The Impact of Interview Style and Timing of Expert Testimony on Mock Jurors' Perceptions of Child Sexual Abuse Interviews

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Abstract

This study investigated the relationships between forensic interview styles of alleged child sexual abuse victims and timing of expert testimony regarding forensic interviewing on mock jury reasoning and decision making. It examined whether college-aged participants, individually tested as mock jurors in a hypothetical court case of abuse, can determine the difference in effectiveness between two styles of interview. It employed a 2 (Interview Style: good vs. bad interview) x 3 (Expert Testimony: none, educational testimony before all other testimony, educational testimony after all other testimony) factorial design. In the good interview condition, participants were presented with a written interview in which a non-coercive interviewer carefully asks open-ended questions to elicit a child's account. In the bad interview condition of this variable, by contrast, the interviewer elicited an account through use of closed-ended directive and leading questions. The second variable investigates whether reading a transcript of expert testimony results in different judgments of witness credibility and defendant guilt, and varies the time of introduction of the testimony. Participants read a trial summary and witness testimony and then answered questions concerning child witness credibility, expert credibility, and verdict regarding the case. Conviction rates were not dependent upon interview quality or timing of the expert witness. The expert witness was rated more credible, convincing, and helpful following bad interviews and the child was rated more convincing in good versus bad interviews.

Keywords: child abuse, forensic interviews, timing of expert testimony

The Impact of Interview Style and Timing of Expert Testimony on Mock Jurors' Perceptions of Child Sexual Abuse Interviews

Knowledge of children's suggestibility is a very important research topic, especially as it pertains to court cases. Many studies show that lay people do not know how suggestible children can be and do not seem to know that they are poor judges of children's suggestibility (Laimon & Poole, 2008; Luus, Wells, & Turtle, 1995). Moreover, they may not know the severe implications of such suggestibility in court cases. Expert witnesses' testimony may be one solution in assisting fact finders with this difficult information, and can potentially educate them in this area to assist them with their decision making in courtroom settings where children witnesses may play a defining role in a trial.

Experts may be called to court to assist fact finders in a variety of ways. Some are called to present their expert opinion on the specific case at hand while others are called to be general educators on a topic relevant to their work. Some research suggests that expert testimony may not be particularly useful to jurors, as it may only lead to skepticism and may not educate the jury properly (Cutler, Dexter, & Penrod, 1990; Levett & Kovera, 2008). Other research suggests that jurors may be educated on a particular topic but may not actually use their new knowledge to influence their decisions in court (McAuliff, Ainsworth, & Nicholson, 2008; McAuliff, Kovera, & Nunez, 2009). Furthermore, the timing at which the expert testimony is presented may play a role in how the information is used by jurors and in how well they can use it (Brekke & Borgida, 1988; Kassin, Reddy, & Tulloch, 1990; Leippe, Eisenstadt, Raunch, Seib, 2004).

Specifically, this research may apply to the investigation of child sexual abuse cases. Research has investigated the relationship between expert witness testimony and the quality of interviews of children who may have been sexually abused. Expert testimony in this area may affect jurors'

verdicts when they are educated on the qualities of a good forensic interview of a child (Buck, London, & Wright, in press). Conversely, mock jurors may learn helpful information from expert witnesses but then may not apply it to their decision making (McAuliff et al., 2008). Taken together, the timing and content of expert testimony may affect how and how much jurors learn about the quality of forensic interviews and how they apply this information to their decision making.

Children's suggestibility

Children's suggestibility is an important factor to take into consideration whenever a child enters the justice system, and in particular, when a child must be interviewed as a witness to a case. They are placed under considerable pressure that may be too much for their cognitive and social abilities. Young children may be particularly vulnerable to misinformation which is important to counter considering how many interviews most young children undergo in a sexual abuse investigation and when considering the length of time between the initial allegation and the actual trial. Some children are interviewed at least 6 or more times, and some estimates are as high as 12 interviews per child (Ceci & Bruck, 1995).

Younger children are more suggestible than older children. For instance, Quas, Goodman, Bidrose, Pipe, Craw, and Ablin (1999) found that children under the age of four were more suggestible than children age four or older. In addition, London, Bruck, and Melnyk (2009) found that older children produced more correct information than younger children, but that overall, there were no differences in levels of suggestibility across the ages of the children. Results of their study showed that 6-7-year-olds and 8-9-year-olds produced more accurate and inaccurate information. However, the youngest children (4-5-year-olds) had the highest density of false information in their narratives compared to older children.

Melnyk and Bruck (2004) investigated the effects of timing on repeated suggestive interviewing. Kindergartners observed a magic show and then underwent a memory test approximately 40 days later. Children were suggestively interviewed between the memory test and the magic show either once very close to the magic show, once very close to the memory test, or once very close to the magic show and once very close to the memory test . In general, children reported more accurate than inaccurate pieces of information. The accurate information that children reported contained more non-suggested than suggested utterances. However, children's inaccurate recall contained equal amounts of suggested and non-suggested information. In the initial and follow up interviews, children recalled similar amounts of information, however, between the initial memory test and the follow up, recall of non-suggested information increased while recall of suggested information decreased. The repetition and timing of interviews did not seem to affect children's memory accuracy.

In a second experiment by Melnyk and Bruck (2004) kindergartners were interviewed suggestively and the timing and repetition of misinformation was studied. Researchers attempted to increase effects of consolidation: here, interviews close to the event occurred only two days after and later interviews occurred only 2 days before the memory test. As in the first experiment, children's free recall contained more accurate than inaccurate information. There were similar levels of suggested and non-suggested information in children's inaccurate utterances. For accurate recall, there was less suggested than non-suggested information present. The children who received suggestive interviewing twice and the children in the early suggestive interview group had high accuracy for leading suggested information. Children in the two-interview condition showed higher misinformation effects than the other conditions.

Coxon and Valentine (1997) studied the differences in memory between children, young adults, and the elderly. After watching a recording of a kidnapping, researchers asked participants to answer questions regarding the movie. The children and elderly gave fewer correct answers and a greater number of inaccurate answers than young adults to non-misleading questions. In this study, children were found to be more suggestible than the elderly or young adults.

The length in time between an initial incident involving a child and the first interview of that child may decrease the accuracy of children's recollections. In one study, Quas et al. (1999) found that longer delays between an incident and an interview led to a decrease in the amount of the correct information given but did not necessarily lead to less accurate information. In other words, children gave smaller amounts of information, but were still accurate.

Research suggests that children may be especially suggestible when interviewed in a suggestive way or when they are not trained in source monitoring (Laimon & Poole, 2008; Poole & Lindsay, 2001). The narrative ability of children contributes to their suggestibility. In one study, Kulkofsky and Klemfuss (2008) found that children's narrative ability, and not age, predicted their resistance to suggestibility. Children who were able to generate high-quality narratives of prior events were more likely to resist suggestion than children who could not. While skill in high-quality narratives reduced children's false assents, it did not predict an increase in free-recall responses.

Huffman, Crossman, and Ceci (1997) investigated the long-term consequence of misinformation. In this study, researchers re-interviewed children who had participated in a study two years prior in which children were misinformed. The results suggest that the previous misinformation did not have long-lasting effects on children's memories. During this study, many children even recanted previous information they had given about events they had never participated in. In addition,

children accurately recalled 77% of true events. Children continued to consent to only 13% of false events that they had been misinformed about two years prior.

Garven, Wood, and Malpass (2000) studied the effects of misinformation and suggestive information on children's memories. Specifically, they studied reinforcement and found that children made false allegations against a classroom visitor 35% of the time when they had experienced reinforcement compared to 12% false allegations made by children in the control group. Reinforcement included praising a child for answering "yes" to questions and feigning disappointment when children answered "no." Also, children who received reinforcement about a false event like a helicopter ride, made false allegations 52% of the time while children in the control condition only made 5% false allegations. Upon interviewing the children a second time, researchers found that children continued to make false allegations even though the reinforcement had ceased.

Goodman, Batterman-Faunce, Schaaf, and Kenney (2002) studied the accuracy of children's memories after children were misinformed or interviewed suggestively. 7-10-year-olds were studied, and after a delay, were interviewed to see if they had absorbed the misinformation and incorporated it into their memories. The children were significantly more accurate when answering questions about abuse compared to when they answered questions about other topics.

There is clear evidence that children may be highly suggestible when put in coercive situations or when interviewed in a biased manner. Pertaining to court cases involving young children, it is important that jurors recognize these facts and apply them to their judgments of child witnesses. But can they? And if they can, do they?

Jurors' perceptions of child witnesses. While many jurors may not have experience or knowledge of children and suggestibility, they often must determine whether or not they find child witnesses credible when called to court. In one study, Pozzulo and Dempsey (2009) studied juror

perception of child witness credibility. Results suggested that mock jurors perceived child victims to be equally credible as adult victims. However, a child bystander was perceived as less credible than adult bystanders.

In another study, Holcomb and Jacquin (2007) found that jurors perceived younger child witnesses to be more believable than older witnesses. Jurors were more likely to believe 5-year-old witnesses than older ones. Child victims were deemed less credible than child bystander witnesses. Jurors also felt that testimony given by child victim witnesses was less plausible than that of bystander witnesses. It may be that mock jurors in this study believed that young children were too innocent to lie or at least would not lie, whereas they believed older children would. However, young children can be misled and can be mistaken and can lie.

McAuliff and Kovera (2007) investigated differences in knowledge of factors associated with witness suggestibility between lay persons and experts. Lay people underestimated the differences in suggestibility between age groups compared to experts. Also, lay people did not have knowledge of factors affecting witness suggestibility, including witness participation, event detail centrality, and source prestige. However, lay people believed that an expert witness could help educate them on such matters and believed that they were uneducated in these areas and rated themselves as such. Experts and lay people all agreed that suggestibility decreases with age. Experts, but not lay people, believed that witnesses were less suggestible for information central to the event. Experts also believed that active witnesses, as compared to bystanders, were more resistant to misinformation and suggestion. However, both experts and lay people believed that witnesses who were not warned were more susceptible to misinformation and suggestion than warned witnesses. Only experts believed that sources high in prestige had a worse impact on memory and suggestion than sources of less prestige.

While jurors did believe that expert testimony on these issues would be helpful in a real court scenario, they believed so to a lesser extent than did college students or experts.

Children may be perceived as more credible when jurors are able to observe full-length testimony, as opposed to solely judging credibility based on a still-frame of a child witness. Luus, Wells, and Turtle (1995) found that young children were judged more favorably when a video of their entire testimony was shown to mock jurors rather than only a still-frame being shown. In the same study, mock jurors perceived 8-year-olds to be more accurate, equally confident, and equally believable as adult witnesses under cross examination. This study suggests that jurors often depend on the perceived confidence of the witness when judging credibility and those who they perceive as confident they also perceive as accurate and credible.

Leippe, Manion, and Romanczyk (1992) studied participants' perceptions of witness memory for accurate and inaccurate witnesses. In two of three experiments, the participants judged adult witnesses as more believable and more accurate than children. Also, adults and children who were determined to be accurate were perceived by participants to be more accurate and more believable than inaccurate ones. However, some participants focused too much on confidence and not enough on other factors when judging accuracy of witnesses.

