Running head: QUESTIONING CHILDREN IN SCOTTISH COURTS

How do lawyers examine and cross-examine children in Scotland?

Samantha J. Andrews and Michael E. Lamb

University of Cambridge

Author Note

Samantha J. Andrews, Department of Psychology, University of Cambridge; Michael

E. Lamb, Department of Psychology, University of Cambridge.

Corresponding author: Samantha J. Andrews, Department of Psychology, University of

Cambridge, Free School Lane, Cambridge CB2 3RQ, U.K. Email: sja57@cam.ac.uk

Abstract

In the first study to systematically assess lawyers' questioning of children in Scotland, we examined 56 trial transcripts of 5- to 17-year-old children testifying as alleged victims of sexual abuse, focusing on differences between prosecutors and defense lawyers with respect to the types of questions asked and effects on witnesses' responses. Prosecutors used more invitations, directives, and option-posing prompts than defense lawyers, who used more suggestive prompts than prosecutors. Children were more unresponsive and less informative when answering defense lawyers than prosecutors. All children contradicted themselves at least once, with defense lawyers eliciting more self-contradictions than prosecutors. Suggestive questions were most likely to elicit self-contradictions, with suggestive confrontational and introductory questions eliciting significantly more self-contradictions than suggestive suppositions. Children also acquiesced more in response to tagged suggestions than untagged suggestions. Overall, lawyers altered their behavior little in response to variations in children's ages.

How do lawyers examine and cross-examine children in Scotland?

In adversarial jurisdictions, such as the United Kingdom, the United States, and New Zealand, cross-examination plays a critical role, since defendants have the right to challenge the evidence against them. However, recent experimental and field research, conducted primarily in the United States and New Zealand, has highlighted problems in the ways that prosecutors and defense lawyers question children in court, generating international interest, concern, and debate regarding the ways in which children's evidence should be presented and challenged. Remarkably, however, there has been no prior systematic quantitative research on the cross-examination of children in the United Kingdom, because proceedings are not routinely transcribed and are kept confidential by the courts. In England, Wales, and Northern Ireland, common-law principles prevail, whereas in Scotland there is a pluralistic system based on shared common-law principles combined with some unique civil-law principles. In particular, Scottish law requires that all evidence (including identification evidence) must be corroborated, and as a result children are called upon to testify more often and regarding a much wider range of crimes, than in the rest of the United Kingdom. Furthermore, precognition is a unique feature of Scottish law which requires that all witnesses must state their evidence before trial, so that advocates know in advance what evidence witnesses are likely to give and can thus better prepare their cross-examinations than can barristers in the rest of the United Kingdom. Further, forensic interviews are conducted in accordance with Joint Investigative Interview guidelines (Scottish Government, 2011) as opposed to Achieving Best Evidence guidelines (Home Office, 2011). All of these factors underline the importance of research examining cross-examination practices in a variety of common law jurisdictions, where differences like those enumerated above may profoundly affect what happens in court. Accordingly, the current research builds upon an unprecedented collaboration with the Scottish judiciary, which has publicly and privately

expressed considerable concern recently about the risks associated with inappropriate procedures in relation to children's testimony. The study was designed to assess comprehensively how Scottish prosecutors and defense lawyers question children.

The cross-examination of witnesses is often deemed essential to protect the accused's right to a fair trial (e.g., Article 6 (3d), of the European Convention on Human Rights; Sixth Amendment to the U.S. Constitution). Courts have a duty to allow witnesses to give their best evidence (Home Office, 2011, section 5.8) but in adversarial jurisdictions, lawyers aim to undermine the opponents' witnesses, and they question child witnesses accordingly. In particular, lawyers may challenge witness credibility and persuade children to change details in their accounts, often by exploiting their developmental limitations. Such questioning techniques violate guidelines, based on an extensive body of experimental and field research, outlining the best ways to elicit truthful testimony (see Rush, Quas, & McAuliff, 2012; Spencer & Lamb, 2012) and raise serious questions about the extent to which courts ensure both that guilty suspects are convicted and that innocent suspects are not wrongly convicted.

Question Types and Children's Responses: Lessons from Psychological Research

The question types used to elicit accounts of children's experiences affect both the quantity and quality of the information obtained (see Lamb, La Rooy, Malloy, & Katz, 2011; Lamb, Malloy, Hershkowitz, & La Rooy, 2015; Saywitz, Lyon, & Goodman, 2011 for reviews). On the one hand, when questioned with open-ended free-recall prompts (e.g., "Tell me what happened."), children provide accounts that may be brief but are more likely to be accurate. Additional open-ended prompts can be used to follow-up and thus elicit elaborations or further details (e.g., "You mentioned X. Tell me more about that."). Even though younger children may produce shorter and less detailed accounts in response to open-ended questions than older children and adults (e.g., Eisen, Goodman, Qin, Davis, & Crayton, 2007; Hershkowitz, Lamb, Orbach, Katz, & Horowitz, 2012; Lamb, Sternberg, Orbach,

Esplin, Stewart, & Mitchell, 2003), their reports are no less accurate (e.g., Jack, Leov, & Zajac, 2014; Sutherland & Hayne, 2001) but the probability that responses will be erroneous increases considerably when children are questioned using closed-ended recognition prompts (e.g., "Did he touch you with his fingers?"), due to the false recognition of details and response biases (e.g., Jones & Pipe, 2002; Lamb, Orbach, Hershkowitz, Horowitz, & Abbott, 2007). Younger children are more likely than older children and adults to provide erroneous details in response to closed-ended questions (e.g., Waterman, Blades, & Spencer, 2001, 2004; see Melnyk, Crossman, & Scullin, 2007, for a review).

Suggestive prompts are most problematic because children, especially young children, may change details in their accounts and thus respond inconsistently, either by incorporating suggested information or acquiescing to perceived interviewer coercion (e.g., Bruck & Ceci, 1999; Bruck, Ceci, & Principe, 2006; Eisen, Qin, Goodman, & Davis, 2002; Lamb & Fauchier, 2001; London & Kulkofsky, 2010; Orbach & Lamb, 2001). Suggestive tag questions (e.g., "You're lying, aren't you?") are especially detrimental (Lamb & Fauchier, 2001; Orbach & Lamb, 2001; Walker, Kenniston, & Inada, 2013). Recent research distinguishing between different types of suggestive prompts – confrontational, suppositional, and introductory - in forensic interviews (Orbach, Lamb, Hershkowitz, & Abbott, in press, see Table 1) found that children were twice as likely to acquiesce than resist interviewers' suggestions. Contradictions were most likely to be elicited in response to suggestive introductory prompts, closely followed by suggestive confrontational prompts, although the latter elicited almost a third of all contradictory responses, despite accounting for only 5% of the total number of suggestive prompts. Younger children were asked fewer suggestive questions than older children, but were more likely to acquiesce in response to suggestive confrontational prompts, and were as likely to acquiesce in response to suggestive suppositional and introductory prompts.

To minimize the risk of eliciting erroneous information, therefore, best-practice guidelines for forensic interviewers encourage maximal reliance on free-recall prompts, advise against the use of closed-ended 'yes/no' questions, and strongly discourage suggestive utterances (American Professional Society on the Abuse of Children, 2012; Home Office, 2011, section 3.44; Lamb et al., 2015). However, defense lawyers are permitted to ask children misleading questions when testing their evidence in cross-examinations, even though this increases the chances that children will answer incorrectly (Henderson, 2002) and thus does not give children the opportunity to "give their best evidence".

Types of Questions Asked by Lawyers in Court

Several recent studies have examined lawyer-child interactions using court transcripts from New Zealand (Hanna, Davies, Crothers, & Henderson, 2012 [18 cases]; Zajac & Cannan, 2009 [15 cases]; Zajac, Gross, & Hayne, 2003 [21 cases]) and the United States (Andrews, Ahern, Stolzenberg, & Lyon, in press [120 cases]; Andrews, Lamb, & Lyon, 2015a, 2015b [120 cases]; Klemfuss, Quas, & Lyon, 2014 [42 cases]; Stolzenberg and Lyon, 2014 [72 cases]). In New Zealand and throughout the United Kingdom, children's direct testimony is provided to the court by way of pre-recorded forensic interviews, sometimes supplemented by direct examination by prosecutors at the time of trial. In the United States, by contrast, direct testimony is provided at the time of trial, without the use of pre-recorded testimony. In all of these jurisdictions, cross-examination takes place during the trial.

Although researchers have generally found that prosecutors ask more open-ended questions than defense lawyers, and that defense lawyers ask more suggestive questions than prosecutors (e.g., Zajac et al., 2003), both prosecutors and defense lawyers predominantly ask questions that could be answered "yes" or "no" (Hanna et al., 2012; Klemfuss et al., 2014; Stolzenberg & Lyon, 2014; Zajac & Cannan, 2009). In the most comprehensive study to date, Andrews et al. (2015a) examined a total of 48,716 question-response pairs, and found that

lawyers used more closed-ended than open-ended prompts. Specifically, prosecutors used more invitations, directives, and option-posing prompts than defense lawyers, who used more suggestive prompts than prosecutors.

Because younger children are more suggestible and may produce less detailed answers than older children, it seems likely that lawyers may ask children of different ages different types of questions. However, the results of previous studies have again been somewhat inconsistent, likely because of methodological differences and the small numbers of cases included in most studies. Klemfuss et al. (2014) found that, with age, there was a significant decrease in the use of option-posing questions and an increase in the use of suggestive questions whereas Stolzenberg and Lyon (2014) found that lawyers were slightly more likely to ask younger children yes-no questions. However, both Zajac et al. (2003) and Andrews et al. (2015a) found no significant associations between children's ages and the types of questions used by both prosecutors and defense lawyers.

Children's Responsiveness and Productivity in Court

In forensic interviews, children who make allegations of abuse are responsive (acknowledge and attempt to engage with the question posed) to almost all the questions addressed to them (e.g., Lamb, Hershkowitz, Sternberg, Esplin, Hovav, Manor, & Yudilevitch, 1996; Sternberg, Lamb, Davies, & Westcott, 2001). Children's productivity (in terms of the number of details reported) increases with age, especially in response to invitations (Lamb, Sternberg, & Esplin, 2000; Lamb et al., 2003), although very young children are most productive in response to open-ended directive questions (Hershkowitz et al., 2012). Children are also responsive in the courtroom. Both Andrews et al. (2015a) and Klemfuss et al. (2014) found that child witnesses were more often responsive than unresponsive, although Andrews et al. (2015a, in press) also reported that children were more responsive to prosecutors than defense lawyers and that productivity increased with age, with

children more productive in response to open-ended prompts than closed-ended prompts. Similarly, Klemfuss et al. (2014) found that, with increasing age, children elaborated more (i.e., provided more information than was requested) in response to prosecutors' rather than defense lawyers' questions. Older children elaborated more in response to open-ended directive and closed-ended option-posing questions than did younger children, but there were no such differences with respect to suggestive questions. Unfortunately, the actual age range was unspecified, although the children averaged 12 years of age.

Children's Self-contradictions in Court

In adversarial jurisdictions, jurors often place a strong emphasis on report consistency when assessing testimony (e.g., Bruer & Pozzulo, 2014; Myers, Redlich, Goodman, Prizmich, & Imwinkelried, 1999; Semmler & Brewer, 2002). Although inconsistencies are reported by judges to have a small effect on trial outcomes (Connolly, Price, & Gordon, 2009), self-contradictory responses may reduce children's testimonial credibility (Home Office, 2011, section 2.214) and there is considerable interest in the extent to which testifying children might contradict themselves in court (e.g., Fisher, Brewer, & Mitchell, 2009).

