

## Adults' Judgments of Children's Coached Reports

Victoria Talwar · Kang Lee · Nicholas Bala ·  
R. C. L. Lindsay

Published online: 29 August 2006

© American Psychology-Law Society/Division 41 of the American Psychological Association 2006

**Abstract** This study investigated adults' judgments of the honesty of children's coached true and fabricated mock testimony. Adults saw video clips of children testifying in a mock court about a true or fabricated event in their lives. They were asked to make an assessment of the truthfulness of the testimony, and respond to questions about their perception of children's credibility. Half of the adults saw children testifying after a competence examination, and the other half saw children testifying without a competence examination. Overall, girls were rated as more competent than boys, and their testimony was more likely to be believed. Younger children were more likely to be rated as incompetent than older children. A factor analysis of adults' responses revealed six factors which significantly predicted adults' overall assessment of children's credibility, and their evaluations of children's competence to testify. Adults' detection accuracy was at chance, with the majority of children rated as truthful. Viewing the competency examination and cross-examination did not improve the adults' detection accuracy. However, seeing the cross-examination made adults' less likely to believe children's testimony. The implications of these results for the judicial system are discussed.

**Keywords** Child witness testimony · Credibility · Lie-detection

Relatively few studies have examined adults' ability to detect children's intentional lies or false testimony and these have obtained mixed findings (Haugaard & Reppucci, 1992; Honts, 1994). Some research has found that as children become older, adults find it harder to detect their deceit (Feldman, Jenkins, & Popoola, 1979; Feldman & White, 1980). More recent work has shown that adults may have difficulty detecting younger children's deceit when children are motivated to

---

V. Talwar (✉)  
McGill University,  
3700 McTavish Street, Montreal, Quebec, Canada H3A 1Y2  
e-mail: victoria.talwar@mcgill.ca

K. Lee  
University of Toronto, Toronto, Ontario, Canada

N. Bala · R. C. L. Lindsay  
Queen's University, Kingston, Ontario, Canada

lie to conceal their own transgressions (e.g., Talwar & Lee, 2002; Talwar, Lee, Bala, & Lindsay, 2004).

In most published studies on adults' detection of children's lies, children were only required to give brief responses to questions, and they were lying to conceal their own transgressions (e.g., (Lewis, Stanger, & Sullivan, 1989)). When children testify in court, they often are required to provide many details about an alleged criminal act involving others. Thus, a more ecologically relevant study is one in which children are reporting about a true or fabricated event in their lives involving others.

In fact, children often are seen as less credible (believable) than adults because their testimony is believed to be especially susceptible to coaching. It is often believed that children may be readily manipulated into reporting events that did not actually happen (Ekman, 1989). Children also may fabricate a report of an alleged event at the behest of an adult, for example, abuse against the other parent during a custody dispute (Bala & Schuman, 1999; Brennan, 1994; Haugaard & Reppucci, 1992; Jones & McGraw, 1987). Evidence shows that children will keep secrets at the prompting of an adult stranger (e.g., Bussey, Lee, & Grimbeek, 1993; Pipe & Wilson, 1994), and parents can coach their children to fabricate false reports (Bottoms, Goodman, Schwartz-Keeney, & Thomas, 2002; Talwar et al., 2004). No study has examined adults' detection (accuracy, honesty) of children's reports when children are coached to lie. It is unclear whether coaching will improve children's ability to effectively generate, maintain and conceal fabricated reports from adult detection. The purpose of the current study was to examine adult's abilities to detect children's (4–7 years) true and false reports when children were coached by their parents. In this study, adults watched video clips of a child giving mock testimony about details of a truly experienced event or an event that the child had never experienced. In the latter case, the children were coached by their parents about what to say prior to giving the false testimony. Adults were asked to judge the truthfulness of the children's stories (whether the child was telling the truth).