Goodman, Batterman-Faunce, Schaff, and Kenney (2002) studied the differences between professionals' and non-professionals' perceptions of child witnesses. They found that non-professionals were more likely than professionals to believe that children were too afraid to discuss sexual abuse. Non-professionals perceived boys to be more accurate than girls and were more confident in boys' testimonies. In this study, participants were more likely to believe that 7-year-olds had been abused than 10-year-olds. Professionals were significantly less likely than non-professionals to believe that credible evidence of child abuse existed in the mock cases, but professionals who had

experience with or knew a child who had been sexually abused were significantly more likely to rate children as having been abused.

The accuracy of juror's perceptions of child witnesses. Jurors may believe that they are knowledgeable about children and suggestibility, when in reality, they are not. This is problematic because they may use false information to make important decisions, such as a conviction, based on incorrect information.

Luus et al. (1995) studied jurors' perceptions of child witnesses and the accuracies of their judgments. They found that mock jurors judged 8-year-old witnesses as being better or equal to adult witnesses even though in reality, the 8-year-olds were significantly less accurate compared to adult witnesses. In addition, Leippe et al. (1992) found that in two of three studies, participants judged adults as more accurate and believable than children, even though the adults and children were equally accurate.

Goodman, Batterman-Faunce, Schaff, and Kenney (2002) studied the accuracy of the perceptions of professionals and non-professionals when judging child testimony. Both professionals and non-professionals were poor judges of children's accuracy. Additionally, Lindholm (2008) studied the accuracy of participants' ability to judge eyewitness testimony for correctness. Professionals and non-professionals were asked to judge eyewitness memory by either reviewing a transcription of testimony or by viewing a video tape. Detectives were best at determining accuracy of witnesses. Overall, participants were better at judging witness accuracy when reading transcripts compared to watching videotapes.

Forensic interviews

Forensic interviews must be carefully conducted to reduce misinformation in young children (Poole & Lamb, 1998). Certain techniques of interviewing must be avoided to reduce misinformation,

including close-ended questions and rewards and/or punishment for specific answers (Poole & Lindsay, 2001). The accuracy of children's reports declines with the use of close-ended questions, especially for younger children (Poole & Lindsay, 2001). Training children in source monitoring may improve their accuracy; however, this may not be true for younger children, suggesting that misinformation must be avoided from the very beginning of investigations (Poole & Lindsay, 2001).

Truth and lie ceremonies and training in using "I don't know" as an appropriate answer can increase the accuracy of children's reports. When children are trained that "I don't know" is an acceptable response during the interview process, accuracy may greatly increase (Nesbitt & Markham, 1999). In another study, Quas et al. (1999) found that children who did not answer "I don't know" frequently, falsely assented to events which did not actually take place, indicating the need for instruction on using "I don't know" as an appropriate answer.

Lay persons' understanding of child forensic interviews. Buck, Warren, and Brigham (2004) investigated mock jurors' perceptions of testimony about forensic interviews of child abuse. In this study, type of testimony was studied (a child interview or hearsay testimony), interview quality (good, typical, or poor), and victim age (4- or 10-years-old). Participants who heard the testimony of the victim were significantly more likely to rate the defendant as guilty when the quality of the interview was good rather than poor or typical. Participants in the hearsay conditions did not vary their verdicts based on interview quality. In general, females were more likely than males to believe the defendant was guilty. Participants in the poor interview quality condition were more likely to believe the defendant was guilty when they read the transcript of the hearsay witness rather than reading the interview. When interview quality was good, participants' verdicts did not vary for the interview or hearsay conditions. Participants who read the child's interview and who were in the good quality condition believed the defendant abused the child significantly more than participants in other

conditions, believed the child was more truthful, believed the child was more believable, less suggestible, and believed the child had better memories for the abuse than participants in the other conditions.

Buck, London, and Wright (in press) investigated forensic interview quality, expert testimony, and the age of alleged child victims of sexual abuse. When expert testimony was not presented, mock jurors did not consider the quality of forensic interviews when determining defendant verdict. When expert testimony was presented, participants were more likely to convict the defendant when interview quality was good versus poor. Also, the expert successfully educated mock jurors on aspects of child witnesses.

Problems relating to forensic interviews. Children may experience considerable stress when they are forced to testify in court, especially during child sexual abuse trials (Goodman et al., 1992). Furthermore, children's testimony in court may be less accurate than testimony presented elsewhere, and courtroom procedures, such as disclosing testimony in front of many others, including the accused, may make children less likely to disclose details of abuse or alleged abuse (Sas, 1991; Saywitz & Nathanson, 1993). For these reasons, it may be to the best of everyone's interests, including the child, defendant, and jury, to hear the child's story in some other way. Alternatives to the child testifying on the stand include videotaped testimony of the child, closed-circuit television testimony (CCTV), hearsay testimony, or videotaped interviews or statements. Videotaped testimony entails the child's testimony being videotaped before the trial and being presented to the jurors during the trial. CCTV allows the child to be videotaped live and transmitted to the courtroom. Hearsay testimony allows the child's out-of-court statements to be presented by another during the course of the trial; however, most states then require the child to present testimony in court as well. Videotaped

interviews or statements could allow the child's forensic interview to be presented to jurors during the trial (McAuliff & Kovera, 2002).

Videotaped testimony and CCTV are currently allowed in 37 states, hearsay testimony for child sexual abuse cases is allowed in 33 states, but problematically, only 16 states allow videotaped interviews or statements (McAuliff & Kovera, 2002). This means that some of the potentially most accurate information from the child is often not allowed to enter court. Instead, the child's actual testimony is presented, which has been practiced, rehearsed, and potentially modified from the original information. Perhaps policy changes must be made so that jurors can see forensic interviews during trials so that pertinent and accurate information can be used to base decisions upon.

Expert testimony

The effect of many factors of expert testimony on mock jurors has been greatly studied. Researchers have investigated what types of expert testimony may be most effective for educating lay people and others have studied the effects of timing of expert testimony of juror perceptions. While some research indicates that expert testimony may be helpful to jurors and may sensitize them to important issues, other research suggests that expert testimony may just produce skepticism in the jury (Cutler, Penrod, & Dexter, 1989; Kovera & Borgida, 1997; Kovera, Gresham, Borgida, Gray, & Regan, 1997).

Types of expert testimony. Kovera et al. (1997) investigated how different types of expert testimony would influence mock jurors' perceptions of a child witness in a sexual abuse case. Expert testimony conditions included none present, standard (a summary of the research in the field), repetitive (standard testimony with the addition of a second research summary), or concrete (standard testimony with the addition of a hypothetical example that linked case facts to the general research). Repetitive expert testimony strengthened jurors' perceptions of the child's testimony. Concrete plus

standard expert testimony did not strengthen the child's testimony. Additionally, concrete expert testimony sensitized mock jurors to behavioral correlates of child sexual abuse, but standard plus repetitive expert testimony desensitized jurors to behavioral correlates of sexual abuse. Brekke and Borgida (1988) found that jurors could best use expert scientific testimony when it was linked in a very concrete way to the true case at hand. They found that expert testimony was much more useful when presented with concrete examples pertaining to the case compared to abstract examples.

Levett and Kovera (2008) investigated the effectiveness of opposing expert testimony in educating jurors about untrustworthy expert evidence. They varied the quality of the expert testimony of the defense and the type of opposing expert testimony for the prosecution. The evidence quality was either valid, missing a control group, or lacked counterbalancing. The opposing expert of the prosecution was either standard, absent, or focused on the methodology of the defense's expert testimony. The presence of an opposing prosecution expert did not sensitize jurors to the methodology of the defense expert, but rather caused them to be skeptical of all expert information and testimony. Regardless of the form of opposing expert testimony, when opposing expert testimony was present, jurors were more likely to give guilty verdicts.

McAuliff, Ainsworth, and Nicholson (2008) investigated the interaction between expert testimony, interview suggestiveness, and victim age. Many forms of expert testimony were studied, including standard, hypothetical, repetitive, and no expert testimony. In the standard condition, mock jurors were given information about interviewer authority, the impact of a witness' age, and event detail centrality. In the hypothetical condition, the attorney offered hypothetical examples that were similar to facts from the case at hand. In the repetitive condition, the expert repeated a summary of his findings. In addition, interview suggestiveness varied and was either high or low: in the high suggestiveness condition, the victim was interviewed by a figure of high authority and was

questioned about peripheral details to the case. In the low suggestiveness condition, the victim was not questioned by a figure of authority and was not questioned about peripheral details. The victim was 5, 10, or 15 years old. Participants who heard expert testimony believed it was easier to mislead 5-year-olds than 10- or 15-year-olds. Participants who heard hypothetical expert testimony believed that witnesses who were misled by high authority figures were more inaccurate than did the participants in other conditions. Participants in the hypothetical condition found 5-year-olds as more suggestible than did participants in other conditions. Results showed that participants learned about witness suggestibility when they heard from an expert, but the data suggests that they did not apply this information to their judgments.

McAuliff, Kovera, and Nunez (2009) investigated the scientific quality of expert testimony and its relationship to credibility and verdict. They found that mock jurors perceived evidence quality to be greater when the expert presented a study in which there was a control group. However, mock jurors' ratings of evidence quality showed no differences for studies in which there was experimenter bias or confounds. Also, jurors rated experts in the valid study condition where there was a control group as more credible than the expert who presented the study with no control group. Expert evidence quality was positively related to mock jurors' verdicts: when evidence quality was high and plaintiff credibility was high, they were more likely to find the defendant of the case liable.

Cooper, Bennett, and Sukel (1996) studied how the credentials of expert witnesses and the scientific aspects and complexity of their testimony would affect jurors' decision making. They found that when expert testimony was complex and scientific, jurors were more apt to believe an expert witness with more impressive credentials. Conversely, when the expert's testimony was understandable, there were no significant differences between preference for the expert with impressive credentials or unimpressive credentials. This research suggests that when testimony is

complex and difficult to understand, jurors will solely make their judgments on the expert's credentials.

Types of evidence and expert testimony. Kovera, Levy, Borgida, and Penrod (1994) investigated the type of evidence presented (probabilistic versus case history), the type of cross examination given (strong versus weak), and the participants' gender on mock jurors' perceptions of the expert, the victim, and the defendant. Participants were more likely to convict the defendant when they viewed expert testimony. Participants found the cross examination given by the defense attorney most effective for the syndromal evidence and the cross in the credibility condition more effective than the cross in the AD dolls condition. Participants in the syndromal condition viewed expert testimony as less important than participants in the credibility or AD dolls condition. Also, participants in the syndromal condition found the expert less helpful than did those in the credibility or AD dolls conditions. Additionally, participants in the syndromal condition remembered less information from the expert's testimony than did those in the credibility or AD dolls conditions. Male participants found the expert to be less helpful than women did in the syndromal and AD dolls conditions, and males and females did not differ in the credibility condition. Participants who viewed a strong cross examination by the defense attorney believed the defense attorney's examination was more effective than those who witnessed a weak cross examination. Additionally, more evidence presented by non-expert witnesses was recalled by participants who witnessed a strong cross examination than by those who witnessed a weak one. In general, those participants who heard expert testimony had better recall of judge's instruction and were more likely to convict the defendant.

In the same study, many participant gender differences were present. Men believed that the child witness was less believable than did women when they witnessed a weak cross examination and men were less likely than women to recall the judge's instructions. Also, women were more pro-

prosecution than were men. Women also rated the expert witness's testimony more positively than did men and found the expert to be more important and helpful. The cross examination by the defense attorney was perceived as more effective by women than men, and women found the psychological evidence provided to more scientific than did men. Women also found the defendant to be less credible than did men.