Many laboratory analogue studies have shown that children are more likely to change their correct responses when cross-examined suggestively (e.g., Jack & Zajac, 2014; Fogliati & Bussey, 2014). For example, Fogliati and Bussey (2014) interviewed 120 5- and 7-year-old children twice about a staged transgression. All children first underwent a direct-examination and then either a second direct- or cross-examination immediately afterwards. Children interviewed in the direct/direct condition were equally accurate in the two interviews, whereas children in the direct/cross condition were significantly less accurate when cross-examined. Although some researchers have shown that these effects are stronger for younger than for older children (e.g., Bettenay, Ridley, Henry, & Crane, 2014; Zajac & Hayne, 2006), Fogliati and Bussey (2014) reported no age differences in the number of errors elicited in

cross-examinations, perhaps because the age difference between the groups was so small.

Much less is known about age differences in children's responses to direct- and cross-examination questions in real court cases. In New Zealand, Zajac et al. (2003) found that, regardless of age, children were more resistant and acquiescent in response to leading questions asked by defense lawyers rather than prosecutors. Children made no changes to their earlier statements in response to questions from prosecutors but 76% made changes under cross-examination, with 95% of these changes made in response to leading or credibility-challenging prompts. Moreover, Zajac and Cannan (2009) reported that both child and adult complainants were more likely to change their statements in response to questions from the defense than the prosecution. All of the adults and 93% of the children changed at least one response during cross-examination. Zajac and Cannan (2009) did not report how often prosecutors elicited self-contradictions and because the study was conducted in New Zealand where pre-recorded forensic interviews comprise the bulk of children's direct testimonies the researchers could not compare in-court testimony with the contents of the forensic interviews. In the United States, Andrews et al. (2015a) identified self-contradictions in 95% of the cases studied. Defense lawyers elicited more self-contradictions than prosecutors, but nearly all prosecutors (86%) elicited at least one self-contradiction. Suggestive questions elicited more self-contradictions than any other prompt type, regardless of age.

Current Study

There has been no previous research on cross examinations in the United Kingdom. The current study assessed the direct- and cross-examination of children in Scottish courts in a sample of transcripts involving 56 5- to 17-year-old children questioned in trials held between 2009 and 2014. Specifically, child age and lawyer role (prosecution/defense) were examined in relation to the types of questions asked. Child age, lawyer role, question types,

and/or suggestive question subtypes were then further analyzed in relation to children's responsiveness, the frequency of self-contradictions, children's acquiescence and resistance to lawyers' suggestive questions, and children's productivity. To provide a comprehensive picture, and a foundation for further research, we further sought to explore the frequency with which substantive and non-substantive questions were asked, and whether this differed in relation to lawyer role and children's age. Judges' input was also described.

In light of previous findings, first, we predicted that lawyers would ask more closed-ended than open-ended questions, and that defense lawyers would be more likely than prosecutors to use suggestive prompts. Second, we predicted that defense lawyers would be more likely than prosecutors to elicit self-contradictions (because they used more suggestive questions). Third, we predicted that suggestive prompts would be most likely to elicit self-contradictions, and that children would be more acquiescent in response to defense lawyers' than prosecutors' suggestive questions. Finally, we predicted that the effects of closed-ended and suggestive questions would be more detrimental (i.e., lower responsiveness, more self-contradictions, and lower productivity) for younger than for older children, but, in light of previous findings (Andrews et al., 2015a, in press), that there would be no age differences in lawyers' use of question types and suggestive question subtypes.

Method

Sample

The Court Service Team of the Scottish Court Service identified all cases conducted in six major court-houses in Scotland between 2009 and 2014 in which alleged victims of child abuse had testified. Forty-three trials were identified. Recordings of the cases were located, and the portions of the trials in which the children testified were transcribed. Cases involving children who needed the assistance of translators or retracted their sexual abuse allegations or had many sections of inaudible or missing audio were excluded. Transcripts of

36 trials involving a total of 56 alleged victims of child sexual abuse were eligible for use in the current study. Nine cases (11 children) were from Aberdeen, 9 cases (19 children) from Edinburgh, 12 cases (16 children) from Glasgow, 1 case (1 child) from Inverness, 3 cases (5 children) from Livingston, and 2 cases (4 children) from Perth. The trials included in the present study involved at least 25 different prosecutors, 24 different defense lawyers, and 22 different judges. There were 9 transcripts for which this information could not be determined.

Children reported single ($n = 18$) or multiple ($n = 38$) sexually abusive experiences involving penetration ($n = 38$), touching under clothes ($n = 10$), touching over clothes ($n = 3$), and indecent exposure ($n = 5$). The final sample included 40 girls and 16 boys of between 5 and 17 years of age ($M = 13.99$, $SD = 2.69$). Due to the negative skew, children were categorized on the basis of age at the time of trial into 3 groups: 12-year-olds and under ($n = 15$), 13- to 15-year-olds ($n = 26$), and 16- and 17-year-olds ($n = 15$). These categories were chosen because they accord with the Sexual Offences Act (2003): 16 years is the age of sexual consent, but children under 13 years old can never legally give sexual consent. No information was available concerning the children's socioeconomic and ethnic backgrounds.

All defendants were male. In 95% ($n = 53$) of the cases, children knew the alleged abusers. The suspects were biological parents ($n = 8$), step-fathers/mothers' boyfriends ($n = 3$), other family members ($n = 20$), family friends ($n = 5$), friends/acquaintances ($n = 17$), and strangers ($n = 3$). Defendants were either convicted ($n = 42$) or acquitted ($n = 10$). The remaining 4 defendants were convicted but not for all alleged sexual offences.

In accordance with the Victims and Witnesses [Scotland] Act (2014), many of the children were accorded 'special measures' when they testified. All courts were closed to the public. Four children received no other special measures. Other children gave evidence in court with screen and a supporter present ($n = 15$), or just a supporter present ($n = 5$). The

remaining children gave evidence via a live TV link either with a supporter present ($n = 21$)

or without a supporter present ($n = 3$), or their evidence was taken on commission[1] ($n = 8$).

Coding of Transcripts

The transcripts contained direct- and often redirect-examinations, in which the

prosecution questioned the children, and cross-examinations, in which the defense questioned

the children. No transcripts contained recross-examinations. Both the substantive and non-

substantive questions and responses and judges' questions and input were coded.

Non-substantive. Lawyers' statements or questions that were not focused on the

incident under investigation were coded as non-substantive. Inaudible prompts were also

coded as non-substantive. Non-substantive prompts were classified into one of four

categories: procedural, anchor, rapport, and inaudible (see Table 1 for definitions and

examples).

Substantive. Substantive utterances or responses were defined as those designed to

elicit or provide information about what happened during the alleged incidents, what

immediately preceded or followed the alleged incidents, within-incident interventions (e.g.,

unexpected interruptions exposing the abuse) and witness details (e.g., witness intervention),

other features of the abuse (e.g., how long the incidents lasted, where they happened),

disclosure, and prior substantive formal questioning (e.g., what the child said happened in the

forensic interview).

Question types. Lawyers' substantive utterances were categorized into one of fifteen

subtypes (see Table 1). To increase statistical power for some analyses, prompt type was also

collapsed into the five categories commonly used to differentiate among interviewer

---

[1] Taking evidence by a commissioner is considered only for the most vulnerable witnesses. In these instances, delays in testifying may increase distress and trauma, significantly hindering the witness's ability to give evidence. Evidence can therefore be taken before a commissioner appointed by the court. The evidence is taken in full (direct-, cross-, and re-direct-examination) from the witness, proceedings are video recorded, and later received at the subsequent trial (see Vulnerable Witnesses [Scotland] Act, 2004).

utterances in forensic interviews (e.g., Lamb, Hershkowitz, Orbach, & Esplin, 2008):

facilitators, invitations, directive, option-posing, and suggestive prompts (see Table 1).

Suggestive question subtypes. Suggestive questions were further categorized into one

of twelve subtypes (using a coding system designed by Orbach et al., in press). Definitions

and examples of each type are provided in Table 1. To increase statistical power for some

analyses, suggestive question subtype was also collapsed into 3 categories: suggestive

confrontation, suggestive supposition, and suggestive introduction. All suggested prompts

were also coded for whether they were tagged or untagged (see Table 1).

Children's responses.

Responsiveness. Children's responsiveness was categorized exhaustively into one of

two categories: responsive and unresponsive. Definitions and examples of each category are

provided in Table 1.

Self-contradictions. Self-contradictions were defined as responses that negated what

the children had previously disclosed during the proceedings or provided conflicting

information (see Table 1).

Acquiescence and resistance to suggestive questions. Children's responses to

suggestive prompts were categorized as either acquiescent or resistant in relation to the

suggestive confrontation, supposition, or input (see Table 1).

Productivity. The number of new details conveyed by the child in each substantive

response was tabulated using a procedure described by Lamb et al. (1996). Details were the

smallest unit for analyzing information provided by children pertaining to the alleged

incidents. Details involved the naming, identification, or description of individuals, objects,

events, places, actions, emotions, thoughts, and sensations relevant to alleged incidents, as

well as any of their features (e.g., appearances, locations, times, durations, temporal orders,

sounds, smells, and textures). Repeated words or details between and within utterances were

counted only once unless the repetition appeared intentional (e.g., for emphasis). Details were only counted when they added to the understanding of the target incident(s), therefore false starts (e.g., "I – they went..."; "Um, well..."), statements that expressed the child's present mental or emotional state (e.g., "I am scared"), phrases that suggested the level of confidence of the interviewee during the interview (e.g. "I know"; "I think"; "Maybe"), and claims of lack of knowledge/ignorance (e.g., "I don't know"; "I don't remember") were *not* counted as substantive details.

Inter-rater Reliability

Another rater independently coded 20% of the transcripts that were randomly selected. The identification and classification of substantive and non-substantive prompts, non-substantive prompt classification, acquiescent versus resistant responses, and suggestive tag coding achieved 100% reliability. Inter-rater reliability in the classification of question subtypes was high, $K = .89$ ($SE = .02$), 95% CI [.85, .93], as was the agreement when coding suggestive question subtypes, $K = .83$ ($SE = .04$), 95% CI [.75, .91], children's responsiveness, $K = .96$ ($SE = .01$), 95% CI [.94, .98], self-contradictions, $K = .85$ ($SE = .05$), 95% CI [.75, .95], and productivity, $K = .83$ ($SE = .06$), 95% CI [.71, .95]. Reliability assessments were performed throughout the duration of coding and all disagreements were resolved by discussion.

Results

Analytical Plan

A series of preliminary discriminant function analyses were first conducted to determine whether gender, case verdicts, and the number of children testifying in each case should be considered further. Research questions were addressed using descriptive and repeated-measures analyses of variance (RM-ANOVAs), with children's age entered as the between-subjects variable (12 years old and under, 13 to 15 years old, 16 and 17 years old),

and all other variables entered as within-subjects repeated-measures factors: lawyer role (prosecutor, defense), substantive question types (facilitators, invitations, directives, option-posing, suggestive prompts), suggestive question subtypes (suggestive confrontation, suggestive supposition, suggestive introduction), responsiveness (responsive), tag questions (tagged), self-contradictions (contradictions), children's acquiescence/resistance (resistance), and children's productivity. The within-subjects repeated measure scores (apart from children's productivity) were converted into proportional values by dividing the cell count of interest (e.g., number of suggestive questions asked by defense lawyers) by the appropriate grouping total (e.g., the total number of substantive questions asked by defense lawyers). Using proportional values controls for the number of questions asked by each lawyer and the number of responses per child, and also helps normalize data distributions. All variables entered into parametric tests were normally distributed. When Mauchly's test of sphericity was violated, Greenhouse-Geisser corrections were applied. All parametric tests were conducted with child as the unit of analysis, and power analyses confirmed that all inferential tests reported had enough power (set at 0.8) to detect at least medium effect sizes. Simple effects analyses (with Bonferonni corrections) were used to follow-up significant three-way interactions, and pairwise comparisons (with Bonferonni corrections) were used to follow-up significant two-way interactions. Exploratory analyses of non-substantive prompts (within-subjects repeated-measure: procedural prompts, anchors, rapport-building) and judge's questioning are also reported.

