testing children's evidence fare with regard to establishing the truth.

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