Crowley, O'Callaghan, and Ball (1994) studied the impact of expert psychological testimony on jurors' perceptions of eyewitnesses. They varied the child's age (6, 9, or 12 years), the child's gender, and the presence or absence of expert testimony. Jurors perceived the expert to be very impartial and useful. Also, female participants were much more likely than males to find the defendant guilty and to rate the child witness as being credible. Jurors who heard the expert testify about the cognitive abilities of children were much more likely to believe that the child witness in the case was very capable in these areas. Furthermore, participants who heard expert testimony gave significantly higher ratings of guilt on a 10-point scale, but when the verdict was solely looked at dichotomously (guilty/not guilty) there was no significant difference between those participants who heard and those who did not hear the expert testify.

Juror skepticism and sensitivity to expert testimony. Kovera and Borgida (1997) studied aspects of child sexual abuse that may or may not be agreed upon by experts and non-experts. Specifically, they asked experts and non-experts many questions pertaining to beliefs about child abuse and investigated where there was consensus amongst experts, non-experts, and both. For areas where experts were in agreement on child sexual abuse issues and where non-experts were not, they believed that an expert's testimony would be helpful to explain such issues in court. For instance, they determined that expert testimony would be useful to lay people in the areas of Child Abuse Accommodation Syndrome (CSAAS), children's cognitive abilities, how capable children are of

distinguishing between reality and fantasy, how easily children may be manipulated into giving false reports of abuse, offender characteristics, and the symptoms of victims. Furthermore, this study suggests that expert testimony may be useful for jurors and that it may not produce skepticism, and only sensitizes jurors to important issues.

Kovera, McAuliff, and Hebert (1999) studied jurors' reasoning about scientific evidence. Results showed that men were more likely to find for the plaintiff upon listening to expert testimony. Women's liability judgments were unaffected by expert testimony. Additionally, the effects of cross examination were studied and results showed that cross examination did not sensitive jurors to evidence quality.

Cutler, Penrod, and Dexter (1989) studied the affect of expert witness testimony on jurors who were educated about eyewitness evidence and identification. They found that observing an expert witness enhanced jury sensitivity to eyewitness evidence. Also, after hearing an expert testify, mock jurors paid more attention to identification and witnessing conditions than they did to witness confidence. Importantly, hearing an expert testify sensitized jurors to new information and did not create skepticism.

The timing of expert testimony. It is very important to investigate the effects of the timing of expert witnesses in order to determine when they are most effective. Previous research differs in this area: while some results suggest that presenting the expert first is best, others suggest that presenting the expert last is best. It is necessary to determine which timing is most effective, as currently there is a typical court procedure which presents the expert testimony last. If this is not the most effective, then psychological research could inform policy changes which could lead to more fair and effective policies.

Brekke and Borgida (1988) found that the type and timing of expert testimony affected jurors' perceptions and understanding of the evidence of the case. The results of their study suggest that jurors can best incorporate expert testimony when the expert presents the information early in the trial and when the expert presents very concrete specific examples pertaining of knowledge and evidence linked to the case. This suggests that jurors can best interpret the facts of a case in the desired way when an expert provides a lens of evidence and knowledge early on through which they can interpret them. When the expert testimony is provided late in the trial, it may be difficult for jurors' to see past their already conceived views of the case, so they may be unable to retroactively view the facts of case with the new expert knowledge if it occurs too late.

Leippe, Eisenstadt, Rauch, and Seib (2004) studied the timing of expert testimony on eyewitness memory, jurors' need for cognition, and the strength of the case. The strength of the prosecution's case was varied and was either weak (little incriminating evidence) or strong (implicated the defendant in many ways). The timing of the expert testimony varied as well and was presented either immediately after the prosecution's opening arguments or immediately after all other evidence was given, and a control was used where no expert presented testimony at all. In general, mock jurors who heard expert witness testimony perceived the eyewitness as less believable than those who did not hear expert testimony. When the expert was presented prior to all other evidence, there was little to no effect on the jurors' perceptions of the expert or on the verdict. In fact, expert testimony only played a large role in shaping the jurors' beliefs when it was presented after all other testimony and when the judge reminded the jurors of the expert's testimony.

Kassin, Reddy, and Tulloch (1990) studied the timing of evidence, jurors' need for cognition, and the type of evidence presented. Participants who were high in the need-for-cognition were more affected by arguments that preceded evidence than by those that came after. Conversely, participants

low in the need-for-cognition were more affected by arguments that followed evidence than by those that came before it.

The gender of the testifying expert may sometimes play a role in juror perception and judgment. Schuller and Cripps (1998) studied the interaction between an expert's gender and the timing of their testimony and found that when an expert was female and the expert's testimony was presented prior to the defendant's, jurors' verdicts were more lenient. Also, when an expert was female, participants found the defendant's testimony to be more believable, they found the defendant less responsible, and they found another person included in the case more responsible.

Overview. In cases of child sexual abuse, the quality of forensic interviews is paramount. Because the first forensic interview conducted, if done so well, is the most accurate, it is essential that jurors be given access to its content in order to use the most precise information possible to make their decisions about defendant guilt. Because laypeople often do not know how suggestible children can be, or how devastating poorly conducted interview can be, it is imperative that they be taught through the use of expert testimony. What form of expert testimony helps jurors learn and understand the most? When should the expert's testimony be presented to be most helpful? Once jurors comprehend important information pertaining to court cases, how can experts help them apply it to their reasoning and judgments? Can experts help them apply information to their judgments? Answers to these questions have huge implications for defendants, children victims or alleged victims, and others. It is possible that changes must be made to standard court procedures in order to accommodate psychological literature in this area that answers these hard questions.

Method

Participants

Participants included 75 students ranging from 17-44 years of age, 14 of which were males and 61 of which were females. They were recruited from an urban, liberal arts, private university in New York and participated for course credit. The racial composition was 67% Caucasian, 8% African-American, 19% Hispanic, 1% Asian, and 5% mixed/other.

Design

This study employed a 2 (Interview Style: good vs. bad interview) x 3 (Expert Testimony: none, educational testimony before all other testimony, educational testimony after all other testimony) between-subjects factorial design.

Materials and Apparatus

Participants used computers in a university computer lab to access the internet and an online survey tool, Qualtrics, to participate in the study. Participants were randomly assigned to one of six conditions and were emailed a link for a matching Qualtrics survey. First, paper informed consents were dispersed (Appendix A). Then, the survey tool provided all of the remaining stimuli of the study. Using the survey tool, participants completed a demographic questionnaire (Appendix B). Please refer to Table 1 for demographic statistics. Next, participants read a case summary, which was adapted from a Frontline case synopsis regarding the Fells Acres Day School trial from 1986-87 (Appendix C; Frontline, Innocence Lost, 1998), a transcript of the expert witness which was adapted partially from Maggie Bruck's deposition for the Frank Fuster case and from suggestions on how to properly use expert testimony from Stern (1997) (Appendix D; Bruck, 1999), a good or bad interview, depending on their condition, which was based upon the National Institute for Child Health

and Development (NICHD) protocol of forensic interviews of children (Appendices E and F; Lamb, Hershkowitz, Orbach, & Esplin, 2008; Poole & Lamb, 1998), completed a manipulation check (Appendix G), completed multiple dependent variables (Appendix H), and read a debriefing sheet (Appendix I).

Procedure

First, participants were asked to give informed consent (see Appendix A). Participation in the study was completely voluntary and was completely confidential and anonymous. To ensure confidentiality, participants were asked their names only once in the beginning of the study so that credit for participation could be issued. At that time, participants were given a participant number to use during their participation. All responses to this study are confidential and no one, not even the experimenter, knew which participant name corresponds to which participant number. Participant names did not appear anywhere within this study. All responses were only marked by the anonymous participant number. Participants were free to withdraw from the study at any time without penalty. Please refer to Appendix A for more information regarding the informed consent.

After giving their informed consent, participants completed a demographic questionnaire which also included screening questions pertaining to sexual abuse. For more information, please refer to Appendix B.

Next, participants were given instructions to go online to access a Qualtrics questionnaire. The questionnaire guided them through a trial summary of an alleged child sexual abuse trial which was based on a compilation of real cases and on the NICHD protocol of child forensic interviews (Lamb et al, 2008; Poole & Lamb, 1998).

Once participants accessed the summary via Qualtrics, they read a short summary of the back story of the mock trial. This included the child's explanation of the alleged event of abuse, the

defendant's explanation of the abuse, and other details reported by the child's mother. For more details, please refer to the summary in Appendix C.

Next, participants either read testimony from an expert witness or testimony from the child witness. Expert testimony was either presented before all other testimony, after all other testimony, or not at all. The testimony from the expert witness included the expert's qualifications, general information about professional aspects of psychology and research, the expert's reason for attending the trial, and pertinent information regarding children eyewitnesses and children's memory. The expert witness informed the mock jurors of current research in the field of child development regarding memory accuracy and informed them of the best and worst practices in the forensic interviewing of children. The testimony explained how children may be interviewed suggestively and suggested alternatives that lead to less biased and more accurate information. Throughout the expert testimony, specific examples of good and bad practices in forensic interviewing were given. Lastly, the expert testimony summarized the best and worst practices in forensic interviewing. Please refer to Appendix D for more information regarding the expert witness's testimony.

The interview of the child witness was presented either before or after the expert witness testimony. The interviews varied so that approximately fifty percent of participants read a closed, or suggestive, interview, while the others read an open, or unbiased, interview. The interviews were approximately equal in length and contained all of the same necessary information from the case. The interviews only varied in the way that the interviewer elicited information from the child witness. For more information, please refer to the Appendices E and F where both interview variations are included.

Next, participants were asked to complete a manipulation check (Appendix G) to verify that they had retained enough information from the trial summary to answer questions of the dependant

variables. Afterwards, they were asked to answer questions pertaining to the trial summary (see Appendix H). Lastly, they were debriefed (see Appendix I) and thanked for their time. Participants completed the entirety of the study within 30 minutes.

Results

In an ideal world, expert testimony would inform jurors of the best- and worst - practices of forensic interview of alleged child abuse victims and would successfully educate them. In response, jurors would use this information to inform their own decision making in court cases regarding abuse, and would make decisions of conviction accordingly. While it was hypothesized that timing of the expert witness and forensic interview quality would systematically affect juror verdict, there were no significant differences due to timing and/or interview quality on verdict ratings (χ^2 (5, N = 75), $p >$ .05). Table 2 shows that no differences exist between conditions for defendant verdict, and in fact, indicate that ratings of guilt are quite high, regardless of condition. 54 participants (72%) rated the defendant guilty while 21 participants (28%) rated him not guilty.

It was also predicted that a number of other variables might differentially predict verdict, including participant gender, ethnicity, and whether or not participants themselves experienced abuse. However, none if these factors affected jurors' ratings of guilt. Table 3 illustrates that there was a slight trend of women convicting the defendant more than men, although no significant difference was found due to low cell size (χ^2 (1, N = 75), $p >$ .05).

Table 4 lists ratings of defendant guilt by participant ethnicity. Although previous research suggested differences in conviction rates among different ethnicities, no differences were found in this study (χ^2 (4, N = 75), $p >$ .05).

Table 5 illustrates the mean prison sentences assigned by those who rated the defendant guilty by condition. In every condition, sentence length was quite long, and no significant differences exist

between conditions (F (5, 48) = .43, p >.05). The mean prison sentence assigned across all conditions was 7.74 (SD = 4.66). Figure 1 illustrates that there was a significant positive correlation between confidence that the defendant was guilty and prison sentence length (r = .51, p < .001).