Preliminary Analyses

Discriminant function analyses revealed no significant effects for gender, case verdicts, and the number of children testifying in each case with respect to the proportional frequency of lawyers' questions, question types, and children's responses and thus these factors were not included in any of the analyses reported below.

Questioning Frequency

In total, an average of 509.25 (SD = 320.79, n = 28,518) questions were identified in each transcript. Of these, an average of 92.73 (SD = 95.36, n = 5,193) were non-substantive prompts and 416.52 (SD = 250.86, n = 23,325) were substantive prompts. Prosecutors asked children an average of 307.77 (SD = 235.20, n = 17,235) questions; 55.30 (SD = 73.71, n = 3,097) non-substantive prompts, and 252.46 (SD = 181.98, n = 14,138) substantive prompts. Defense lawyers asked children an average of 201.48 (SD = 142.84, n = 11,283) questions; 37.43 (SD = 35.73, n = 2,096) non-substantive prompts, and 164.05 (SD = 116.05, n = 9,187) substantive prompts.

An RM-ANOVA conducted to identify associations between children's age and the proportion of non-substantive and substantive questions asked by prosecutors and defense lawyers revealed a significant main effect for examination phase, $F(1, 53)$ = 506.04, $p < .001$, η_p^2 = .91. There were significantly more substantive (M = .80, SD = .02) than non-substantive (M = .18, SD = .02) questions posed. Results also revealed a significant interaction between phase and children's age, $F(2, 53)$ = 6.97, p = .002, η_p^2 = .21. Children 12 years old and under were asked significantly more non-substantive (M = .24, SD = .03) and fewer substantive questions (M = .73, SD = .03) than children aged 13 to 14 years old (M = .13, SD = .02; M = .86, SD = .02) and 16 and 17 years old, (M = .16, SD = .03; M = .80, SD = .03), respectively. This two-way interaction was further qualified by a three-way interaction between lawyer role, examination phase, and children's age, $F(2, 53)$ = 3.72, p = .03, η_p^2 = .12. Children aged 12 years and under were significantly more likely than 13- to 15-year-olds and 16- and 17-year-olds to be asked more non-substantive and fewer substantive prompts by prosecutors. On the other hand, 16- and 17-year-olds and children aged 12 years and under were significantly more likely than 13- to 15-year-olds to be asked more non-substantive and

fewer substantive prompts by defense lawyers (see Table 2). There were no other significant main or interaction effects.

Substantive Questions

Totals, average frequencies, and average proportions of substantive prompt type subcategories by lawyer role are presented in Table 3. Unclassified questions were excluded from the following analyses. An RM-ANOVA conducted to identify associations between children's age and the proportion of substantive question types asked by prosecutors and defense lawyers revealed a significant main effect for question type, $F(2.20, 116.43) = 309.21$, $p < .001$, $\eta_p^2 = .85$. Children were prompted significantly less often using facilitators ($M = .02$, $SD = .01$) than directive ($M = .17$, $SD = .01$), option-posing ($M = .42$, $SD = .01$), or suggestive ($M = .32$, $SD = .01$) prompts, and prompted significantly less with invitations ($M = .02$, $SD = .002$) than with directive, option-posing, and suggestive prompts. Further, children were prompted significantly less with directive than with option-posing and suggestive prompts, and were prompted significantly less with suggestive than option-posing prompts. There was also a question type by lawyer role interaction, $F(2.19, 116.52) = 114.23$, $p < .001$, $\eta_p^2 = .68$. Prosecutors prompted children with significantly more invitations, directive, and option-posing prompts than did defense lawyers, whereas the latter prompted children with significantly more suggestive prompts than did prosecutors (see Table 3). The two-way interaction was further qualified by a three-way interaction between question type, lawyer role, and children's age, $F(4.39, 116.52) = 5.55$, $p < .001$, $\eta_p^2 = .17$. Children aged 12 years and under were asked significantly fewer option-posing questions than 13- to 15- and 16- and 17-year-olds by prosecutors. When questioned by defense lawyers, children aged 12 years and under were prompted with significantly more facilitators, directives, and option-posing questions than 13- to 15- and 16- and 17-year-olds. More suggestive prompts were

offered to children aged 13 to 15 years than children aged 12 years and under and 16- and 17-year-olds by defense lawyers (see Table 4). There were no other significant effects.

Suggestive Question Subtypes

An age x suggestive question subtype x lawyer role RM-ANOVA revealed a main effect for suggestive question subtype, $F(1.76, 87.90) = 151.81$, $p < .001$, $\eta_p^2 = .75$. Suggestive introductory questions ($M = .64$, $SD = .02$) were asked more than suggestive confrontational ($M = .19$, $SD = .02$) and suggestive suppositional ($M = .18$, $SD = .01$) questions (see Table 5). There was also an interaction between suggestive question subtype and children's age, $F(3.52, 87.90) = 3.16$, $p = .02$, $\eta_p^2 = .11$. Children aged 12 years and under were asked more suggestive confrontational ($M = .25$, $SD = .03$) and suggestive suppositional ($M = .22$, $SD = .03$) questions, and fewer suggestive introductory questions ($M = .55$, $SD = .04$), than 13- to 15-year-olds ($M = .16$, $SD = .02$; $M = .18$, $SD = .02$; $M = .67$, $SD = .03$) and 16- and 17-year-olds ($M = .18$, $SD = .03$; $M = .16$, $SD = .03$; $M = .66$, $SD = .04$), respectively. There was also an interaction between lawyer role and suggestive question subtype, $F(1.80, 90.18) = 14.16$, $p < .001$, $\eta_p^2 = .22$. Defense lawyers asked more confrontational questions than prosecutors, whereas prosecutors made more suggestive suppositions than defense lawyers. Prosecutors and defense lawyers were equally likely to pose suggestive introductory questions (see Table 5). There were no other significant effects.

A separate RM-ANOVA conducted to investigate associations between children's age and the proportion of suggestive tag questions asked by prosecutors and defense lawyers revealed a significant main effect for lawyer role, $F(1, 53) = 17.76$, $p < .001$, $\eta_p^2 = .25$. Defense lawyers asked proportionally more tag questions ($M = .18$, $SD = .03$) than prosecutors ($M = .05$, $SD = .02$). Importantly, there was no significant interaction between children's age and the proportion of suggestive tag questions asked by prosecutors and defense lawyers.

Children's Responses

Children responded to 4,506 of the 5,193 non-substantive prompts with non-substantive responses, 207 with substantive responses, 89 responses were inaudible, and 391 were unclassified. They responded to 21,908 of the 23,325 substantive prompts with substantive responses, 1,079 with non-substantive responses, 260 responses were inaudible, and 78 were unclassified. The remaining analyses focus on substantive question and answer pairs only ($n = 21,908$).

Children's Responsiveness

Children were almost always responsive ($M = .96$, $SD = .004$). To ensure adequate statistical power, three separate tests were conducted to investigate children's responsiveness. Facilitators were excluded from the following analyses. The first RM-ANOVA was conducted to identify associations between children's age and children's responsiveness when prompted with different question types by prosecutors and defense lawyers. The test revealed a significant main effect for question type, $F(2.11, 110.19) = 16.24$, $p < .001$, $\eta_p^2 = .24$. Children were significantly more responsive to invitations ($M = .99$, $SD = .01$) than any other question type. Children were less responsive when answering directive questions ($M = .93$, $SD = .01$) than when answering option-posing questions ($M = .96$, $SD = .004$) or suggestive questions ($M = .96$, $SD = .01$). Furthermore, there was a significant two-way interaction with question type and children's age, $F(4.24, 110.19) = 2.81$, $p = .03$, $\eta_p^2 = .10$. Children aged 12 years and under were less responsive to directives ($M = .90$, $SD = 02$) than children aged 13 to 15 years old ($M = 95$, $SD = .01$) and 16- and 17-year-olds ($M = .95$, $SD = .02$). There were no other significant main or interaction effects.

Second, a RM-ANOVA was conducted to investigate differences in children's responsiveness and suggestive question subtype. There was no significant main effect, $F(1.32, 72.33) = 3.09$, $p = .07$, $\eta_p^2 = .05$. However, children were significantly less

responsive to suggestive confrontational questions (*M* = .92, *SD* = .02) than suggestive

introductory questions (*M* = .96, *SD* = .004) and suggestive suppositional questions, *M* = .95,

SD = .01).

A paired-samples t-test showed that children were significantly less responsive to

tagged questions (*M* = .86, *SD* = .31) than untagged questions (*M* = .95, *SD* = .04), *t*(55) =

2.18, *p* = .03, *d* = .41, 95% CI [.01, .18].

Self-contradictions

In total, 973 contradictions were identified, constituting 4.4% of all children's

responses. All children contradicted themselves at least once. Table 6 provides descriptive

statistics for children's self-contradictions by question type and lawyer role. To ensure

adequate statistical power, three separate tests were conducted to investigate children's self-

contradictions. An RM-ANOVA conducted to investigate associations between children's

age and children's self-contradictions when prompted using different question types by

prosecutors and defense lawyers revealed a significant main effect for question type, F(2.21,

117.37) = 57.02, p < .001, η_p^2 = .52. Invitations (*M* = .004, *SD* = .002) elicited significantly

fewer self-contradictions than option-posing questions (*M* = .02, *SD* = .003). Suggestive

questions (*M* = .10, *SD* = .01) elicited significantly more self-contradictions than any other

question types (directives, *M* = .02, *SD* = .01; facilitators, *M* = .01, *SD* = .01). There was also

a significant interaction between question type and children's age, F(4.43, 117.37) = 2.53, p

= .04, η_p^2 = .09. More self-contradictions were elicited from children aged 12 years and

under (*M* = 13, *SD* = .02) and 16- and 17-year-olds (*M* = .10, *SD* = .02) than from 13- to 15-

year-olds (*M* = .07, *SD* = .01) when they were suggestively prompted. A significant

interaction between lawyer role and children's age, F(2, 53) = 4.10, p = .02, η_p^2 = .13 showed

that prosecutors elicited significantly more self-contradictions from 16- and 17-year-olds (*M*

= .04, *SD* = .01) than 13- to 15-year-olds (*M* = .02, *SD* = .01). There was no difference

between children aged 12 years and under ($M = .03$, $SD = .01$) and those in the other age groups when questioned by prosecutors. However, defense lawyers were significantly more likely to elicit self-contradictions from children aged 12 years and under ($M = .04$, $SD = .01$) than from 13- to 15-year-olds ($M = .03$, $SD = .004$) and 16- and 17-year-olds ($M = .02$, $SD = .01$). There were no other significant main or interaction effects.

An RM-ANOVA conducted to investigate associations between the proportion of self-contradictions and suggestive question subtype revealed a significant main effect for suggestive question subtype, $F(1.67, 92.05) = 6.42$, $p = .004$, $\eta_p^2 = .11$. Suggestive suppositional questions ($M = .02$, $SD = .003$) elicited significantly fewer self-contradictions than suggestive confrontational ($M = .04$, $SD = .01$) and suggestive introductory ($M = .04$, $SD = .004$) questions. A paired-samples t-test showed no significant difference between the proportion of self-contradictions in response to suggestive tagged and untagged questions, $t(55) = 1.77$, $p = .08$.