In addition, adult's perceptions of children's testimony were assessed as indications of credibility (factors leading the testimony to be perceived as believable). The question of credibility addresses the issue of what leads to belief independently of whether the story is actually true. Factors that may affect adults' perceptions of child witness credibility include a child's perceived general competence, suggestibility, trustworthiness, nonverbal demeanor, age, gender, and other personal characteristics (e.g., Bottoms & Goodman, 1994; Goodman, Bottoms, Herscovici, & Shaver, 1989; Haugaard & Reppucci, 1992; Ross, Dunning, Toglia, & Ceci, 1990). Given that jurors' evaluations of the accuracy of children's testimony may be subject to error, it is important to identify the factors that influence adults' judgments of children's truthfulness (Goodman et al., 1989; Wells, Turtle, & Luus, 1989).

Two other factors which may affect adults' assessments of child witnesses' are children's answers to competence examination questions and cross-examination questions. Leach, Talwar, Lee, Bala, and Lindsay (2004) found that after children responded to questions about lies or promised to tell the truth (similar to those used in the court competence examination), the accuracy of adult observers in detecting children's false denials improved significantly when compared with interviews without questions about lies, and without promises. These findings suggest that adult observation of children's responses to the competence examination may provide additional information about the child which may assist judgments of children's testimony (Bala, Lee, Lindsay, & Talwar, 2001; Honts, 1994; Leach et al., 2004.). Thus, in the current study half of the adults saw children's answers to the competence examination before seeing the child testify and half did not. Further, this study also investigated the impact of cross-examination on adults' assessments. Child witnesses were cross-examined by a "defense lawyer" who directly asked children about the truthfulness of their testimony. We hypothesized

that seeing children's responses to challenging cross-examination may increase adults' accuracy at detecting children's true and false reports.

## Method

### Participants

A total of 193 undergraduates (mean age = 19.66 years,  $SD = 2.18$ , 96 males) gave informed consent and participated in the research for extra course credit.

### Materials

Videotapes of children testifying about an event in a court simulation procedure served as stimulus material. A total of 48 children between the ages of 4 and 7 years of age participated (24 boys) in the court simulation procedure. Prior to the court simulation, parents were instructed to coach their children to tell a story about an event which commonly occurs among children, but which is not a universal experience, such as attending a wedding, going on a fishing trip, or acting in a play. Children were randomly assigned to tell a true or false story. In the true story condition, children were instructed by their parents to tell a story about an event that the child had participated in and could remember (e.g. attending a wedding). In the false story condition, children were coached by their parents to tell a story about an event the children had never actually experienced. All children were instructed to be as convincing as possible and try to make others believe that their story was true. Parents were given detailed instructions on how to coach with prompts to remember or make up details about an event (e.g. who was involved, duration, what was said, emotional feelings). Parents were instructed to practice the story 3 times a day with the child for 3 days prior to the court simulation. Parents filled out a questionnaire each day indicating how long they spent practicing. Most spent between 10 and 20 min three times a day helping the child practice their story. Parents had no knowledge of the competency or cross-examination questions and no coaching occurred for those questions. Before children participated in the court simulation, a researcher who was blind to condition interviewed all of the children to ensure they could tell a story about the event they had been assigned to tell.

Children were brought into the simulated courtroom where law and psychology graduate students played the roles of lawyers (prosecutor and defense) and judge. A video camera was placed to obtain an upper torso and headshot of the child in the witness box. The researchers and the participants in the court simulation were blind to whether the children were telling the truth.

The court simulation started with the "Judge" conducting a "competence examination." First, the Judge asked preliminary questions about the child's name, age, siblings, and school. Next, children were asked questions typically used in competence examinations (Bala et al., 2001; Lyon & Saywitz, 1999) about their understanding of truth, lies and promising to tell the truth (e.g. "Do you know the difference between the truth and a lie?"). The competence examination was completed after the child promised to tell the truth.