It was also hypothesized that belief that the child was abused would be differentially predicted by interview quality and the timing of expert testimony. Table 6 illustrates that belief that the child was abused did not differ by condition (χ^2 (5, N = 75), p > .05). In fact, overall belief that the child was abused was quite high; a total of 57 participants (76%) believed the child had been abused while 18 (24%) believed the child was not abused.

As with defendant conviction, it was predicted that gender differences would exist in belief that the child was abused. Table 3 illustrates belief that the child was abused by participant gender. While there was a slight trend in women believing the child was abused more frequently than men, no significant differences were found (χ^2 (1, N = 75), p > .05). Table 4 illustrates belief that the child was abused by participant ethnicity. Although a slight trend was seen, with minorities being more pro-prosecution than Caucasians, no significant differences were found (χ^2 (4, N = 75), p > .05).

Table 7 shows participant ratings of the forensic interviewer and the forensic interview. It appears that the jurors could recognize some signs of a bad interview, regardless of expert timing. The interviewer was seen to be significantly more leading in the bad (M = 6.13, SD = 1.19) versus good interviews (M = 3.84, SD = 1.64) (F (1,45) = 19.7, p <.001). Also, the interview was seen as significantly more biased in the bad (M = 6.08, SD = 1.15) versus good (M = 3.35, SD = 1.87) interview conditions (F (1,45) = 29.56, p < .001). Table 8 illustrates that no differences exist between ratings of the interview and interviewer by specific condition, indicating that the expert witness did not affect jurors' perceptions.

Table 9 shows ratings of the child witness by condition. A series of one-way ANOVAs revealed that the child was rated as significantly more convincing in the good (M = 5.00, SD = 1.58) versus bad (M = 3.58, SD = 1.39) interview conditions (F (1,45) = 11.83, p < .001). However, the child witness ratings did not differ by individual condition on child convincingness. Also, child credibility did not vary by condition. Additionally, the likelihood that the child intentionally lied did not differ by condition.

As seen in Figure 2, a two-way ANOVA revealed an interaction between timing of the expert and interview quality for expert convincingness (F (1,45) = 4.92, p = .032). Table 10 illustrates that when the expert was presented after a bad interview (M = 6.62, SD = .87), he was rated significantly more convincing than when presented after a good interview (M = 5.5, SD = 1.24) (t (22) = -2.62, p = .015).

Figure 3 demonstrates that a two-way ANOVA revealed an interaction between timing of the expert and interview quality for ratings of expert helpfulness (F (1,45) = 4.02, p = .051). Table 10 shows that the expert was rated significantly more helpful when presented after a bad interview (M = 6.62, SD = .87) versus before a bad interview (M = 5.5, SD = 1.31) (t (23) = -2.52, p = .019). Also, the expert was rated significantly more helpful when presented after a bad interview (M = 6.62, SD = .87) versus after a good interview (M = 5.58, SD = 1.38) (t (23) = 2.26, p = .034).

Figure 4 displays that a two-way ANOVA revealed an interaction between timing and interview quality for ratings of expert clarity (F (1,45) = 3.99, p = .052). However, as seen in Table 10, no simple effects were found.

Figure 5 illustrates a two-way ANOVA which revealed an interaction between timing of the expert and interview quality for expert credibility (F (1,45) = 4.40, p = .042).

Table 10 illustrates that the expert was rated significantly more credible when presented after a bad interview (M = 6.46, SD = .66) versus before a bad interview (M = 5.42, SD = 1.38) (t (23) = -2.45, p = .022).

To summarize, the expert witness was deemed more convincing, more helpful, and more credible when following a bad interview. Ratings of the expert did not differ by interview quality and/or timing of the expert for expert trustworthiness, knowledgeableness, necessity to the interview, amount the expert was relied upon, and necessity to the case at hand. The bad interview was deemed more biased and more leading than the good interview. These ratings varied by interview quality alone and were not affected by expert timing.

Discussion

The timing (or absence) of the expert's testimony and the quality of the forensic interview affected few of the mock jurors' ratings. In fact, verdicts of guilt, belief that the child was abused, and prison sentence were all unaffected. Likewise, participants' belief that the child was abused was not affected by manipulations of interview quality or the timing or absence of the expert witness. However, 72% of participants rated the defendant guilty and 28% not guilty and 76% believed the child was abused while 24% believed the child was not abused. These findings have been substantiated by similar studies with similar findings (McAuliff et. al, 2008).

Buck et al. (in press) found that typical interview conditions with 4-year-old witnesses led to more guilty verdicts than typical interviews with 10-year-old victims. They also found that when no expert testimony was given, interview quality did not affect participants' ratings of verdict, which was replicated in the present study. Conversely to the current study, they found that, when expert testimony was presented, interview quality largely affected verdicts of guilt. It is unclear how the present study differed from that of Buck et al. (in press) or why the results differed so. It is still

unclear how mock jurors may be guided to inform their verdict decisions based on the testimony and evidence at hand.

It appears that some participants believed the child was abused but did not rate the defendant guilty – however, it appears that few participants were skeptical after hearing the expert witness or after viewing the bad interview, which is worrisome. Even though the case summary was meant to be highly ambiguous, it seems that the participants did not view it as such or that they were burdened with the decision to convict or not convict a potential abuser in such a way that they voted to convict the majority of the time just to be safe.

Previous research suggests that women are more pro-prosecution in child sexual abuse cases than men (Buck et. al, 2004; Crowley et. al, 1994; Kovera et. al, 1994). While there was a slight trend illustrating this difference, there was no evidence of support in this study: even though women voted to convict more than men, due to low cell size there was no significance difference found. Additionally, past research found African Americans were less likely to find defendant's testimony believable or plausible than Caucasians (Holcomb & Jacquin, 2007).

Participants were asked if they had ever been sexually abused, if they thought they had been sexually abused, and if they had ever known someone who was sexually abused. These questions were asked to determine if participants who had experienced abuse or had knowledge of abuse would answer related questions differently than those who had not. However, neither belief that the child was abused nor guilty verdicts were affected by participants' previous abuse or knowledge of the abuse of others.

Overall, verdict should be related to reasonable doubt and should be unrelated to mock jurors' personal beliefs. This is not the case in the current study. It appears that personal belief is one of the greatest factors affecting verdict and belief the child was abused in this sample – this implies that

participants do not consider the legal system or reasonable doubt. If participants considered reasonable doubt, then conviction rates should be lower: even if they felt somewhat in their "gut" that the child was abused, exposure to the poor interview should have decreased their confidence that this was so, enough to decrease conviction rates somewhat.

Participants were asked to rate their confidence in their belief that the child was or was not abused and also to rate their confidence that the defendant was guilty or not guilty. Confidence in defendant guilt was significantly positively associated with prison sentence length. This suggests that those who were not confident in the defendant's guilt assigned lower prison sentences than those who were more confident in his guilt. It should be the case that participants who are not confident in the defendant's guilt should not convict the defendant or should assign low prison sentences. Still, problematically, those who were not confident that the defendant was guilty still sentenced him to time in prison.

In general, there were few effects of timing of the expert witness and forensic interview quality on ratings of the defendant, the expert, or the child witness. Timing of the expert witness affected jurors' ratings of the expert, with higher ratings being received when the expert was presented after the bad interview. The expert was rated more credible, more helpful, and more convincing when following a bad interview. While participants seem to apply the expert testimony presented after a bad interview back to the interview itself, there is no evidence to suggest that they can apply the expert's testimony when presented before forensic interviews.

However, the reasoning behind this is very unclear. Perhaps participants can tell on some level that a bad interview is poor, even without the help of an expert, and maybe the expert's testimony following a poor interview validates their feeling that the interview is in fact bad. Recency effects may be the cause as well – it could be that it is easier for participants to apply the knowledge

of the expert to the interview when it is freshest in their minds following an interview. However, very little time passed between the reading of the forensic interview transcript and the reading of the expert testimony in any condition, which decreases the likelihood that recency effects account for this trend. One benefit of the expert being most valuable when presented after the bad interview is that, in general, expert testimony follows all other testimony and evidence presented in actual court cases.

Ratings regarding the likelihood that the child was mistaken and likelihood that the child intentionally lied did not differ by condition. Across all conditions, the likelihood the child intentionally lied was lower than the likelihood the child was mistaken. If the participants had internalized the warnings from the expert witness and applied them to their judgments, then the likelihood that the child was mistaken should have been higher in the conditions containing the bad forensic interview. However, this was not so in the current study, as there were no differences amongst any of the conditions.

In the present study, there were no differences amongst conditions regarding child credibility. Conversely, Buck et al. (in press) found that, in typical interview conditions, that 4-year-old witnesses were deemed more truthful and less likely to lie than 10-year-old witnesses. Additionally, they found that, in typical interviews, 4-year-olds were deemed more believable than 10-year-olds. Also, in poor interview conditions, 4-year-olds were perceived as less credible and as having less memory accuracy than 10-year-olds.These results were not dependant on the presence of expert witnesses, and were not replicated in the current study.

Interview quality affected jurors' perceptions of the child's convincingness, with the child having higher ratings of convincingness in good interviews versus bad interviews. In the present study, there were no differences amongst conditions regarding child credibility.

The results of this study imply that mock jurors may already know, without the help of an expert, how to identify good and poor interviews. Regardless of whether or not an expert was presented, participants rated the interviewer in the bad interview as more leading than in the good interview. Likewise, with or without an expert, participants rated poor interview as more biased than good interviews. While these results are surprising and beneficial, it still does not appear that the mock jurors use this knowledge to inform their decision making.

Limitations in the present study include low sample size, low gender diversity, low ethnic diversity, and low age diversity. However, studies show that few differences exist in similar studies between young adults, such as university students, and older adults (Bornstein, 1991; Cutler, Dexter, & Penrod, 1989; McAuliff & Kovera, 2007). Low ethnic and gender diversity may have affected potential differences in verdict, as studies have shown that women are more pro-prosecution than men and that African Americans find defendant's testimony to be less believable and plausible (Holcomb & Jacquin, 2007). Additionally, this study did not discuss definitions of reasonable doubt and did not specifically ask participants to consider it in their judgments. Perhaps these instructions would have decreased conviction rates and/or prison sentences.

Also, the survey question regarding participants experience with or knowledge of sexual abuse may have been confusing or nonspecific as the first one asked if participants had experienced abuse, the second asked if they believed they had experienced abuse, and the third asked if they had known anyone to experience abuse. Because they were not told to not double or triple count themselves, they may have counted themselves for more than one category. This may have increased the total number of cases of experienced or known abuse in this study. Similarly, participants were aware that this study investigated cases of child sexual abuse, which may have drawn participants with experience with or knowledge of sexual abuse, potentially leading to a biased sample and thus

biased results, although no evidence exists here that this occurred as there were no differences amongst those who experienced or knew of abuse compared to those who did not.

In the future, this study could be enhanced by adding additional testimony, including testimony from the defendant and/or testimony from an opposing expert witness. In qualitative data, some participants in this study stated that they would feel more comfortable with making such an important decision as rating a defendant's guilt if they had more evidence and/or more testimony to use in their judgments.

The age and gender of the child witness could also be varied, as studies have shown that perceptions of different witnesses may vary (Luus et al., 1995; Goodman et al., 2002). Furthermore, the gender of the defendant should be varied as well to determine if the gender of the defendant affects participants' verdicts. Additionally, future studies could investigate the interaction between the alleged victim's gender and the defendant's gender.