Children's Acquiescence/Resistance to Suggestive Questions

Of the 6,361 suggestive question-response pairs, children acquiesced to the suggestion 68.46% of the time ($n = 4,355$), and resisted the suggestion 28.86% of the time ($n = 1,836$). In 170 (2.57%) instances, the children's responses were unclassified as their acquiescence or resistance was not clear. Unclassified responses were excluded from the following analyses. An RM-ANOVA conducted to investigate associations between children's age and the proportion of suggestive question subtypes asked by prosecutors and defense lawyers that were resisted revealed a significant main effect for lawyer role, $F(1, 53) = 18.61$, $p < .001$, $\eta_p^2 = .26$. Children resisted defense lawyers' suggestive questions ($M = .37$, $SD = .03$) significantly more than prosecutors' ($M = .23$, $SD = .03$). There was also a significant main effect for suggestive question subtype, $F(1.54, 81.58) = 46.42$, $p < .001$, $\eta_p^2 = .47$. Children resisted suggestive confrontational questions ($M = .49$, $SD = .04$) significantly

more than suggestive suppositional ($M = .26$, $SD = .03$) and suggestive introductory ($M = .14$, $SD = .01$) questions. Children resisted suggestive suppositional questions significantly more than suggestive introductory questions. Lastly, there was a significant interaction between lawyer role and suggestive question subtype, $F(1.37, 72.42) = 4.45$, $p = .03$, $\eta_p^2 = .07$. Children resisted significantly more in response to confrontational questions when prompted by defense lawyers ($M = .61$, $SD = .04$) than when prompted by prosecutors ($M = .36$, $SD = .06$). Similarly, children resisted significantly more in response to suggestive suppositional questions when prompted by defense lawyers ($M = .33$, $SD = .04$) than when prompted by prosecutors ($M = .19$, $SD = .03$), and significantly more in response to suggestive introductory questions when prompted by defense lawyers ($M = .16$, $SD = .02$) than when prompted by prosecutors ($M = .12$, $SD = .02$). There were no other significant main or interaction effects. A paired-samples t-test showed that children were significantly less resistant in response to tagged ($M = .15$, $SD = .19$) than untagged questions ($M = .28$, $SD = .13$), $t(55) = 4.50$, $p < .001$, $d = .79$, 95% CI [.07, .18].

Children's Productivity

Descriptive statistics for children's productivity by substantive question subtype and lawyer role are presented in Table 7. Unclassified questions were excluded from the following analyses. An RM-ANOVA conducted to investigate associations between the productivity of children of different ages when answering different question types asked by prosecutors and defense lawyers revealed a significant main effect for lawyer role, $F(1, 53) = 57.26$, $p < .001$, $\eta_p^2 = .52$. Children were more productive in response to prosecutors ($M = 2.08$, $SD = .18$) than defense lawyers ($M = .86$, $SD = .07$). There was also a significant two-way interaction between lawyer role and children's age, $F(2, 53) = 7.24$, $p = .002$, $\eta_p^2 = .22$. Children aged 12 years and under were less productive in response to prosecutors ($M = 1.39$, $SD = .33$) than were 13- to 15-year-olds ($M = 2.74$, $SD = .25$) and 16- and 17-year-olds ($M =$

2.13, SD = .33). Further, there was a significant main effect for question type, $F(1.86, 98.41)$ = 9.75, p < .001, η_p^2 = .16. Children were significantly more productive in response to invitations (M = 2.19, SD = .33) than to option-posing prompts (M = 1.04, SD = .06), suggestive prompts (M = 1.05, SD = .05), and facilitators (M = 1.20, SD = .19). Children were also significantly more productive in response to directives (M = 1.88, SD = .13) than option-posing prompts, suggestive prompts, and facilitators. Lastly, there was a significant interaction between lawyer role and question type, $F(1.67, 88.51)$ = 19.41, p < .001, η_p^2 = .27. Children were significantly more productive in response to all question types when prompted by prosecutors than when prompted by defense lawyers (see Table 7). There were no other significant main or interaction effects.

An RM-ANOVA conducted to investigate mean productivity associations between children of different ages when answering different suggestive question subtypes asked by prosecutors and defense lawyers revealed a significant main effect for suggestive question subtype, $F(1.86, 98.70)$ = 34.74, p < .001, η_p^2 = .40. Suggestive confrontational questions (M = .52, SD = .08) were significantly less productive than suggestive suppositional (M = 1.22, SD = .09) and suggestive introductory (M = 1.04, SD = .05) questions. Further, there was a significant interaction between lawyer role and suggestive question subtype, $F(1.65, 87.63)$ = 9.31, p = .001, η_p^2 = .15. Children were more productive in response to prosecutors' (M = 1.56, SD = .14) than defense lawyers' suggestive suppositions (M = .88, SD = .12). Lastly, there was a significant interaction between lawyer role and children's age, $F(2, 53)$ = 8.56, p = .001, η_p^2 = .24. Children aged 12 years and under were less productive in response to prosecutors and more productive in response to defense lawyers (M = .66, SD = .14; M = 1.04, SD = .12) than children aged 13 to 15 years old (M = 1.19, SD = .10; M = .75, SD = .09) and 16- and 17-year-olds (M = 1.20, SD = .14; M = .71, SD = .12), respectively. There were no other significant main or interaction effects. A paired-samples t-test showed that children

were significantly less productive in response to tagged questions (M = .83, SD = .55) than

untagged questions (M = 1.04, SD = .32), $t(55)$ = 2.65, p = .01, d = .47, 95% CI [.05, .37].

Non-substantive Questions

Totals, average frequencies, and average proportions of non-substantive prompt types

by lawyer role are presented in Table 8. Due to small frequencies, inaudible prompts were

excluded from the following analyses. An RM-ANOVA conducted to identify associations

between children's age and the proportion of non-substantive prompt types asked by

prosecutors and defense lawyers revealed a significant main effect for non-substantive

prompt type, $F(1.83, 93.46)$ = 38.26, p < .001, η_p^2 = .43. Children were significantly more

likely to be questioned using procedural prompts (M = .51, SD = .03) than any other non-

substantive prompt type. Children were prompted with anchors (M = .30, SD = .03)

significantly more than rapport-building prompts (M = .15, SD = .02). There was also a two-

way interaction between non-substantive question type and age, $F(3.67, 93.46)$ = 3.46, p =

.13, η_p^2 = .12. Children aged 12 years and under received significantly more rapport-building

prompts (M = .28, SD = .04) than 13- to 15-year-olds (M = .11, SD = .03) and 16- and 17-

year-olds (M = .07, SD = .04). Children aged 13 to 15 years old received more procedural

prompts (M = .57, SD = .04) than children aged 12 years and under (M = .46, SD = .05), and

16- and 17-year-olds (M = .50, SD = .05). Lastly, 16- and 17-year-olds received more anchors

(M = .36, SD = .03), than children aged 12 years and under (M = .25, SD = .05) and 13- to 15-

year-olds (M = .30, SD = .04). There were no other significant main or interaction effects.

Judge's Questioning

Judges asked children 1,682 questions. Of these, 1,469 (87.33%) were non-

substantive and 213 (12.66%) were substantive (see Table 9). Judges asked no suggestive tag

questions. In response to substantive questions, children answered substantively 91.55% (n

=195) of the time. Of the substantive responses, children were responsive to questions

87.18% (n = 170) of the time, and unresponsive 12.82% (n = 25) of the time. In response to

suggestive questions, children acquiesced 57.45% (n = 27) of the time and resisted 42.55% (n

= 20) of the time. In total, judges elicited 9 self-contradictions from children.

Discussion

This first examination of lawyer-child witness interactions in Scottish courts yielded a

number of findings that can assist in the evaluation and implementation of currently proposed

changes to practices adopted in courts throughout the United Kingdom and other common

law jurisdictions. Additionally, documenting the Scottish experience is important since

Scotland is distinct from other common law jurisdictions such as England and Wales and

New Zealand because all evidence must be corroborated, 'precognition' requires pre-trial

disclosure of all evidence, and forensic interviews are conducted in accordance with Joint

Investigative Interview guidelines, which differ from those employed in other parts of the

United Kingdom.

As predicted, prosecutors were significantly more likely than defense lawyers to use

invitations, directives, and option-posing prompts, whereas defense lawyers were

significantly more likely than prosecutors to use suggestive prompts. Previous studies had

shown that prosecutors used more open-ended prompts whereas defense lawyers used more

suggestive prompts (Andrews et al., 2015a; Klemfuss et al., 2014; Stolzenberg & Lyon,

2014) but the present findings also made clear that the difficulties children face in court are

not solely attributable to cross-examination by defense lawyers. Prosecutors, too, used more

closed-ended than open-ended prompts, were most likely to use option-posing prompts, and

virtually never asked invitations. Indeed, the same was true of judges, too, although the

majority of the questions they asked were non-substantive. These results appear inconsistent

with findings that prosecutors in New Zealand predominantly asked open-ended questions

(Zajac et al., 2003), but are consistent with subsequent research in New Zealand showing that

prosecutors predominantly used closed-ended questions (Hanna et al., 2012; Zajac & Cannan, 2009). Moreover, they highlight the value of distinguishing between invitations, which elicit rich and detailed responses from children and are almost never asked in court, and directives, which elicit shorter responses (Lamb et al., 2008). In comparison to lawyers in the United States (Andrews et al., 2015a), prosecutors in Scotland used similar types of questions, but the Scottish defense lawyers used fewer directives (.08 vs. .13), fewer option-posing prompts (.37 vs. .46), and more suggestive questions (.49 vs. .42) than Californian defense lawyers.

As further predicted, both prosecutors and defense lawyers elicited a substantial number of inconsistencies. Although self-contradictions were proportionally rare, all children contradicted themselves at least once. Self-contradictions constituted 2.7% of all children's responses to prosecutors' questions and 6.5% of all responses to defense lawyers' questions. Interestingly, these findings are very similar to those found in Andrews et al.'s (2015) study of Californian cases (2.5% and 6.4%, respectively). Other researchers have similarly shown that most children provide some inconsistent responses when questioned in court and that more inconsistencies are elicited by defense lawyers than by prosecutors (Zajac & Cannan, 2009; Zajac et al., 2003), but self-contradictions in response to prosecutors' questions were much more common in this study and in Andrews et al.'s (2015a) study. Zajac et al. (2003) reported no self-contradictions in response to prosecutors and a range of 1 to 16 self-contradictions ($M = 3.56$) in response to defense lawyers. Zajac and Cannan (2009) reported an average of 1.03 and 5.03 self-contradictions in the direct- and cross-examinations, respectively, with an absolute range of 0-20. They noted that defense lawyers elicited self-contradictions in 93% of the cases, but did not report the percentage of cases in which prosecutors did so. As previously noted by Andrews et al. (2015a), these discrepancies can be explained by differences in the length of the transcripts examined. Both direct- and cross-examinations in the present study and in Andrews et al.'s (2015a) study were much longer on

average than those analyzed by Zajac and Cannan (2009) and Zajac et al (2003). Direct-examinations in particular were longer, probably because the New Zealand prosecutors relied to a large extent on children's pre-recorded statements. Since Zajac and her colleagues did not have access to those videotapes, they could not determine the extent to which children's in-court testimony contradicted their videotaped testimony.