All children were asked to testify about the assigned event by the "Prosecutor" who prompted them with open-ended questions. After the children had told their story, they were "cross-examined" by the "Defense Attorney" about the truthfulness of their story. The child was always asked the same three questions: "Did this really happen?", "Did you make up this story?", and "Did you and your mom/dad make up this story?" Although children and parents were not told the cross-examination questions prior to the court simulation, all children asserted the truthfulness of their testimony (i.e., none recanted). The entire session lasted about 15 min

with the testimony being about 10-min long for each child. Children of the same age and sex were yoked so that a true and false version of each type of story was created. As a result, there were 24 different story topics, with one child telling a true story and one a fabricated version.

### Procedure

Each child's "court appearance" was edited into three clips: competence examination, testimony, and defense cross-examination. Undergraduates were individually placed at a computer where they viewed the video clips. Each participant saw one child's videos. The participants were instructed that they would watch a video of a child telling a story in a simulated courtroom setting and the child's story may or may not be true. The study followed a 2 (true vs. false)  $\times$  4 (ages)  $\times$  2 (sex)  $\times$  2 (competence examination vs. no competence examination) design. There were 48 stimulus tapes created. The 48 tapes viewed were of a male or female child of 4, 5, 6, or 7 years of age telling either a true or false story. There were three children of each age and sex telling true stories and three telling false stories. Male and female participants viewed either just the testimony and cross-examination, or the competence examination followed by the testimony and cross-examination.

After watching the stimulus tapes, undergraduates were asked a series of questions based on their observations. First, they were asked whether they believed that the events described by the witness really happened (Verdict 1) and their confidence rating on a 5-point scale ranging from *extremely confident* to *not at all confident*. Second, they also responded whether they thought the child was competent or not (e.g. capable of giving testimony) to testify (yes/no question). Next, a Child Witness Credibility Questionnaire was presented that included a range of questions concerning the child's perceived credibility. The questions covered aspects of the child's testimony such as perceived abilities to accurately report events, truthfulness, resistance to suggestion, consistency of the testimony, reliability of memory, and the child's demeanor. Statements concerning each of these issues were presented and rated for degree of agreement with the statements on 5-point scales with 5 indicating the *lowest level of agreement*. Responses to the child's demeanor were assessed with 34 items (e.g., "The witness appeared straightforward," "The witness appeared deceitful"). Perceptions of the child's testimony were assessed with 22 items (e.g., "The witness's testimony seemed spontaneous," "the witness's testimony seemed vague"). An additional 22 questions probed perceptions of the child rather than the testimony (e.g., "The witness was capable of remembering the alleged events," "the witness intended to tell the truth to the best of his/her ability").

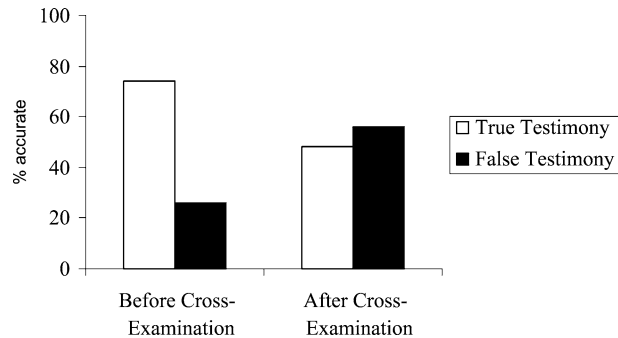
After answering all of these questions, all participants in all conditions saw a final video clip in which the "Defense Attorney" asked children about the truthfulness of their story and whether they were coached by their parents to lie. Participants were asked to make a final verdict of whether they believed the events described by the child really happened (Verdict 2), and give a confidence rating.