In another study, the way that the questions of abuse were asked should be modified to increase clarity. The way that they were worded in this study may have been too ambiguous, and participants may have double-counted themselves by answering yes to more than one question of abuse because the instructions were so limited. If this is so, then the number of participants who were abused, thought they were abused, or who knew of others who were abused may be higher in this study than it should be.

In the future, a larger sample size should be used with a greater diversity of gender and ethnicity. Other pieces of evidence should be presented to jurors, including other testimony from the defendant, an opposing expert, or potentially the child's mother. The gender and age of the child should be varied, as well as the gender of the defendant. To increase ecological validity, the presentation of trial evidence should be distributed over a longer period of time. Also, mock jurors

should be allowed to deliberate and come to a conviction in a group manner as in true cases. Additionally, using reasonable doubt language may decrease conviction rates. In future similar studies, a judge's testimony of the charges of the case could be presented to jurors and could include reasonable doubt language. Future research must find answers to these questions so that it may inform policy changes that lead to fairer trials for both defendants and victims.

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Table 1

Frequencies of Demographic Variables (N = 75)

Demographic Variable	(N = 75)
Gender	
Female	61 (81.3%)
Male	14 (18.7%)
Race/Ethnicity	
White	50 (66.7%)
Black	6 (8%)
Latino	14 (18.7%)
Asian	1 (1.3%)
Other	4 (5.3%)
Education	
Freshman	45 (60%)
Sophomore	18 (24%)
Junior	9 (12%)
Senior	2 (2.7%)
Other	1 (1.3%)
Juror History: Have you ever been a juror?	
Yes	1 (1.3%)
No	74 (98.7%)
Have you ever been the victim of sexual abuse?	
Yes	6 (8%)
No	68 (90.7%)
I prefer not to answer	1 (1.3%)
Do you think you may have been the victim of sexual abuse?	
Yes	11 (14.7%)
No	63 (84%)
I prefer not to answer	1 (1.3%)
Have you ever known someone who was sexually abused?	
Yes	41 (54.7%)
No	33 (44%)
I prefer not to answer	1 (1.3%)

Table 2

Frequency That Defendant Was Rated Guilty by Condition

	Good Interview			Bad Interview		
	Expert Before	Expert After	No Expert	Expert Before	Expert After	No Expert
Guilty	9	9	11	9	6	10
Not Guilty	3	3	2	3	7	3

Table 3

Belief the Child Was Abused and Rating of Defendant Guilt by Participant Gender

	Guilty	Not Guilty	Child abused	Child not abused
Male	10	4	9	5
Female	44	17	48	13

Table 4

Belief the Child Was Abused and Rating of Defendant Guilt by Participant Ethnicity

	Guilty	Not Guilty	Child abused	Child not abused
White	31	19	35	15
Black	6	0	6	0
Latino	12	2	11	3
Asian	1	0	1	0
Other	4	0	4	0

Table 5

Mean Prison Sentences by Condition Among Those Who Voted Guilty

Good Interview			Bad Interview		
Expert Before	Expert After	No Expert	Expert Before	Expert After	No Expert
7.33 (3.94)	8.44 (5.53)	7.72 (5.31)	7.78 (4.27)	9.67 (5.65)	6.30 (4.06)

Note. Means and standard deviations (in parentheses) are based on a 0-15 year sentencing scale.

Table 6

Frequency That Child Was Believed to Be Abused by Condition

	Good Interview			Bad Interview		
	Expert Before	Expert After	No Expert	Expert Before	Expert After	No Expert
Yes	9	10	10	10	7	11
No	3	2	3	2	6	2

Table 7

Ratings of Forensic Interview and Interviewer by Interview Quality

	Good Interview	Bad Interview
Amount that interviewer led the child	3.84 (1.64)*	6.13 (1.19)*
How biased was the interview	3.35 (1.87)*	6.08 (1.15)*

Note. Means and standard deviations (in parentheses) are based on a 7-point scale. Higher numbers indicate stronger belief. * indicates significance at the .001 level.

Table 8

Ratings of Forensic Interview and Interviewer by Interview Quality and Timing of Expert Testimony

	Good Interview			Bad Interview		
	Expert Before	Expert After	No Expert	Expert Before	Expert After	No Expert
Amount that interviewer led the child	4.42 (1.51)	3.75 (2.05)	3.38 (1.26)	5.92 (1.31)	6.23 (1.42)	6.23 (.83)
How biased was the interview	4.17 (1.75)	3.25 (2.18)	2.69 (1.49)	5.83 (1.19)	6.46 (.88)	5.92 (1.32)

Note. Means and standard deviations (in parentheses) are based on a 7-point scale. Higher numbers indicate stronger belief.

Table 9

Ratings of the Child Witness by Interview Quality and Timing of Expert Testimony

	Good Interview			Bad Interview		
	Expert Before	Expert After	No Expert	Expert Before	Expert After	No Expert
Child convincingness	5.33 (1.50)	4.83 (1.80)	4.85 (1.52)	4.00 (1.41)	3.31 (1.03)	3.46(1.66)
Child credibility	4.92 (1.68)	4.17 (1.40)	5.08 (1.26)	4.42 (1.78)	4.23 (1.74)	4.00 (1.58)
Likelihood child intentionally lied	2.00 (1.35)	2.33 (1.07)	2.38 (1.71)	1.67 (.78)	2.38 (1.39)	2.77 (1.36)
Likelihood child was mistaken	4.42 (1.31)	4.25 (1.66)	4.54 (1.56)	4.17 (1.75)	4.92 (1.12)	4.77 (1.64)

Note. Means and standard deviations (in parentheses) are based on a 7-point scale. Higher numbers indicate stronger belief.

Table 10

Ratings of the Expert Witness by Interview Quality and Timing of Expert Testimony

	Good Interview		Bad Interview	
	Expert Before	Expert After	Expert Before	Expert After
Expert convincingness	6.08 (1.08)	5.50 (1.24) $_{a}$	5.67 (1.56)	6.62 (.87) $_{a}$
Expert helpfulness	5.92 (1.44)	5.58 (1.38) $_{b}$	5.50 (1.31) $_{c}$	6.62 (.87) $_{b\ c}$
Expert clarity	6.42 (.67)	6.00 (1.28)	5.92 (1.08)	6.62 (.77)
Expert credibility	6.17 (1.03)	5.83 (1.40)	5.42 (1.38) $_{d}$	6.46 (.66) $_{d}$
Expert trustworthiness	6.17 (.94)	5.92 (1.44)	5.42 (1.68)	6.38 (.96)
Expert knowledgeable	6.42 (.67)	6.67 (.49)	6.42 (.79)	6.77 (.83)
Expert necessary to interview	5.92 (1.38)	6.08 (1.44)	5.33 (1.44)	5.54 (1.39)
Expert relied upon	5.08 (1.93)	5.25 (1.36)	4.92 (1.78)	4.77 (1.74)
Expert necessary to case at hand	5.50 (1.62)	5.75 (1.49)	5.33 (1.44)	5.77 (1.42)

Note. Means and standard deviations (in parentheses) are based on a 7-point scale. Higher numbers indicate stronger belief. Identical subscripts indicate significant differences at the .05 level.

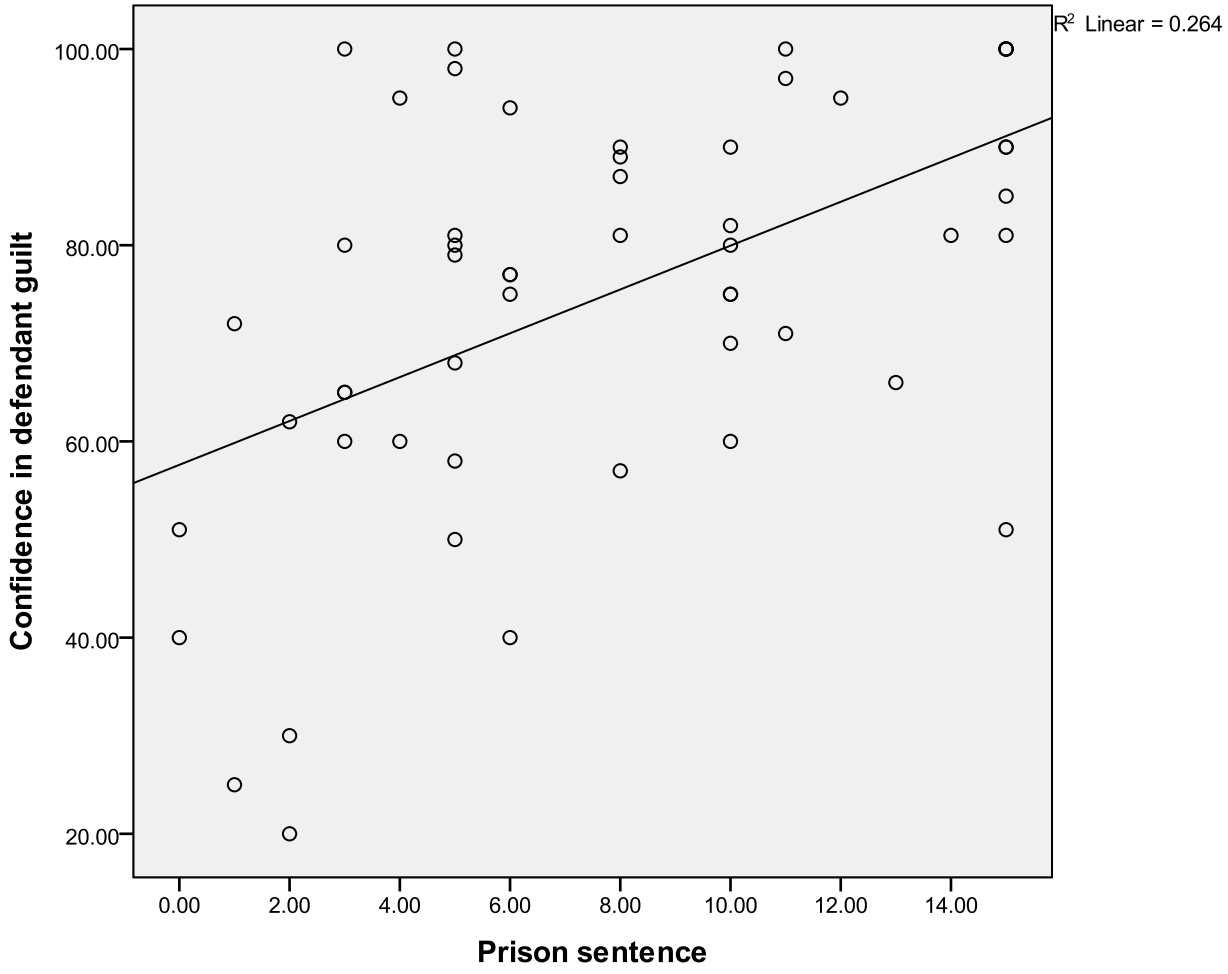

Figure 1. Correlation between confidence in defendant guilt and length of assigned prison sentence, *(r* = .51, *p* <.001).