Suggestive questioning places pressure on children to reconsider and change their previous responses; both experimental (e.g., Jack & Zajac, 2014; Fogliati & Bussey, 2014; Zajac & Hayne, 2003) and field (Zajac et al., 2003; this study) research has shown that children are most likely to change their answers when questioned using closed-ended suggestive prompts. In the present study, suggestive questions were more likely to elicit self-contradictions than closed-ended option-posing prompts, open-ended directives, and invitations, while option-posing questions were more likely to elicit self-contradictions than invitations. A novel examination of different types of suggestive questions showed that suggestive introductory questions were asked more often than suggestive suppositional and confrontational questions. Prosecutors posed more suggestive suppositional questions than defense lawyers, whereas, unsurprisingly, defense lawyers posed more suggestive confrontational questions than prosecutors, and children acquiesced more in response to defense lawyers' suggestions than prosecutors'. As in Orbach et al.'s (in press) study of forensic interviews, both suggestive confrontational and suggestive introductory questions elicited significantly more self-contradictions from children than suggestive suppositions. Suggestive confrontational questions are relatively easy to spot, and thus can be monitored by the court and possibly restricted when necessary. However, suggestive suppositional and introductory questions, as illustrated in Table 1, are less easy to identify, and involve lawyers assuming and introducing information not previously mentioned by the children. The present findings are thus concerning because children acquiesced to suggestive questions almost 70%

of the time, particularly when they were formulated as suggestive introductory questions.

It is widely acknowledged that tagged questions are highly suggestive and persuasive (see Plotnikoff & Wolfson, 2007; Spencer & Lamb, 2012), and, given their complexity (Walker et al., 2013), there have been calls for judges to restrict the use of tag questions, particularly when directed to the youngest children (Judicial College [fairness in courts and tribunals], 2010; R v Barker, 2010). However, 6% of all prosecutors' and 25% of all defense lawyers' suggestive questions in the present study were tagged. Children were less responsive and more acquiescent in response to tagged questions than untagged questions, and lawyers did not alter their use of tagged questions depending on the children's ages. Such findings raise serious concerns about the extent to which suggestive questions, particularly tagged questions, are avoided or proscribed in court and highlight the value of differentiating between different types of suggestive questions and the need to engage practitioners in further training.

Unlike previous studies, the present study included children of diverse ages (i.e., 5- to 17-year-olds). We expected there to be no age differences, in line with previous research indicating that lawyers do not appear to adjust their questioning style to accommodate younger children (e.g., Andrews et al., 2015a), and that this pattern would also be evident in relation to the broader age range examined in the current study. No other study has examined both substantive and non-substantive questions and we found that prosecutors asked more non-substantive and fewer substantive questions of the youngest children, whereas defense lawyers asked more non-substantive and fewer substantive questions of the oldest children. The non-substantive prompt types varied depending on the children's ages and there was no interaction with lawyer role. In particular, there were more attempts at rapport building with children aged 12 years and under than with older children, suggesting that both prosecutors and defense lawyers were more supportive of the youngest children. However, the overall

rates of rapport-building were low for all children.

With respect to substantive questions, there was a three-way interaction between question type, lawyer role, and children's age, suggesting that lawyers changed their behavior somewhat depending on the children's ages. In particular, prosecutors were least likely to ask option-posing questions of the youngest children, whereas defense lawyers asked more directive questions and facilitators of the youngest children. Children in the middle age group were asked fewer suggestive casting doubt questions than children in the oldest age group. Defense lawyers directed more option-posing questions to the youngest children, and asked more suggestive questions of those in the middle age group whereas prosecutors did not alter their behavior similarly. Additionally, the youngest children were asked more suggestive confrontational and suppositional questions (but fewer suggestive introductory questions) by both prosecutors and defense lawyers, although there were no age differences in the lawyers' use of suggestive tag questions. Overall, in line with previous research and our predictions, both prosecutors and defense lawyers were not sensitive to differences in the children's ages.

There were few age differences in children's responsiveness, although, as in previous research (Andrews et al., 2015a), children were almost always responsive to lawyers' questions and more responsive to prosecutors than defense lawyers. Interestingly, although children were generally more productive in response to prosecutors than defense lawyers, and children were more productive in response to open-ended than closed-ended prompts, the youngest children were least productive in response to prosecutors' questions. Furthermore, the youngest children were least productive in response to prosecutors' suggestions and more productive in response to defense lawyers' suggestions, perhaps because the younger children did not understand why they were being asked suggestive questions by the prosecutors. By contrast, Andrews et al. (in press) and Klemfuss et al. (2014) reported that Californian children were more productive with increasing age. Unlike previous studies, we found that

prosecutors elicited more self-contradictions from the oldest children than from children in the middle age group, whereas defense lawyers elicited fewest contradictions from the youngest children, but there were no age differences in acquiescence to suggestion. In response to suggestive questions, more self-contradictions were elicited from children aged 13 to 15 years than from the youngest and oldest children. These findings highlight children's ability to resist some suggestions by both prosecutors and defense lawyers, but also make clear that suggestive questions can have diverse effects on children depending on their age and the context.

Limitations and Further Research

As in most field studies, we were unable to determine the veracity of the allegations or of the children's specific responses. However, self-contradictions of necessity constitute false responding, since the contradictory answers cannot both be correct, and our finding that suggestive questions were most likely to elicit self-contradictions is consistent with laboratory research demonstrating that suggestive questions are most likely to elicit erroneous answers. It was, however, impossible to know which questions were misleading and which answers were accurate. Indeed, contradiction-eliciting questions during cross-examination may increase testimonial accuracy if the initial reports were untrue.

Second, we did not measure the complexity of the questions, although complexity may interact with children's age, lawyer role, and question type in affecting children's responsiveness, productivity, and consistency (Hanna et al., 2012; Zajac et al., 2009; Zajac & Hayne, 2003). However, Evans, Lee, and Lyon (2009) did not find any age or lawyer role differences in either wordiness or the syntactic complexity of the questions asked when they examined 46 4- to 15-year-olds' testimony in cases from Los Angeles. Similarly, although Zajac et al. (2009) found that adults were asked more complex questions than children, Zajac and Hayne (2003) found no relationship between age and complexity in a study of 5- to 13-

year-olds. Furthermore, Zajac et al. (2009) found that 31% of the defense lawyers' questions were complex on one dimension, but so were 25% of the prosecutors' questions, a surprisingly small difference. Indeed, Hanna et al. (2012) found differences in the complexity of the questions asked by prosecutors and defense lawyers only in relation to one of the five types examined. Hence, it seems unlikely that differences in the complexity of the questions asked may have accounted for the findings reported here. Nevertheless, it would be interesting to analyze question complexity in relation to witness age and complexity more finely and extensively, using a multi-method approach.

Third, it is clear that researchers should consider more than question type when studying cross-examinations. For example, peripheral details relating to the alleged victim's thoughts and feelings may be more emotionally salient and susceptible to suggestion than central details relating to the sexually abusive actions. Furthermore, when interpreting self-contradictions, acquiescence to suggestion may be driven as much by the content of the question as by the type of question. Future research should examine specific problems with question content, and link those findings to laboratory research on question content and children's accuracy.

Lastly, it might be fruitful to examine whether and how question type and children's responses in court are associated with children's gender and the case verdicts, although preliminary analyses revealed no significant associations in the present study, perhaps because there were many more girls than boys and many more cases that resulted in convictions than acquittals. A better-matched sample designed to investigate these research questions may yield different results.

Implications

In Scotland, as in most other western jurisdictions, defendants have the right to challenge the evidence against them. It is well established that closed-ended questions,

particularly suggestive utterances, are more likely to elicit erroneous information (e.g., APSAC, 2012; Home Office, 2011, section 3.44; Lamb et al., 2015) but of course cross-examination questions are designed not to elicit evidence but to test it (Zajac, O'Neill, & Hayne, 2012) and it remains unclear how to protect children from distress and developmentally inappropriate, misleading and confusing questions, whilst also protecting the defendants' rights to challenge their accusers. Best-practice guidelines for the questioning of child witnesses in court must allow the veracity of children's testimony to be evaluated in ways that do not exploit their developmental capacities and limitations.

There are currently very limited guidelines about how lawyers should question children in court. The guidance that does exist is neither well embraced nor well informed (Spencer & Lamb, 2012). However, it is now widely accepted in Scotland that gathering evidence from young and vulnerable witnesses requires special care, and that subjecting them to traditional adversarial forms of examination and cross-examination is no longer acceptable (Evidence and Procedure Review Report [Section 2.1], Scottish Court Service, March, 2015; Spencer & Lamb, 2012). The extent to which protective measures (e.g., a live TV link, section 271J; a screen, section 271K; a supporter, section 271L, Victims and Witnesses [Scotland] Act, 2014) are used, however, varies considerably within and between jurisdictions. Calls for a more systematic approach to gathering evidence from children was made recently in a speech to the Criminal Law Conference at Murrayfield by the [then] Lord Justice Clerk (Lord Carloway, May, 2013). In England and Wales, further changes are on the horizon, too. In particular, the fundamental proposition explored in the Evidence and Procedure Review Report (Scottish Court Service, March, 2015) is that substantial improvements can be made to the administration of justice with the widespread use of pre-recorded statements in place of testimony in court and the implementation of Ground Rules Hearings, at which judges stipulate what types of questions can be asked. These procedures

(bringing into force Section 28 of the Youth Justice and Criminal Evidence Act, 1999) are currently being piloted in England and Wales under the premise that a properly conducted witness interview before trial may be far more informative and appropriate than a belated appearance in court during the trial (Evidence and Procedure Review Report [Section 1.24], Scottish Court Service, March, 2015; Westera, Kebbell, & Milne, 2013). Furthermore, evidence-based "Toolkits" (see Advocacy Training Council (ATC), 2011) have been introduced to provide continuing education and thus improve practice in England and Wales, in recognition of the fact that many lawyers and judges need guidance on how best to question children appropriately. These Toolkits were endorsed in the Lord Chief Justice's Criminal Practice Directions (2013), but the use and effectiveness of these opinions and resources have not been systematically assessed. It is likely that systematic training of judges and lawyers, perhaps alongside the greater use of well-trained intermediaries, may be necessary to ensure that practice changes in the intended direction.

References

Advocacy Training Council (2011). Retrieved from: http://www.advocacytrainingcouncil.org

American Professional Society on the Abuse of Children, APSAC. (2012). *Practice*

guidelines: Investigative interviewing in cases of alleged child abuse. Retrieved from:

http://www.apsac.org/

Andrews, S. J., Ahern, E., Stolzenberg, S. N., & Lyon, T. D. (in press). The productivity of

wh- prompts when children testify. *Applied Cognitive Psychology.*

Andrews, S. J., Lamb, M. E., & Lyon, T. D. (2015a). Question types, responsiveness and

self-contradictions when prosecutors and defense attorneys question alleged victims

of child sexual abuse. *Applied Cognitive Psychology, 28(2),* 253-261.

doi: 10.1002/acp.3103

Andrews, S. J., Lamb, M. E., & Lyon, T. D. (2015b). The effects of question repetition on

responses in direct- and cross-examinations of children alleging sexual abuse in court.

Law and Human Behavior, 39(6), 559-570. doi: 10.1037/lhb0000152

Bettenay, C., Ridley, A. M., Henry, L. A., & Crane, L. (2014). Cross-examination: the

testimony of children with and without intellectual disabilities. *Applied Cognitive*

Psychology, 28(2), 204-214. doi: 10.1002/acp.2979

Bruck, M. & Ceci, S. J. (1999). The suggestibility of children's memory. *Annual Review of*

Psychology, 50, 419-439. doi: 10.1146/annurev.psych.50.1.419

Bruck, M., Ceci, S. J., & Principe, G. F. (2006). The child and the law. In K. A. Renninger, I.

E. Sigel, W. Damon & R. M. Lerner (Eds.), *Handbook of Child Psychology, 6th ed,*

Vol. 4 (pp. 776-816). New York, NY: John Wiley & Sons, Ltd.