## Results

### Detection accuracy of true and false reports

Before cross-examination, adults were more accurate at detecting truth-tellers (74.0%) than lie-tellers (25.8%), but their overall accuracy was at chance level (49.7%; see Fig. 1). Adults tended to rate (Verdict 1 scores) the majority of children as giving truthful testimony (72.5%) regardless

**Fig. 1** Adults' accurate detection of children's true and False testimony.



of whether the children actually were telling true or false stories. When accuracy scores were calculated for adults' verdicts after seeing the cross-examination questions (Verdict 2 scores), overall, 51.8% of their decisions were accurate. Approximately half of adults correctly identified the truth-tellers (48%) and lie-tellers (56%). Signal detection analysis was used to ascertain adults' sensitivity in discriminating between true and false reports, and response biases before and after cross-examination. Before cross-examination, adults had a "truth" bias ( $d' = 0.0$ ; criterion  $c = -0.64$ ), but this bias was nearly eliminated after cross-examination ( $d' = 0.1$ ; criterion  $c = 0.1$ ).

Two logistic regression analyses were performed on adults' accuracy (i.e., whether or not they correctly identified a truth- or lie-teller) before and after cross-examination as the predicted variables. For this and subsequent logistic regression analyses, the independent variables, because they were chosen for theoretical reasons (see, Menard, 2002), were first entered as predictors. Additional predictors (i.e., interactions) were added individually to determine whether they would contribute significantly to the model. Significance was assessed by a Block chi-square test (also known as the chi-square Difference test). In this test, the retention of each predictor in a model must lower the variability substantially to justify using a more complex model. In all cases no significant results were found for any interaction terms. To analyze adults' accuracy before or after cross-examination, child age, child sex, and competence examination were entered into each regression model first as predictors, adults' competency ratings, adults' verdict scores both before and after the cross-examination were entered second. No significant results were found. Thus, adult's detection accuracy did not differ significantly whether they saw the competence and cross-examination or not, and children's age or sex did not significantly predict adults' accuracy scores. Adults' accuracy scores also did not significantly differ on the basis of their ratings of children's competence or verdict.

#### Factor structure of the child witness credibility questionnaire

An exploratory factor analysis using the principal component method of extraction with varimax rotation was performed on adults' ratings on the items of the Child Witness Credibility Questionnaire. This analysis yielded six factors that accounted for 51% of the variance. The first factor, labeled Integrity, contained 17 items (factor loadings above 0.4) that described the perceptions of the witnesses' perceived truthfulness, intention and motivation to be truthful or deceptive (eigenvalue = 19.78, 25.3% of variance accounted for). The second factor, labeled Maturity, contained seven items describing children's age related abilities (eigenvalue = 7.1, 9.1% of the variance accounted for). The third factor, labeled Testimony Quality, contained

eight items describing the perceived reliability and amount of detail of the child's testimony (eigenvalue = 4.3, 5.5% of the variance accounted for). The fourth factor, labeled Conceptual Knowledge, contained five items describing children's understanding of truth, lies, and promises (eigenvalue = 3.29, 4.1% of the variance accounted for). The fifth factor contained six items describing Testimony Consistency (eigenvalue = 2.64, 3.4% of the variance accounted for). The sixth factor, labeled Suggestibility, contained seven items describing the degree to which the testimony was perceived to be spontaneous or coached (eigenvalue = 2.63, 3.4% of the variance accounted for). For subsequent analyses, factor scores representing the six factors were derived.

#### Relation of factor scores to first verdict-confidence score

Adults' were asked to give a verdict based on whether they believed the events described by the child really occurred and their confidence of their decisions, right after they watched the child's testimony. Adults' belief ratings (Verdict 1) were combined with their associated confidence ratings to derive a new variable (Verdict–Confidence Score 1). The new variable had values that ranged from  $-5$  (*did not believe the child and was extremely confident*) to  $+5$  (*believed the child and was extremely confident*). A hierarchical linear regression also was conducted with adults' Verdict–Confidence Score 1 as the predicted variable. Child age, child sex, true/false testimony and competence examination were entered into the regression model first, and the factor scores were entered second. The first model was not significant,  $R^2$  change = 0.04, *ns*, but the second model was,  $R^2$  change = 0.31,  $p < .001$ . Further inspections revealed that this significant effect was mainly due to the factors of Integrity,  $B = -.49$ ,  $t = -8.00$ ,  $p < .001$ , Maturity,  $B = -.16$ ,  $t = -2.03$ ,  $p < .05$ , and Suggestibility,  $B = -.22$ ,  $t = -3.57$ ,  $p < .001$ , significantly predicting adults' first verdict.