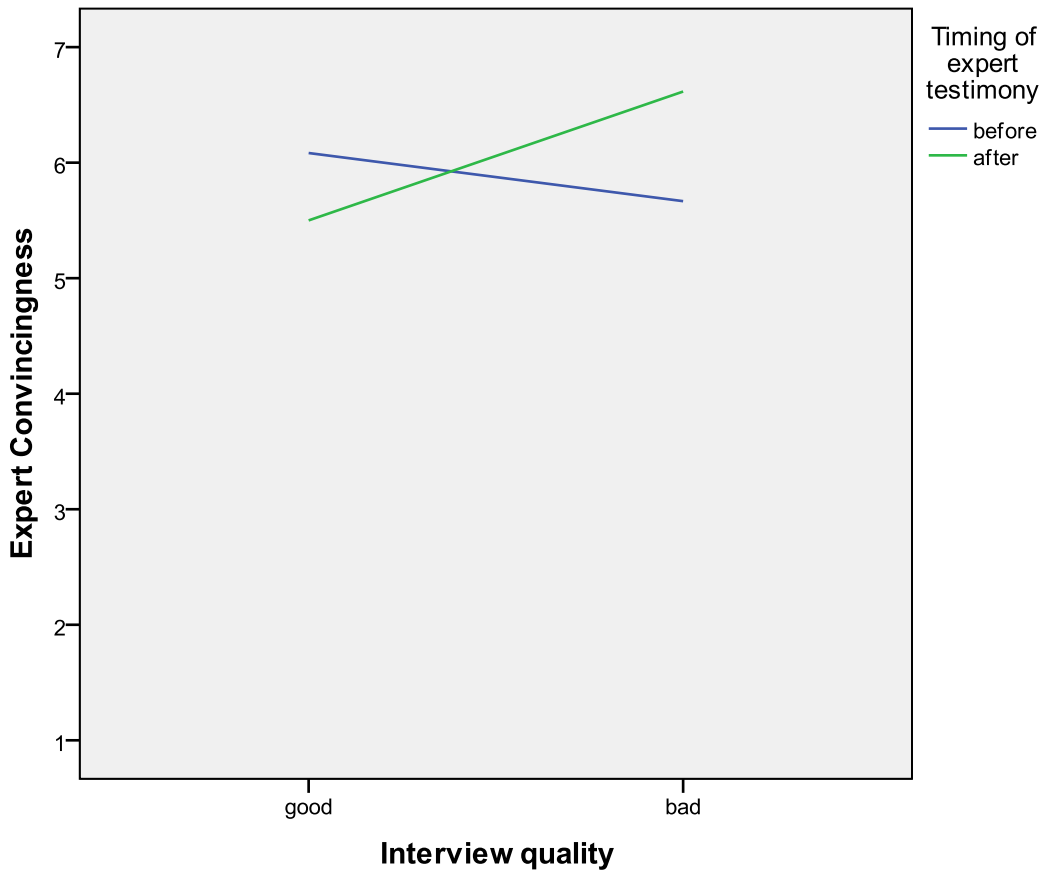

Figure 2. Expert convincingness by interview quality and timing of expert testimony. Significant interaction, (F (1,45) = 4.92, p = .032).

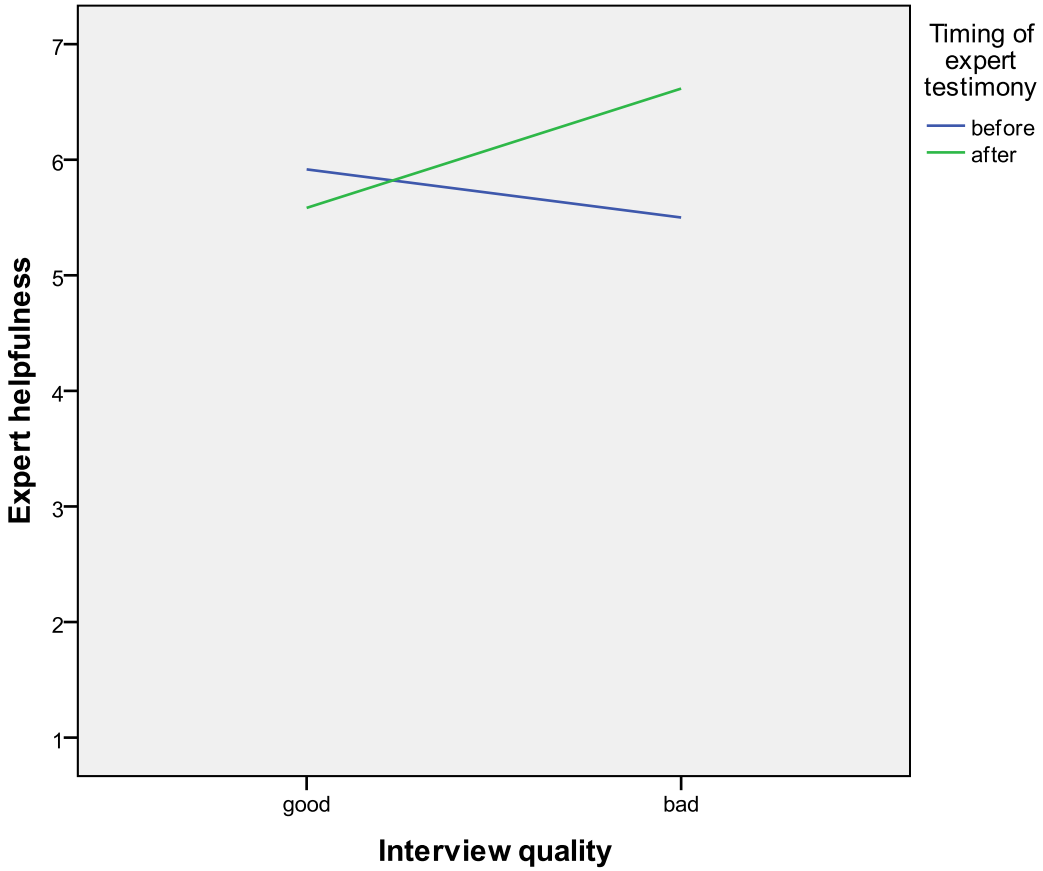

Figure 3. Expert helpfulness by interview quality and timing of expert testimony. Significant interaction, (F (1,45) = 4.02, p = .051).

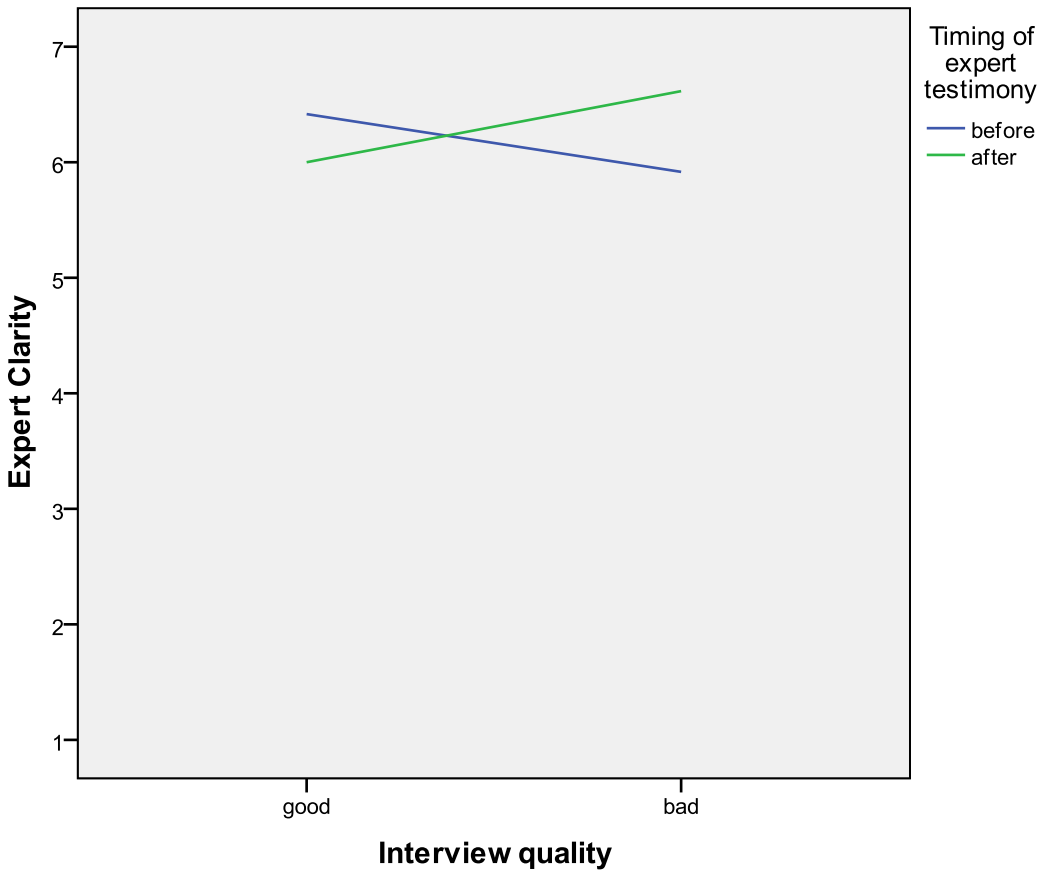

Figure 4. Expert clarity by interview quality and timing of expert testimony. Significant interaction, (F (1,45) = 3.99, p = .052).

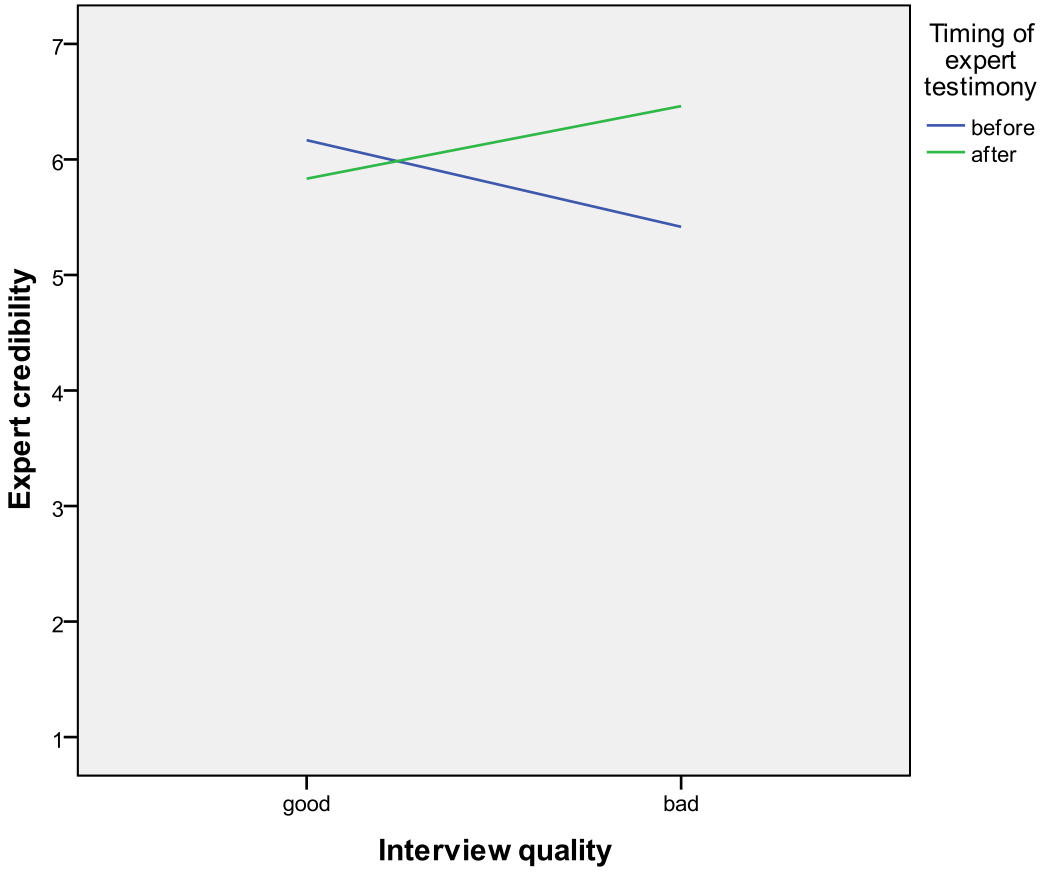

Figure 5. Expert credibility by interview quality and timing of expert testimony. Significant interaction, (F (1,45) = 4.40, p = .042).