Bruer, K. & Pozzulo, J. D. (2014). Influence of eyewitness age and recall error on mock juror

decision-making. *Legal and Criminological Psychology, 19(2),* 332-348. doi:

10.1111/lcrp.12001

Connolly, D. A., Price, H. L., & Gordon, H. M. (2009). Judging the credibility of historic

child sexual abuse complainants: How judges describe their decisions. *Psychology,*

Public Policy, and Law, 15(2), 102-123. doi: 10.1037/a0015339

Eisen, M. L., Goodman, G. S., Qin, J., Davis, S. L., & Crayton, J. (2007). Maltreated

children's memory: Accuracy, suggestibility, and psychopathology. *Developmental*

Psychology, 43(6), 1275-1294. doi:10.1037/0012- 1649.43.6.1275

Eisen, M. L., Qin, J., Goodman, G. S., & Davis, S. L. (2002). Memory and suggestibility in

maltreated children: Age, stress arousal, dissociation, and psychopathology. *Journal*

of Experimental Child Psychology, 83(3), 167-212. doi: 10.1016/S0022-

0965(02)00126-1

European Convention on Human Rights, Art 6(d). Retrieved from: http://www.echr.

coe.int/Documents/Convention_ENG.pdf

Evans, A. D., Lee, K., & Lyon, T. D. (2009). Complex questions asked by defense attorneys

but not prosecutors predicts convictions in child abuse trails. *Law and Human*

Behavior, 33(3), 258-264. doi: 10.1007/s10979-008-9148-6

Evidence and Procedure Review Report, Scottish Court Service (March, 2015). Retrieved

from: https://www.scotcourts.gov.uk/docs/default-source/aboutscs/reports-and-

data/reports-data/evidence-and-procedure-full-report---publication-version-

pdf.pdf?sfvrsn=2

Fisher, R. P., Brewer, N., & Mitchell, G. (2009). The relation between consistency and

accuracy of eyewitness testimony: Legal versus cognitive explanations. In R. Bull, T.

Valentine, & T. Williamson (Eds.), *Handbook of psychology of investigative*

interviewing: Current developments and future directions. Oxford, UK: Wiley-

Blackwell. doi: 10.1002/9780470747599.ch8

Fogliati, R. & Bussey, K. (2014). The effects of cross-examination on children's reports of

neutral and transgressive events. *Legal and Criminological Psychology, 19(2),* 296-315. doi: 10.1111/lcrp.12010

Hanna, K., Davies, E., Crothers, C., & Henderson, E. (2012). Questioning child witnesses in New Zealand's criminal justice system: Is cross-examination fair? *Psychiatry, Psychology and Law, 19(4),* 530-546. doi:10.1080/13218719.2011.615813

Hershkowitz, I., Fisher, S., Lamb, M. E., & Horowitz, D. (2007). Improving credibility assessment in child sexual abuse allegations: The role of the NICHD Investigative Interview Protocol. *Child Abuse and Neglect, 31(2),* 99-110. doi: 10.1016/j.chiabu.2006.09.005

Hershkowitz, I., Lamb, M. E., Orbach, Y., Katz, C., & Horowitz, D. (2012). The development of communicative and narrative skills among preschoolers: lessons from forensic interviews about child abuse. *Child Development, 83(2),* 611-622. doi: 10.1111/j.1467-8624.2011.01704.x

Home Office. (2011). *Achieving the best evidence in criminal proceedings: Guidance on interviewing victims and witnesses, and guidance on using special measures.* Retrieved from: http://www.cps.gov.uk/publications/docs/best_evidence_in_criminal_proceedings.pdf

Jack, F., Leov, J., & Zajac, R. (2014). Age-related differences in the free-recall accounts of child, adolescent, and adult witnesses. *Applied Cognitive Psychology, 28,* 30-38. doi: 10.1002/acp.2951

Jack, F. & Zajac, R. (2014). The effect of age and reminders on witnesses' responses to cross-examination-style questioning. *Journal of Applied Research in Memory and Cognition, 3,* 1-6. doi: 10.1016/j.jarmac.2013.12.001

Jones, C. H. & Pipe, M. E. (2002). How quickly do children forget events? A systematic study of children's event reports as a function of delay. *Applied Cognitive*

Psychology, 16(7), 755-768. doi: 10.1002/acp.826

Judicial College (2010). Fairness in courts and tribunals.

Klemfluss, J. Z., Quas, J. A., & Lyon, T. D. (2014). Attorney's questions and children's productivity in child sexual abuse criminal trials. *Applied Cognitive Psychology, 28(5),* 780-788. Doi: 10.1002/acp.3048

Lamb, M. E., & Fauchier, A. (2001). The effects of question type on self- contradictions by children in the course of forensic interviews. *Applied Cognitive Psychology, 15,* 483–491. doi:10.1002/acp.726

Lamb, M. E., Hershkowitz, I., Sternberg, K. J., Esplin, P. W., Hovav, M., Manor, T., & Yudilevitch, L. (1996). Effects of investigative utterance types on Israeli children's responses. *International Journal of Behavioral Development, 19(3),* 627-637. doi: 10.1177/016502549601900310

Lamb, M. E., Hershkowitz, I., Orbach, Y., & Esplin, P. W. (2008). *Tell me what happened: structured investigative interviews of child victims and witnesses.* Chichester, UK: Wiley.

Lamb, M. E., La Rooy, D. J., Malloy, L. C., & Katz, C. (Eds.). (2011). *Children's testimony: A handbook of psychological research and forensic practice.* Chichester, UK: Wiley-Blackwell.

Lamb, M. E., Malloy, L. C., Hershkowitz, I., & La Rooy, D. (2015). Children and the law. In R. M. Lerner & M. E. Lamb (Eds.), *Handbook of child psychology and developmental science (7th ed.), Volume 3, Social, emotional and personality development.* Hoboken, NJ: Wiley.

Lamb, M. E., Orbach, Y., Hershkowitz, I., Horowitz, D., & Abbott, C. B. (2007). Does the type of prompt affect the accuracy of information provided by alleged victims of abuse in forensic interviews? *Applied Cognitive Psychology, 21(9),* 1117-1130. doi:

10.1002/acp.1318

Lamb, M. E., Sternberg, K. J., & Esplin, P. W. (2000). Effects of age and delay on the

amount of information provided by alleged sex abuse victims in investigative

interviews. *Child Development, 71,* 1586 –1596. doi:10.1111/1467-8624.00250

Lamb, M. E., Sternberg, K. J., Orbach, Y., Esplin, P. W., Stewart, H., & Mitchell, S. (2003).

Age differences in young children's responses to open-ended invitations in the course

of forensic interviews. *Journal of Consulting and Clinical Psychology, 71(5),* 926–

934. doi:10.1037/0022-006X.71.5.926

London, K. & Kulkofsky, S. (2010). Factors affecting the reliability of children's reports. In

G. M. Davies & D. B Wright (Eds.), *New Frontiers in Applied Memory* (pp. 119-

141). New York, NY: Psychology Press.

Lord Carloway (May, 2013). *Scots criminal evidence and procedure – meeting the*

challenges and expectation of modern society and legal thinking. Speech addressed to

the Criminal Law Conference at Murrayfield. Retrieved from: http://www.scotland-

judiciary.org.uk/Upload/Documents/CriminalLawConferenceMurrayfield9May2013.p

df

Lord Chief Justice's Criminal Practice Directions (2013). Retrieved from:

https://www.judiciary.gov.uk/wpcontent/uploads/JCO/Documents/Practice+Direction

s/Consolidated-criminal/criminal-practice-directions-2013.pdf

Melnyk, L., Crossman, A. M., & Scullin, M. H. (2007). The suggestibility of children's

memory. In M. P. Toglia, J. D. Read, D. F. Ross & R. C. L. Lindsay (Eds.),

Handbook of eyewitness psychology, Vol 1: Memory for events (pp. 401-427).

Mahwah, NJ: Lawrence Erlbaum.

Myers, J. E., Redlich, A. D., Goodman, G. S., Prizmich, L. P., & Imwinkelried, E. (1999).

Jurors' perceptions of hearsay in child sexual abuse cases. *Psychology, Public Policy,*

and Law, 5(2), 388-419. doi: 10.1037/1076-8971.5.2.388

Orbach, Y. & Lamb, M. E. (2001). The relationship between within-interview contradictions

and eliciting interviewer utterances. *Child Abuse & Neglect, 25(3),* 323-333. doi:

10.1016/S0145-2134(00)00254-4

Orbach, Y., Lamb, M. E., Hershkowitz, I., & Abbott, C. B. (in press). Allegedly abused

children's responses to suggestion in the course of forensic interviews.

Plotnikoff, J. & Woolfson, R. (2007). *The "go-between": evaluation of intermediary*

pathfinder projects. Research Summary No. 1. London: Ministry of Justice. Retrieved

from: http://embed.policyreview.tv/media/documents/11.%20

gillian%20harrison%20summary.pdf

R v Barker [2010] EWCA Crim 4.

Rush, E., Quas, J. A., & McAuliff, B. D. (2012). Child witnesses' experiences of distress in

criminal courts: sources, consequences and solutions. In M. K. Miller & B. H.

Bornstein (Eds.), *Stress, trauma, and well-being in the legal system* (pp. 89-121).

New York, NY: Oxford University Press.

Saywitz, K. J., Lyon, T. D., & Goodman, G. S. (2011). Interviewing children. In J. E. B.

Myers (Ed.), *The APSAC handbook on child maltreatment (3rd ed.)* (pp. 337-360).

Newbury Park, CA: Sage.

Scottish Government (2011). *Guidance on joint investigative interviewing of child witnesses*

in Scotland. http://www.gov.scot/Resource/Doc/365398/0124263.pdf

Semmler, C. & Brewer, N. (2002). Effects of mood and emotion on juror processing and

judgments. *Behavioral Sciences & the Law, 20(4),* 423-436. doi:10.1002/bsl.502

Sexual Offences Act (2003). Retrieved from:

http://www.legislation.gov.uk/ukpga/2003/42/part/1/crossheading/child-sex-offences

Sixth Amendment to the US Constitution: Rights of Accused in Criminal Prosecutions (pg.

1399). Retrieved from: http://www.gpo.gov/fdsys/pkg/GPO- CONAN-

1992/pdf/GPO-CONAN-1992-10-7.pdf

Spencer, J. R. & Lamb, M. E. (2012) (Eds.). *Children and cross-examination: Time to

change the rules?* Oxford and Portland, Oregon: Hart Publishing.

Sternberg, K. J., Lamb, M. E., Davies, G. A., & Westcott, H. L. (2001). The Memorandum of

Good Practice: theory versus application. *Child Abuse & Neglect, 25(5),* 669-681.

doi: 10.1016/S0145-2134(01)00232-0

Stolzenberg, S. & Lyon, T.D. (2014). How attorneys question children about the dynamics of

sexual abuse and disclosure in criminal trials. *Psychology, Public Policy, & Law, 20,*

19-30. doi:10.1037/a0035000

Sutherland, R. & Hayne, H. (2001). Age-related changes in the misinformation effect.

Journal of Experimental Child Psychology, 79(4), 388-404.

doi:10.1006/jecp.2000.2610

Victims and Witnesses [Scotland] Act, 2014. Retrieved from:

http://www.legislation.gov.uk/asp/2014/1

Vulnerable Witnesses [Scotland] Act, 2004. Retrieved from:

http://www.legislation.gov.uk/asp/2004/3

Walker, A. G., Kenniston, J., & Inada, S. S. (2013) (Eds.). *Handbook on questioning

children: A linguistic perspective (3rd ed.).* Washington D. C.: American Bar

Association.