#### Relation of factor scores to ratings of children's competence

A logistic regression analysis was performed with adults' ratings of children's competence to testify as the predicted variable. Child age, child sex, true/false testimony and competence examination were entered first, and the factor scores were entered second. The first model was significant,  $\chi^2(4, N = 193) = 11.01$ ,  $p < .05$ , Nagelkerke  $R^2 = 0.08$ . This significant effect was mainly due to child age, Wald = 4.48,  $p < 0.05$ , with older children rated as more competent, and child sex, Wald = 6.34,  $p < .05$ , with girls rated as more competent than boys. After partialling out these effects, Model 2 was also significant,  $\chi^2(10, N = 193) = 106.28$ ,  $p < .001$ , Nagelkerke  $R^2 = 0.57$ . The factors of Integrity, Wald = 17.61,  $p < 0.05$ , Testimony Quality, Wald = 26.40,  $p < 0.05$ , Conceptual Knowledge, Wald = 26.54,  $p < 0.05$ , and Testimony Consistency, Wald = 13.28,  $p < 0.05$ , significantly predicting adults' ratings of child competence.

#### Relation of factor scores to second verdict-confidence score

After they saw children being cross-examined by the "defense lawyer," adults' were asked to give a second verdict based on whether they believed the events described by the child really occurred, and their confidence of their verdict. After seeing the children answer cross-examination questions, only 46% of adults believed the child witnesses' testimony and most adults were either very confident (35%) or somewhat confident (37%). Adults' belief ratings (Verdict 2) were combined with their associated confidence ratings to derive a new variable (Verdict–Confidence Score 2). The new variable had values that ranged from  $-5$  (*did not believe the child and was extremely confident*) to  $+5$  (*believed the child and was extremely confident*). A hierarchical linear regression was conducted with adults' Verdict–Confidence Score 2 as the

predicted variable. Child age, child sex, true/false testimony and competence examination were entered into the regression model first, and the factor regression scores were entered second. The first model was not significant,  $R^2$  change = 0.04, *ns*, but the second model was significant,  $R^2$  change = 0.11,  $p < .001$ . This significant effect was mainly due to the factor of Integrity significantly predicting adults' second verdict scores,  $B = -.30$ ,  $t = -4.21$ ,  $p < .001$ .

#### Changes in adults' first and second verdict-confidence scores (before and after cross-examination)

A repeated measures ANOVA was conducted with adults' verdict-confidence scores before and after cross-examination (Verdict-Confidence Score 1 and 2) as the dependent measure and true/false testimony, competence examination, child sex, and child age as the independent variables. Adults believed the child witnesses more before cross-examination ( $M = 1.79$ ,  $SD = 3.01$ ) than after ( $M = 0.30$ ,  $SD = 3.61$ ),  $F(1, 193) = 70.99$ ,  $p < .001$ . Adults also found girls more truthful ( $M = 1.29$ ,  $SD = 2.7$ ) than boys ( $M = 0.14$ ,  $SE = 3.33$ ),  $F(1, 193) = 8.38$ ,  $p < .01$ .