Appendix A

Informed Consent

This study concerns the credibility of witnesses in a sexual abuse case concerning a child. We are interested in investigating the way that jurors think and reason about witnesses and testimony in such cases. To investigate these areas, you will be asked to read a trial summary and testimony from a sexual abuse case involving a young child and will then be asked to answer questions pertaining to the case. Materials within are based on real child sexual abuse cases. Some materials may be disturbing. If you agree to participate, please read through the case and evidence carefully and try to think of the case as you would if you were participating as a juror for an actual case. This study will last no more than 30 minutes.

This study is completely confidential and anonymous. To ensure confidentiality, you will be asked your name only once in the beginning of the study so that credit for your participation may be issued. At that time, you will be given a participant number to use during the study.
All responses to this study are confidential and no one, not even the experimenter, will know which participant name corresponds to which participant number. Your name will not appear anywhere within this study. All responses are fully confidential and will only be marked by the anonymous participant number.

Participation in this study is completely voluntary. If at any time you wish to stop participating, you may leave without penalty.

Research in this area is very beneficial. It allows us to add to a body of literature regarding the interviewing of children and can inform professionals on how to best interview children. We appreciate your participation very much!

If you have any questions, please feel free to contact Kayla Burd at (908) 319-6618 or by email at kburd1@pride.hofstra.edu. Also, you may contact Dr. Cox at (516) 463-5171 or by email at Brian.D.Cox@hofstra.edu. If you wish to learn the results of the study, which should be completed by December 2010, please leave your name and email (to be kept separate from all data) to receive a summary at that time.

I certify that I am at least 18-years-old and agree that I will not discuss this study with others until the study has been completed.

I have read and understand the information given above and agree to participate in this study.

Print name_____
Signature_____

Date_____

Appendix B

Demographic Questionnaire

Please fill in answers to the questions below on the designated line unless otherwise stated.

Age_____

Gender:
Male_____
Female_____

Race/Ethnicity: (Circle one)
White
Black
Latino
Asian
Native American
Other (please specify)_____

Education (year in college)
Freshman _____
Sophomore _____
Junior _____
Senior _____
Other (Please specify) _____

Have you ever been a juror?
Yes _____
No _____

Have you ever been the victim of sexual abuse?
Yes _____
No _____
I prefer not to answer ____

Do you think you may have been the victim of sexual abuse?
Yes _____
No _____
I prefer not to answer ____

Have you ever known someone who has been the victim of sexual abuse?
Yes _____
No _____
I prefer not to answer ____

Appendix C
Adapted from the Fells Acres Day School case, from Frontline, Innocence Lost (1998)

Trial Summary

A 7-year-old girl told her mother that a male teacher had touched her private parts. According to the teacher, the girl had wet her pants, and in order to help her, the teacher took the girl into the bathroom, dried her off and gave her a fresh change of clothes. The girl's mother claims that soon after the incident, the child began displaying disturbing behavior, wetting her bed, baby-talk, masturbation and acting out sexually. She became concerned and asked her brother, who had been sexually abused as a child, to talk to her daughter. During a walk in the park, the girl told her uncle that while she was at school, the male teacher had pulled down her pants and touched her genitals.

Appendix D

Expert Witness Testimony: freely adapted from Stern (1997) and Bruck (1999)

ATTORNEY: Doctor, would you please state your full name for the court?

EXPERT: Yes, my name is Dr. Wallace Kennedy.

ATTORNEY: What do you do for a living?

EXPERT: I hold a doctorate in experimental psychology and am a Professor in the Department of Psychology at Cornell University. I specialize in research in the field of developmental psychology. My particular research interests focus on children's language and memory development.

ATTORNEY: Can you please tell us about your educational background?

EXPERT: I received my undergraduate degree in Psychology from Florida State University. I received my Master's degree from the University of North Carolina, Chapel Hill in 1985, and my doctorate from the same university in 1989.

ATTORNEY: Can you please tell us about your research experience?

EXPERT: My academic/research history includes graduate fellowships at the University of North Carolina, and Research projects at Cornell University. Since 1990 I have been an Associate Professor in the Department of Psychology at Cornell. Currently I conduct research in the area of the reliability and credibility of children's testimony. I conduct experimental studies on the aspects that influence children's suggestibility.

ATTORNEY: Doctor, in your field, are there certain professional organizations practitioners can elect to join?

EXPERT: Yes, there are.

ATTORNEY: Why would someone choose to be part of such organizations?

EXPERT: In this way you can stay current in your field and you are provided with scholarly journals and can attend annual conferences. I am a member of the American Psychological Association, the Society for Research in Child Development, and The Jean Piaget Society.

ATTORNEY: Doctor, what is a professional journal?

EXPERT: They are similar to magazines, but for professionals. They include scholarly articles based on research in the field.

ATTORNEY: Who writes these articles?

EXPERT: Usually the top professionals in the field are selected to be included in these journals. They are usually selected after their research has been peer reviewed by the best in the field. I have published some 60 articles in peer-reviewed publications and 16 book chapters.

ATTORNEY: Have you ever testified as an expert witness before?

EXPERT: Yes, I have testified four times.

ATTORNEY: Your honor, I wish to stipulate that Dr. Kennedy is an expert in the field of developmental psychology.

JUDGE: The court stipulates that Dr. Kennedy is such an expert.

ATTORNEY: Dr. Kennedy, why are you here today?

EXPERT: I am here to provide educational information regarding the interviewing of child witnesses. I have been asked to discuss the best practices in the field and to evaluate the interview of the child pertinent to this case.

ATTORNEY: Can you walk us through the process a child undergoes when involved in a case such as the one here today?

EXPERT: Yes. Consider the poor young child who is brought into the legal system. Children do not know the procedures, so they do not know what is happening to them. They are brought into a system that interviews them multiple times by well-meaning interviewers, but each interviewer has his or her own view of what may have occurred and is looking to the child to confirm their view of what has happened. Over a period of time, in preparation for trial, which may last a year and a half, the child is interviewed by social workers, policemen, uh, trained interviewers, lawyers, and others several times. We estimate that children are interviewed an average of eleven times before trial by an adversarial court system by members of both sides of the case. There is also a gap between each set of interviews. So, the child is interviewed by biased interviewers, who come in and interview the child and then who leave, and then the child is later interviewed by another interviewer, and so on.

ATTORNEY: Doctor, what can happen because of this long process?

EXPERT: What can happen to the child, even if he or she was at first relatively certain about what had occurred at the beginning of this long process, the child may not be certain by the end. And in fact, the child may come to believe that something has happened to them because the adult interviewers have suggested that something has happened to them. By this time, not even individuals who work with children all the time, even experts in this area, no one can reliably determine whether or not the report is at this point true or false. And more to the point, the young child may in fact believe what he or she is saying and may believe that something has actually happened even if nothing has occurred.

ATTORNEY: Doctor, what is suggestibility?

EXPERT: It is often said that young children are suggestible. Young children are more easily influenced by interviewers than older children, but everyone is suggestible in that way to some extent. So, it is possible for adults who interview these children to inadvertently plant wrong information. This is done in a number of ways.

ATTORNEY: Earlier you mentioned interview bias. What is it?

EXPERT: Interviewers can plant wrong information by using what is called a confirmatory bias or interviewer bias in which they ask several questions and they only accept answers from the children if they confirm their original hypothesis. There is also a difficulty in that each interviewer has something that they want from the child from the moment that they enter the session and the child has undergone many of these interviews by the time they get on the stand at trial. The child may be what is considered a believable witness, but that may be because they now recall the event differently than they did originally.

ATTORNEY: What else can go wrong in an interview with a child?

EXPERT: Another aspect to be aware of is the great power difference between the child and the interviewer. For example, a policeman is much more powerful than a child. The child is also set up to be agreeable and to give answers that adults seem to want. The child may be pressured and then may be fearful in some way, or they can just want to help the interviewer and thus may answer in that way.

ATTORNEY: Are there other difficulties?

EXPERT: Yes. Interviewers may ask the same questions many times in the same session and the child may begin to get the idea that the first time they answered the question they were wrong, and so they may change their answer to be more agreeable to the adult, powerful interviewer. So, there are difficulties with asking the same questions repeatedly between interviews and there are difficulties associated with asking the same question several times during individual interview sessions.

ATTORNEY: Doctor, how can we avoid these problems?

EXPERT: Well, we have determined through research that children's testimony is usually more accurate if you get information from a child in an early interview, before it has been contaminated. Also, if you interview the child using open ended questions, so that the child has to come up with themselves what actually happened, you will get more accurate information than if they merely have to say yes or no to an option posed by the interviewer. An example of an open ended question would be, "Could you tell me what happened at the park?" as opposed to "Did you meet with Dr. Johnson in the park last week?" This is a closed ended, option-posing question, and it is bad because children like to answer yes or no, and they don't like to answer "I don't know" even if that is the correct

answer. If they are very young, below 6 or so, they may even assume you already KNOW the answer, so they will agree with you easily, but make an error in doing so.

ATTORNEY: Thank you Dr. Kennedy. Can you summarize the negative techniques that must be avoided when interviewing children?

EXPERT: Yes, closed-ended or option-posing questions shouldn't be used until the very end of the interview, after you have allowed the child to say what happened in his or her own words, and then LISTENED to their answers. Rewards and punishments, such as promising a child that he can go home if he just agrees with the interviewer, should be avoided as well. It is best for children to be interviewed as few times as possible, and it is best to avoid repeated questioning. Interviewers must avoid showing verbal and nonverbal bias while interviewing children. Interviewers should also be aware that children are aware of high status adults or adults in general, and therefore must be sure to seem as neutral as possible.

ATTORNEY: Can you summarize the best practices in interviewing young children?

EXPERT: All other things being equal, it is better to accept an account from a child taken early in the investigation, in a situation where the child is under little social pressure, and where she is explicitly told she can correct the interviewer if a wrong question is asked. Carefully allowing the child to state what happened in her own words, step by step, gets better results than simply diving in with yes-or-no questions. Some such questions may be necessary, but only after the child has established that something has occurred. Interviewers should also try to avoid repeating questions within and across interviews. Interviewers should be patient and should not be judgmental or too demanding when interviewing children. The interviewer has a lot of power in this setting, to start, direct, and decide when to end the interview. The child is the one who should be telling what did or did not happen. Give some of that power to the child.

ATTORNEY: Thank you, Doctor. Your honor, I have no further questions for this witness.