Waterman, A. H., Blades, M., & Spencer, C. P. (2001). Interviewing children and adults: The

effect of question format on the tendency to speculate. *Applied Cognitive Psychology,

15(5),* 521-531. doi: 10.1002/acp.741

Waterman, A. H., Blades, M., & Spencer, C. P. (2004). Indicating when you do not know the

answer: the effect of question format and interviewer knowledge on children's 'don't

know' responses. *British Journal of Developmental Psychology, 22(3),* 335-348. doi:

10.1348/0261510041552710

Westera, N., Kebbell, M., & Milne, R. (2013). Losing two thirds of the story: A

comparison of the video recorded police interview and live evidence of rape

complainants. *Criminal Law Review, 4,* 290-308.

Youth Justice and Criminal Evidence [UK] Act 1999. Retrieved from:

http://www.legislation.gov.uk/ukpga/1999/23

Zajac, R. & Cannan, P. (2009). Cross-examination of sexual assault complainants: A

developmental comparison. *Psychiatry, Psychology and Law, 16,* 36-54. doi:

10.1080/13218710802620448

Zajac, R., Gross, J., & Hayne, H. (2003). Asked and answered: Questioning children in the

courtroom. *Psychiatry, Psychology and Law, 10,* 199-209. doi:

10.1375/pplt.2003.10.1.199

Zajac, R. & Hayne, H. (2003). I don't think that's what really happened: the effect of cross-

examination on the accuracy of children's reports. *Journal of Experimental*

Psychology: Applied, 9(3), 187-195. doi: 10.1037/1076-898X.9.3.187

Zajac, R. & Hayne, H. (2006). The negative effect of cross-examination style questioning on

children's accuracy: older children are not immune. *Applied Cognitive Psychology,*

20, 3-16. doi: 10.1002/acp.1169

Zajac, R., O'Neill, S., & Hayne, H. (2012). Disorder in the courtroom? Child witnesses under

cross-examination. *Developmental Review, 32(3),* 181-204. doi:

http://dx.doi.org/10.1016/j.dr.2012.06.006

Table 1.

Coding Definitions and Examples.

Code	Definition	Example
Non-substantive prompts	Statements or questions that were not focused on the incident under investigation.	
Procedural	Comments, statements, or questions, concerning procedural aspects of the direct/cross examinations, including introductory information and instructions, taking the oath, communication rules, introduction of evidence, and labelling or defining body parts.	"Do you understand the difference between the truth and a lie?" "Tell me in words, because the tape doesn't record what you do with your head." "In your forensic interview you said…(reading from the Crown Production). Do you see that?" "Do you know the difference between your front bottom and your back bottom?"
Anchor	Utterances providing children with external (not incident related) stimulus (e.g., a holiday or a birthday, description of the location) in order to aid in the relative dating, timing, location, etc., of the investigated incident. Anchoring questions do not address details of the alleged incident directly. They are usually followed by an option-posing question, aiming to extract substantive information in the context of the anchoring stimulus.	Lawyer: "Do you remember Christmas day?" [anchor] Child: "Yes." Lawyer: "Did it happen before or after Christmas?" [option-posing] Lawyer: "On this map you can see the park and then a path leading down to the river?" [anchor] Yes: "Yes." Lawyer: "Is that the path where it happened?" [option-posing]
Rapport	Utterances designed enhance the children's trust and cooperation, and provide emotional support. Such questions may focus on the children's family, friends, school, general knowledge, or experienced neutral events not based on memory of the	"Tell me about what you like doing in your spare time." "Do you like school? What's your favorite subject?" "What did you do last Christmas? Did you get anything nice?"

incident.

Inaudible	Utterances that could not be transcribed due to poor sound quality. Partially inaudible utterances were also coded as inaudible if too much of the prompt was missing for it to be accurately classified.	Lawyer: "So he (inaudible)?" Child: "Yes." Lawyer: "(inaudible)?"
Substantive prompts	Utterances designed to elicit information about what happened during the alleged incidents, what immediately preceded or followed the alleged incidents, within-incident interventions (e.g., unexpected interruptions exposing the abuse) and witness details (e.g., witness intervention), other features of the abuse (e.g., how long the incidents lasted, where they happened), disclosure, and prior substantive formal questioning (e.g., what the child said happened in their forensic interview).	
Question types		
Invitation	Open-ended, input-free utterances used to elicit free-recall responses from children. Such questions, statements, imperatives, or contextual cues do not restrict the child's focus except in a general sense.	
General invitation	Utterances asking about a whole incident, or about one of multiple incidents disclosed.	"Tell me everything that happened from the beginning to the end." (following a disclosure) "Tell me everything about the first time/last time/time you best remember."

Follow-up invitation	Utterances asking about the last content mentioned by the child, or about the content of events occurring after the last point in time mentioned by the child.	"Tell me more about that." "Then what happened?"
Refocusing invitation	Utterances that refocus on previous content and request elaboration.	"Think back to the last time (or any other disclosed content), and tell me everything about that." (following a disclosure that it happened more than one time)
Closing invitation	A closing question. Closing invitations are regarded as a substantive only when they elicit substantive details. When a prompt is formulated as "What else happened?" and the child has not given an earlier indication that additional things happened, the question is coded as suggestive (see below) because of the lawyer's implied assumption that something else did happen.	"Is there anything else you want to tell me?"
Cued invitation	Utterances that refocus the child's attention on previously mentioned details and use them as contextual cues in open-ended invitations to elicit free-recall responses. Refocusing may relate to content cues (e.g., events, objects, people, actions) mentioned by the child.	"You mentioned (content mentioned by the child), tell me about that." "Tell me about/what happened with (content mentioned by the child)."
Segment of time invitation	A type of cued invitation. The lawyer uses one or two actions/occurrences mentioned by the child as "anchors" (i.e., a time reference) for invitations to tell about what happened before, after, or during a segment of time based on those temporal references.	"You said (occurrence/action mentioned by the child), and then what happened?" "What was the very first thing that happened before (an occurrence/action mentioned by the child)?" "Tell me everything that happened from (an occurrence/action mentioned by the child) until (another occurrence/action mentioned by the child)."

Directive	Open-ended questions that refocus the child on aspects or details of the allegation that they have previously mentioned, mostly using 'WH' utterances to request further information.	
Directive clarification	Utterances asking for clarification about what the child mentioned. This type of clarification only refers to the wording of the child, not to the facts or content of the child's statement.	"You said (child's words). What do you mean?"
Directive open	A request for information about an intrinsic feature of disclosed content, using a wh-question (who, what, when, where, how, why), allowing a multi-word response.	"Where/when/how did it happen?" "Why did you do that?
Directive narrow	A request for information about a specific attribute of disclosed content.	"What color was his t-shirt?" (when the child mentioned earlier that he was wearing a t-shirt). "Where did he touch you?" (when the child mentioned earlier that a male touched her).
Option-posing	Closed-ended questions that refocus the child's attention on details of the allegation that they have not previously mentioned, although without implying an expected response.	
Option-posing yes/no	Utterances that prompt yes/no responses.	"Did he touch your skin?" (when the child had mentioned earlier that he touched her). "Did it hurt?" "Were your clothes on when this happened?" "Was there any other time/perpetrator?"
Option-posing forced choice	Utterances that request the selection of	"Did he touch you over your clothes or under your clothes?"

	undisclosed forced-choice options.	
Option-posing open choice	Utterances that request the selection of undisclosed open-choice options, including "which" questions without explicitly stating options.	"Was his shirt red or brown or something else?" "Was that photo he showed you from a photo album or a magazine or…?" "Which hand?"
Suggestive	Statements or questions formulated in a way that communicates the expected response.	
Facilitator	Non-suggestive encouragement to continue with an ongoing response immediately following the child's response, or verbatim restatements or echoing of the last few words of the child's previous utterance.	"Okay", "Yes", "Go ahead", "And…"
Uncategorized	Clearly substantive questions that were inaudible, partially inaudible, unfinished, or interrupted before they could be accurately coded.	Lawyer: "I suggest he didn't touch you. What do you say to that?" Child: "He did." Lawyer: "But wh-" [uncategorized] Child: "He did."
Suggestive question subtypes		
Suggestive confrontation		
Doubt (3rd time)	Raising the possibility for the third time that reported information is not true.	"Is what you're telling me true?" (when asked for the 3rd time) "Did that really happen?" (when asked for the 3rd time) "Are you sure?" (when asked for the 3rd time)
Option-posing (3rd time)	An option-posing or suggestive question asked for the third time on the same issue.	Lawyer: "Did it happen once or more than once?" Child: "More than once." Lawyer: "So, it did happen more than once?" Child: "Yes." Lawyer: "This is a serious matter. I'll ask you again. Did it happen once or more than once?" [option-posing 3rd time]

Coercive confrontation internal	The lawyer refers to information disclosed by the child earlier in the direct-/cross-examination and uses it to confront the child by questioning, doubting, or contradicting his or her current statement.	Lawyer: "What happened to your trousers?" Child: "They stayed on." Lawyer: "How did he touch your privates if your trousers were on?" [coercive confrontation internal]
		Lawyer: "Earlier you said (XXX), but now you are saying that (seemingly contradicting information)."
Coercive confrontation external	The lawyer refers to knowledge of undisclosed information about the investigated incident and confronts the child by using it to contradict information s/he disclosed.	"The police detective told me that you (undisclosed information) and you said (cites the child). What do you say to that?" "You said (XXX), but your brother, who testified earlier, said that (contradicting info)."
Suggestive supposition		
Implicit assumption	The lawyer asks a question built on an implicit assumption that an undisclosed peripheral action had happened.	Child: "Then I went to meet X." Lawyer: "You met X. What did she tell you?" (when the child did not mention that X told anything)
		Child: "He then walked away." Lawyer: "Okay. Where did he go when he walked out the house?" (when the child did not mention him walking out of the house)
Suggestive implicit assumption	The lawyer asks a question built on a potentially contaminating assumption that something central to the allegation had happened.	"What else happened?" (when the child did not indicate that something else had happened) "What else did X do?" (when the child did not mention that X did anything else) "What did X do to you?" (when child did not mention that X did anything to her/him)
Suggestive explicit supposition	The lawyer asks a question built on an explicit undisclosed assumption (premise) that something had happened.	"Did it hurt when he touched you?" (when the child did not mention that s/he was touched). "Was your mother there when he touched you?" (when the child

did not mention that s/he was touched).

Contradictory supposition	The lawyer questions the child, ignoring an earlier contradicting response that rules out the question.	"Did it hurt when he touched you?" (When child said s/he was not touched)
Suggestive introduction		
Suggestive input	The lawyer introduces undisclosed information (e.g., the suspect's name, the location of the incident).	"Tell me what happened with/at (a person/place not mentioned by child)." "So, X touched you?" (when the child did not say that s/he was touched)
Suggestive summary/conclusion	The lawyer summarizes or quotes the child incorrectly; modifies, incorrectly concludes (with or without using a statement which is appended or preceded by a 'tag'), incorrectly interprets, verbalizes the child's action response beyond what the response indicates, or chooses one of two contradictory responses.	Child: "I went to the park…" Lawyer: "You said you went to skate park." Child: "X kissed me." Lawyer: "Y kissed you?" Child: "It happened on Monday or Tuesday." Lawyer: "So it happened on Monday?" "You saw a gun, didn't you?", "Didn't you see a gun?"
Non-exhaustive options	The lawyer provides restrictive, non-exhaustive options, in a forced-choice question.	"Was he lying on you or were you lying on him?" (when child only mentioned that they were lying in bed) "Did he touch you in the bedroom or in the living room?" (when child only mentioned that the suspect touched him/her at home)
External source	The lawyer refers to knowledge he has, from a specified or an unspecified external source, of undisclosed information about the investigated incident.	"Your mom told me (undisclosed information)." "I heard from the policeman that (undisclosed information)."