## Discussion

In this study, adults were only able to detect children's coached true and false reports at chance level. Initially, they tended to have a "truth" bias: adults believed children's testimony regardless of actual truthfulness. Overall, our results are consistent with the findings of previous research (Lewis, Stanger, Sullivan, 1989; Talwar & Lee, 2002), and suggest that in general adults are unable to accurately discriminate between true and false reports in children merely by observing the children testify. Past research has suggested that when children are asked to provide longer narratives or answer follow-up questions, their fabricated reports may be easier to detect (Orcutt, Goodman, Tobey, Batterman-Faunce, & Thomas, 2001; Talwar & Lee, 2002). However, in this study, despite seeing children give fairly lengthy accounts of past events and answer follow-up questions about their testimony, adults remained at chance in their ability to detect accurately children's true and false reports. This difference between the present and past findings may be due to the fact that children in this study were coached repeatedly to give a false report whereas children in the previous studies were not. Although adults' detection may be better for children's noncoached reports, in most court cases, when children testify they have been repeatedly interviewed and may well have been coached by an adult to lie, prior to their actual testimony. Thus, it is ecologically relevant to examine whether repeated practice and coaching of children's reports makes children's lies convincing and less detectable. The present results suggest that children may be easily coached to tell convincing stories and coaching makes it harder for adults to detect the truth of their testimony.

Adult perceptions of children's integrity, maturity, testimonial quality, conceptual knowledge, and suggestibility all significantly predicted adults' assessments of children's perceived credibility. In particular, adults' initial belief in the truthfulness of children's testimony after seeing children's testimony was influenced by their perceptions of children's maturity, and integrity. However, adults' final verdict scores given after seeing children answering cross-examination questions were only related to their perception of the child's integrity. Similar to Ross et al. (2003), the current study found that adults' perceptions of children's honesty had the biggest predictive value of adults' assessment of child witnesses. Thus, although adults are unable to reliably distinguish true from false testimony, their perceptions of children's integrity influence their overall assessments of perceived credibility and thus belief of the child's testimony.

Furthermore, the present results showed that adult perceptions of children were influenced by the sex and age of the child. Adults rated girls as capable witnesses significantly more than they

did boys, and adults were more likely to believe that girls were telling the truth, even though they were not. These findings are consistent with the existing reports that adults are more likely to consider girls as truth-tellers than boys (Stouthamer-Loeber, 1986; Talwar & Lee, 2002) despite research suggesting that girls are as likely to tell lies as boys (Ekman, 1989; Talwar & Lee, 2002). Despite having received coaching before testifying, younger children were rated as less competent than older children. This finding is similar to previous findings that child witness age is related to adult perceptions of child witness credibility (Bala, Lindsay, Lee, & Ramakrishnan, 2005; Leippe, Manion, & Romanczyk, 1992).

Viewing the competence examination did not help adults distinguish accurately between children's true and false testimony. Adults were not more likely to perceive children as credible when they saw them participate in a competence examination. It should also be noted that even after promising to tell the truth, no children recanted their false report at anytime during the mock trial. These findings are in line with the existing studies that have shown that children's responses in a competence examination do not predict the truthfulness of their testimony (London & Nunez, 2002; Lyon, 2000; Talwar & Lee, 2002). Thus, it appears that seeing children answer questions about truth and lies in the competence examination does not increase the likelihood of an accurate assessment of truthfulness.

With regard to cross-examination, several findings of this study are noteworthy. First, observing children answering cross-examination questions affected adults' judgments of child witness credibility, making adults less likely to believe a child's testimony. Although adult detection of true and false reports remained at a chance level before and after watching the cross-examination, observing cross-examination led to a decrease in adults' "truth bias." Before the cross-examination, adults were more inclined to believe that children were telling the truth, but after the brief cross-examination adults were less likely to be biased, suggesting the importance of cross-examination for a fair trial.

Second, cross-examination has been described as "the greatest engine ever invented for the discovery of truth" (Wigmore, 1940). Cross-examination questions are supposed to help judges and jurors arrive at the truth. In this study, cross-examination failed to increase adults' detection of true and false reports. However, it is possible adults judgments may have been influenced by filling out the credibility survey before seeing the cross-examination. It should also be noted that in actual trials, children are likely to be asked many more questions in the cross-examination than in the current study, and the questions are likely to be directed to specific aspects of the testimony rather than the general ones employed here. Because of ethical concerns and methodological challenges, there has been very little research on the question of whether cross-examination enhances the ability of jurors to correctly ascertain the truth of children's testimony (Goodman, Golding, Helegen, Haith, & Michelli, 1987). The present results provide some preliminary evidence of the effects of cross-examination on jurors' perceptions, but must be replicated in future studies with larger samples before their legal implications can be considered.