Appendix E

Adapted from Lamb et al. (2008)

Child witness's interview: Good

INTERVIEWER: Hello, my name is Kimberly Thomas and I am a social worker. I am interviewing Sarah. Sarah, this is a recorder. I am recording our conversation here today so that I make sure I remember everything you say. Part of my job is to talk to children about things that have happened to them. I meet with many children so that they can tell me the truth about things that have happened to them. So, before we begin, I want to make sure that you understand how important it is to tell the truth.

INTERVIEWER: If I say that my shoes are red, is that true or not true?

CHILD: Not true.

INTERVIEWER: Right, that would not be true because my shoes are really black. Now, if I say that I am sitting down, would that be true or not true?

CHILD: True

INTERVIEWER: Yes, it would be true because you can see that I really am sitting down. I see that you understand what telling the truth means. It is very important that you only tell me the truth today. You should only tell me things that really happened to you.

INTERVIEWER: If I ask a question that you don't understand, just say "I don't understand." Okay?

CHILD: Okay.

INTERVIEWER: And if I don't understand what you say, I'll ask you to explain.

INTERVIEWER: If I ask you a question and you don't know the answer, just tell me "I don't know." So, if I ask you, "What is my dog's name?" what would you say?

CHILD: I don't know.

INTERVIEWER: Right, you don't know the name of my dog do you?

CHILD: No.

INTERVIEWER: And if I say things that are wrong, you should tell me, okay?

CHILD: Okay.

INTERVIEWER: So, if I say you are a 5-year-old boy, what would you say?

CHILD: No, I'm 7. I'm a girl.

INTERVIEWER: That's right. Now you know you should tell me if I make a mistake or say something that is not right.

INTERVIEWER: Now I want to talk to you about why you are here today. Tell me why you think your mom brought you here today.

CHILD: Mommy is upset because Mr. Jones touched me.

INTERVIEWER: I understand that something happened to you. Tell me everything that happened from the beginning to the end.

CHILD: Mr. Jones touched me in the bathroom at school.

INTERVIEWER: Did someone do something to you that wasn't right?

CHILD: Mr. Jones touched my private parts in the bathroom.

INTERVIEWER: Tell me everything about that.

CHILD: He pulled my pants and underpants down and touched my private parts.

INTERVIEWER: Tell me more about that.

CHILD: He pulled my pants and underpants down and he touched me down there. Then he made me change into new underpants and pants.

INTERVIEWER: I want to make sure that I understand everything you told me, so I need to ask you some more questions. I may ask you some more questions about things you have already told me. To begin, I want to show you a picture of a little girl like you. Okay?

CHILD: Okay.

INTERVIEWER: You told me about a time when you and Mr. Jones were in the bathroom at school. Can you show me on this picture where he touched you?

CHILD: Umm he touched me here.

INTERVIEWER: Tell me everything about that.

CHILD: Um, uh, he touched me down there.

INTERVIEWER: Did he touch this part of your body, the part you pee with?

CHILD: Yes.

INTERVIEWER: Tell me everything about that.

CHILD: He touched me down there in the bathroom.

INTERVIEWER: What did he touch you with down there?

CHILD: His hand.

INTERVIEWER: Did he touch this part of your body, the part you poo with?

CHILD: Ummm, yeah.

INTERVIEWER: Tell me everything about that.

CHILD: Uhhh, he touched me down there at school.

INTERVIEWER: What did he touch you with down there?

CHILD: His hand.

INTERVIEWER: Is there any other touching you can tell me about?

CHILD: Umm, no.

INTERVIEWER: Did you touch any part of Mr. Jones?

CHILD: Uhh, I don't know.

INTERVIEWER: Here is a picture of a man like Mr. Jones. Did you touch him any where? If so, point to it on the picture.

CHILD: Umm, I don't know. No.

INTERVIEWER: You didn't touch him anywhere?

CHILD: No.

INTERVIEWER: You have told me a lot and it has been very helpful, but I am a little confused. To be sure that I understand, please start at the beginning and tell me exactly what happened from the beginning to the end?

CHILD: At school Mr. Jones touched me in the bathroom. He pulled down my underwear and pants and touched me. He touched my private parts. I changed. He gave me new underpants and new pants. I went back to recess and then we had snack time. I told Uncle Mike that Mr. Jones touched me.

INTERVIEWER: You have told me lots of things today, and I want to thank you for helping me. Is there anything else you want to tell me?

CHILD: Uhhh, no.

INTERVIEWER: Is there anything else you think I should know?

CHILD: No.

INTERVIEWER: Okay. Well, if there is anything else you might want to tell me, here is my number. You can call me any time if you want to tell me something else, okay?

CHILD: Okay.

INTERVIEWER: It's 12:17, and this interview is now complete.

Appendix F

Adapted from Lamb et al. (2008)

Child witness's interview: Bad

INTERVIEWER: Hello, my name is Kimberly Thomas and I am a social worker. I am interviewing Sarah. Sarah, this is a recorder. I am recording our conversation here today so that I make sure I remember everything you say. Part of my job is to talk to children about things that have happened to them. I meet with many children so that they can tell me the truth about things that have happened to them.

INTERVIEWER: Now I want to talk to you about why you are here today. You're here today because someone touched you, isn't that right?

CHILD: Yes.

INTERVIEWER: And Mr. Jones touched you, didn't he?

CHILD: Ummm….yes.

INTERVIEWER: And he touched you at school, right?

CHILD: Uh huh.

INTERVIEWER: Now, Mr. Jones touched you in the bathroom, right?

CHILD: Ummm I don't know.

INTERVIEWER: You need to tell the truth. You aren't doing a good job telling the truth right now. I know he touched you in the bathroom, didn't he?

CHILD: Uh, yeah.

INTERVIEWER: That's very good. It's best when you tell the truth like that.

INTERVIEWER: What happened when you were in the bathroom with Mr. Jones?

CHILD: He pulled my pants and underwear down.

INTERVIEWER: When you were in the bathroom he pulled your underwear and pants down?

CHILD: Umm yes.

INTERVIEWER: And then Mr. Jones touched you in the bathroom, right? Where did he touch you?

CHILD: He touched me down there.
INTERVIEWER: Can you say the name of where he touched you? He touched your vagina, right?

CHILD: He touched me down there, where I wee.

INTERVIEWER: Okay, so he touched your vagina. You're doing a great job telling the truth. Your mommy and daddy will be very proud of what a big girl you are for telling me everything.

INTERVIEWER: He touched you on the vagina in the bathroom, right?

CHILD: Umm, yes.

INTERVIEWER: He touched you with his hand right?

CHILD: I don't remember.

INTERVIEWER: No, you do remember, don't you? He touched you with his hand, right?

CHILD: Uhh yeah, in the bathroom.

INTERVIEWER: He also touched you where you poo, right? On your bottom?

CHILD: Yes.

INTERVIEWER: Okay, so he touched you on the bottom and on the vagina, right?

CHILD: Mmm uhhh yeah.

INTERVIEWER: And he touched you there with his hand too?

CHILD: Yes.

INTERVIEWER: Did he touch you anywhere else when you were in the bathroom?

CHILD: No.

INTERVIEWER: Did he touch you with any other part of his body?

CHILD: I don't know.

INTERVIEWER: He only touched you with his hand?

CHILD: Uhh mmhmm.

INTERVIEWER: Did Mr. Jones make you touch him anywhere?

CHILD: I don't know. I don't remember.

INTERVIEWER: You need to be a big girl and tell me everything you can remember, okay? Did he make you touch him anywhere?

CHILD: Mmm no.

INTERVIEWER: Okay, good. Good job remembering.

INTERVIEWER: What happened after Mr. Jones touched you?

CHILD: Uhh he gave me new underpants.

INTERVIEWER: What else?

CHILD: Mmm he gave me new pants, too, and I put them on.

INTERVIEWER: Who did you tell this to, besides me?

CHILD: Huh?

INTERVIEWER: You told your Uncle Mike that Mr. Jones touched you, right?

CHILD: Uh huh.

INTERVIEWER: Now, is there anything else you remember that you think I should know?

CHILD: No.

INTERVIEWER: Is there anything else you want to tell me?

CHILD: Uhh no.

INTERVIEWER: Okay. Well I want to go over everything one more time to make sure I know everything and to make sure I understand it all, okay?

CHILD: Okay.

INTERVIEWER: When you were at school one day, Mr. Jones took you to the bathroom, right?

CHILD: Uhh, yes.

INTERVIEWER: And when you were in the bathroom, he touched you, correct?

CHILD: Yes.

INTERVIEWER: In the bathroom he touched your vagina and your bottom, right?

CHILD: Umm...yeah.

INTERVIEWER: And he touched your vagina and bottom with his hand, right?

CHILD: Yes.

INTERVIEWER: And he didn't ask you to touch him at all, right?

CHILD: Mmm, no.

INTERVIEWER: So you didn't touch him, right?

CHILD: No.

INTERVIEWER: And then later he gave you new underwear and new pants to put on?

CHILD: Ummm yes.

INTERVIEWER: And then later you told your Uncle Mike that Mr. Jones touched you, right?

CHILD: Yes.

INTERVIEWER: You did a great job telling me the truth. Here is my phone number in case you want to tell me anything else that happened, okay?

CHILD: Okay.

INTERVIEWER: It's 12:17, and this interview is now complete.

Appendix G

Manipulation Check

Please briefly describe what occurred in the case materials that you have just read. In other words, please summarize the evidence given thus far.

Appendix H

Dependent Variables

Dependent measures, generally administered as Likert scales, included:

1. Do you believe the child was abused?
    1a. How confident are you in this judgment?
2. How convincing was the child?
3. Lying is when one knows the truth but says something different. Sometimes people are not lying, but believe something to be true that is not so. How likely is it that the child intentionally lied about the abuse? What is the likelihood that the child was mistaken and was not lying?
4. How convincing was the expert witness?
5. How trustworthy was the expert witness?
6. How knowledgeable was the expert witness?
7. How helpful was the expert witness?
8. How necessary was the expert's testimony in understanding the child's interview?
9. How much did you rely upon the expert's testimony in forming your opinion about this case?
10. How necessary was the expert's testimony to the case at hand?
11. How clear was the expert's testimony?
12. Credibility includes how accurate, trustworthy, and plausible a witness' testimony is. How credible is the child?
13. Credibility includes how accurate, trustworthy, and plausible a witness' testimony is. How credible is the expert witness?
14. Rate the guilt of the defendant: guilty or not guilty.
    16a. Rate your confidence in this decision.
    16b. If you believe the defendant is guilty, please choose a prison sentence ranging from one year to fifteen years in prison.
    16c. Please explain why you chose this sentence length.
15. How believable was the defendant's explanation of the event?
16. How much did the interviewer lead the child to the conclusion she wanted?
17. How biased was the interview of the child witness?

Appendix I

Debriefing

This study was designed to examine how the timing and type of expert witness testimony on forensic interview quality influences jurors'' decisions regarding child sexual abuse cases. We varied the timing and type of expert testimony and the quality of the forensic interview of the child. We want to know if these factors will influence or sensitize jurors to the problems associated with poor forensic interviewing, and we wish to know if the timing and type of expert testimony can help or hinder jury reasoning and decision making.

This project is ongoing through the semester; therefore, we are unable to disclose any other details regarding the study. Please do not discuss this study or its details with others until the study has been completed. If you do, our results could be biased.

If you wish to know more about the study or if you have any other questions, please feel free to contact Kayla Burd at kburd1@pride.hofstra.edu.

Thank you for your time. Your participation has been greatly appreciated.