Tag questions	Short questions that are tagged onto the end of statements implying an expected response.	"You're lying, aren't you?" "He touched you, didn't he?" "It happened three times, right?"
Children's responses		
Responsive	Verbal and action responses related to the lawyer's previous utterance. Utterances were assigned this category even if they did not contain new informative details, or when their meaning was unclear.	Lawyer: "Did he take your trousers off?" Child: "Yes." [responsive] Lawyer: "What did he do with your trousers?" Child: "I don't know." [responsive]
Unresponsive	Responses that do not relate to the question asked in the previous lawyer utterance, but provide incident-related information. These include instances when children misunderstood the lawyers' questions.	Lawyer: "What did he say?" Child: "I was – I said "STOP" and I tried to push him away from me, but he kept holding on to my waist." [unresponsive] Lawyer: "Well that can't be right, can it? Try again. Was he standing or sitting?" Child: "He licked my private, too". [unresponsive]
Self-contradiction	Responses that negated what the children had previously disclosed during the proceedings or provided self- conflicting information.	Lawyer: "He licked you one time?" Child: "Yes." (later in the proceedings) Lawyer: "How many times did he lick you?" Child: "I don't know - like 5 times." [self-contradiction] Lawyer: "Did he touch your privates when you were in the car?" Child: "No." Lawyer: "But I thought he did touch you in the car. Did he touch your privates in the car?" Child: "No. I never - in the car he touched my privates." [self-contradiction]

Acquiescence	Children's responses that acquiesce to the suggested confrontation, supposition, or input.	Lawyer: "You're lying, aren't you?" Child: "Yes." Lawyer: "Did it hurt when he touched you?" (when the child did not mention that s/he was touched). Child: "Yes."
Resistance	Children's responses that resist the suggested confrontation, supposition, or input.	Lawyer: "You're lying, aren't you?" Child: "No." Lawyer: "Did it hurt when he touched you?" (when the child did not mention that s/he was touched). Child: "He didn't touch me."

Table 2.

Mean Proportions of Questions by Lawyer Role, Examination Phase, and Children's Age.

		Age (in years)					
		13 and under		14 and 15		16 and 17	
Lawyer	Phase	*M*	*SD*	*M*	*SD*	*M*	*SD*
Pros	NS	.26	.03	.11	.02	.12	.03
	S	.67	.04	.89	.03	.88	.04
Def	NS	.22	.04	.17	.03	.21	.04
	S	.78	.05	.83	.04	.73	.05

Table 3.

Totals, Average Frequencies, and Average Proportions of Substantive Prompt Types by Lawyer Role

| | Lawyer role | | | | | | | | | |
| | Pros | | | | | Def | | | | |
Question type	*n*	*M*(raw)	*SD*(raw)	*M*(prop)	*SD*(prop)	*n*	*M(raw)*	*SD(raw)*	*M*(prop)	*SD*(prop)
Uncategorized total	**138**	**2.38**	**3.84**	**.010**	**.022**	**191**	**3.38**	**6.71**	**.017**	**.036**
Facilitator total	**322**	**5.75**	**9.32**	**.022**	**.035**	**208**	**3.71**	**5.92**	**.023**	**.042**
General invitation	33	0.59	0.87	.002	.006	5	0.09	0.29	.000	.002
Follow-up invitation	138	2.46	4.42	.008	.009	23	0.41	1.63	.003	.011
Refocusing invitation	1	0.20	0.13	.000	.001	1	0.02	0.13	.000	.000
Closing invitation	1	0.20	0.13	.000	.000	0	0.00	0.00	.000	.000
Cued invitation	231	4.13	5.87	.015	.018	15	0.27	0.75	.001	.003
Segment of time invitation	62	1.11	2.06	.005	.013	9	0.16	0.57	.001	.006
Invitation total	**466**	**8.32**	**9.26**	**.032**	**.028**	**53**	**0.95**	**2.51**	**.006**	**.015**
Directive clarification	141	2.52	3.69	.009	.012	16	0.29	0.73	.002	.005
Directive open	1,433	25.59	20.78	.100	.048	309	5.52	7.58	.031	.029
Directive narrow	2,188	39.07	26.30	.164	.072	427	7.63	8.00	.045	.041
Directive total	**3,762**	**67.18**	**45.82**	**.280**	**.094**	**752**	**13.43**	**14.66**	**.081**	**.057**
Option-posing yes/no	6,752	120.57	103.60	.443	.104	3,121	55.73	39.78	.341	.135
Option-posing forced choice	426	7.61	8.09	.027	.023	107	1.91	2.82	.011	.015
Option-posing open choice	181	3.23	3.27	.015	.017	37	0.66	1.24	.005	.008
Option-posing total	**7,359**	**131.41**	**109.95**	**.494**	**.090**	**3,265**	**58.30**	**41.82**	**.369**	**.127**
Suggestive total	**2,091**	**37.34**	**27.23**	**.159**	**.087**	**4,718**	**84.25**	**74.25**	**.486**	**.187**

Table 4.

Age Differences in Mean Proportions of Question Types by Lawyer Role

| Lawyer | Question type | Age (in years) | | | | | |
| | | 13 and under | | 14 and 15 | | 16 and 17 | |
		M	*SD*	*M*	*SD*	*M*	*SD*
Pros	Facilitator	.03	.01	.02	.01	.02	.01
	Invitation	.04	.01	.04	.01	.02	.01
	Directive	.26	.03	.29	.02	.26	.03
	Option-posing	.43	.03	.50	.02	.52	.03
	Suggestive	.17	.02	.15	.02	.17	.02
Def	Facilitator	.05	.01	.01	.01	.02	.01
	Invitation	.01	.00	.00	.00	.00	.00
	Directive	.13	.01	.06	.01	.06	.01
	Option-posing	.42	.04	.35	.03	.31	.04
	Suggestive	.39	.05	.56	.03	.46	.05

Table 5.

Totals, Average Frequencies, and Average Proportions of Suggestive Subtypes by Lawyer Role

Suggestive subtype	Lawyer role									
	Pros					Def				
	n	*M*(raw)	*SD*(raw)	*M*(prop)	*SD*(prop)	*n*	*M(raw)*	*SD(raw)*	*M*(prop)	*SD*(prop)
Doubt (3rd time)	114	2.04	4.04	.065	.148	556	9.93	10.64	.134	.098
Option-posing (3rd time)	76	1.36	3.42	.029	.076	134	2.39	5.39	.023	.047
Coercive confrontation internal	43	0.77	1.41	.015	.027	481	8.59	12.33	.078	.074
Coercive confrontation external	24	0.43	1.23	.008	.020	212	3.79	6.82	.031	.044
Suggestive confrontation total	**257**	**4.59**	**7.66**	**.119**	**.183**	**1,373**	**24.70**	**29.49**	**.275**	**.135**
Implicit assumption	302	5.39	4.50	.162	.131	132	2.36	2.93	.032	.044
Suggestive implicit assumption	25	0.45	0.87	.014	.029	25	0.45	1.37	.008	.033
Suggestive explicit supposition	42	0.75	1.65	.024	.048	18	0.32	0.99	.005	.012
Contradictory supposition	119	2.13	3.20	.056	.080	293	5.23	6.43	.064	.090
Suggestive supposition total	**488**	**8.71**	**6.51**	**.260**	**.172**	**468**	**8.36**	**8.36**	**.113**	**.107**
Suggestive input	697	12.45	11.49	.347	.206	1,482	26.46	24.28	.309	.170
Suggestive summary/conclusion	497	8.88	9.21	.207	.142	1,154	20.61	19.55	.238	.128
Non-exhaustive options	48	0.86	1.38	.023	.033	22	0.39	0.71	.006	.013
External source	108	1.93	4.09	.043	.060	252	4.46	8.78	.056	.101
Suggestive introduction total	**1,346**	**24.11**	**19.40**	**.631**	**.216**	**2,877**	**51.96**	**44.05**	**.631**	**.158**
Tag questions	**120**	**2.14**	**5.54**	**.051**	**.120**	**1,191**	**21.27**	**30.70**	**.196**	**.120**

Table 6.

Totals, Average Frequencies, and Average Proportions of Self-contradictions by Question Type and Lawyer Role.

| | Lawyer role | | | | | | | | | |
| | Pros | | | | | Def | | | | |
Question type	*n*	*M*(raw)	*SD*(raw)	*M*(prop)	*SD*(prop)	*n*	*M(raw)*	*SD(raw)*	*M*(prop)	*SD*(prop)
Invitation	5	0.09	0.35	.118	.022	0	0.00	0.00	.000	.000
Directive	47	0.84	1.52	.034	.036	18	0.32	0.83	.086	.044
Option-posing	122	2.18	2.85	.026	.023	93	1.66	2.58	.045	.032
Suggestive	198	3.54	4.92	.110	.086	477	8.52	9.15	.121	.079
Facilitator	7	0.13	0.51	.225	.199	6	0.11	0.41	.116	.028

Table 7.

Individual Differences in Productivity: Totals, Average Frequencies, and Average Proportions by Question Subtype and Lawyer Role.

	Lawyer role					
	Pros			Def		
Question type	*n*	*M*	*SD*	*n*	*M*	*SD*
Uncategorized total	**52**	**2.14**	**3.15**	**61**	**0.95**	**1.88**
Facilitator total	**322**	**1.75**	**0.34**	**208**	**0.69**	**0.16**
General invitation	30	5.43	6.83	3	2.00	3.46
Follow-up invitation	126	4.05	4.23	20	0.90	1.52
Refocusing invitation	1	3.00	-	1	0.00	-
Closing invitation	1	3.00	-	0	0.00	0.00
Cued invitation	200	5.07	7.13	13	2.77	3.22
Segment of time invitation	55	6.76	9.65	8	0.75	0.89
Invitation total	**413**	**4.64**	**0.67**	**45**	**0.21**	**0.12**
Directive clarification	128	2.99	3.18	14	0.86	2.66
Directive open	1,327	2.84	3.64	281	2.20	3.14
Directive narrow	2,090	1.63	2.11	393	1.41	2.08
Directive total	**3,545**	**2.25**	**0.13**	**688**	**1.64**	**0.17**
Option-posing yes/no	6,482	1.10	1.92	2,992	0.83	1.37
Option-posing forced choice	417	1.40	1.70	106	1.12	1.43
Option-posing open choice	179	1.61	2.11	37	1.41	1.72
Option-posing total	**7,078**	**1.27**	**0.10**	**3,135**	**0.81**	**0.05**
Suggestive total	**1,985**	**1.75**	**0.34**	**4,376**	**0.88**	**0.06**

Table 8.

Totals, Average Frequencies, and Average Proportions of Non-substantive Prompt Types by Lawyer Role.

	Lawyer role									
	Pros					Def				
NS prompt type	*n*	*M(raw)*	*SD(raw)*	*M*(prop)	*SD*(prop)	*n*	*M(raw)*	*SD(raw)*	*M*(prop)	*SD*(prop)
Inaudible	56	1.00	2.58	.026	.061	65	1.16	4.00	.036	.123
Procedural	1,347	24.05	33.99	.536	.224	913	16.30	16.31	.525	.256
Anchor	1,088	19.43	29.71	.283	.219	792	14.14	18.07	.311	.230
Rapport building	606	10.82	32.14	.156	.175	326	5.82	15.07	.128	.202

Table 9.

Frequency of Judge's Questions by Non-substantive, Substantive, and Suggestive Question Subtypes.

Question type	n
Inaudible	0
Procedural	1,399
Anchor	25
Rapport building	45
Uncategorized	0
Facilitator	3
Invitation	6
Directive total	38
Option-posing	119
Suggestive	47
Suggestive confrontation	6
Suggestive supposition	8
Suggestive introduction	33