## References

- Bala, N., Lee, K., Lindsay, R. C. L., & Talwar, V. (2001). A legal and psychological critique of the present approach to the assessment of the competence of child witnesses. *Osgoode Hall Law Journal*, *38*, 409–451.
- Bala, N., Lindsay, R. C. L., Lee, K., & Ramakrishnan, R. (2005). Judicial assessment of the credibility of child witnesses. *Alberta Law Review*, *42*, 4.
- Bala, N., & Schuman, J. (1999). Allegations of sexual abuse when parents have separated. *Canadian Family Law Quarterly*, *17*, 191–241.
- Bottoms, B. L., & Goodman, G. S. (1994). Perceptions of children's credibility in sexual assault cases. *Journal of Applied Social Psychology*, *24*, 702–732.

- Bottoms, B. L., Goodman, G. S., Schwartz-Keeney, B. A., & Thomas, S. N. (2002). Understanding children's use of secrecy in the context of eyewitness reports. *Law and Human Behavior, 26*, 285–314.
- Brennan, M. (1994). The battle for credibility—Themes in the cross-examination of child victim witnesses. *International Journal of Semiotics of Law, 7*, 51–73.
- Bussey, K., Lee, K., & Grimbeek, E. J. (1993). Lies and secrets: Implications for children's reporting of sexual abuse. In G. S. Goodman & B. L. Bottoms (Eds.), *Child victims, child witnesses: Understanding and improving testimony* (pp. 147–168). New York: Guilford Press.
- Ekman, P. (1989). Why lies fail and what behaviors betray a lie. In J. C. Yuille (Ed.), *Credibility assessment: NATO advance science institute series: Series D: Behavioral and social sciences, 47* (pp. 71–81). New York: Kluwer.
- Feldman, R. S., Jenkins, L., & Popoola, O. (1979). Detection of deception in adults and children via facial expressions. *Child Development, 50*, 350–355.
- Feldman, R. S., & White, J. B. (1980). Detecting deception in children. *Journal of Communication, 30*, 121–128.
- Goodman, G. S., Bottoms, B. L., Herscovici, B. B., & Shaver, P. (1989). Determinants of the child victim's perceived credibility. In S. J. Ceci, D. F. Ross, & M. P. Toglia (Eds.), *Perspectives on children's testimony* (pp. 1–22). New York: Springer-Verlag.
- Goodman, G. S., Golding, J. M., Helegen, V. S., Haith, M. M., & Michelli, J. (1987). When a child takes the stand. *Law and Human Behavior, 11*, 27–40.
- Haugaard, J. J., & Reppucci, N. D. (1992). Children and the truth. In S. J. Ceci, M. D. Leichtman, & M. Putnick (Eds.), *Cognitive and social factors in early deception* (pp. 29–45). Hillsdale, NJ: Erlbaum.
- Honts, C. R. (1994). Assessing children's credibility: Scientific and legal issues in 1994. *North Dakota Law Review, 70*, 879–899.
- Jones, D. P., & McGraw, J. M. (1987). Reliable and fictitious accounts of sexual abuse to children. *Journal of Interpersonal Violence, 2*, 27–45.
- Leach, A. M., Talwar, V., Lee, K., Bala, N., & Lindsay, R. C. L. (2004). Intuitive lie detection of children's deception by law enforcement officials and university students. *Law and Human Behavior, 28*, 661–685.
- Leippe, M. R., Manion, A. P., & Romanczyk, A. (1992). Eyewitness persuasion: How and how well do fact finders judge the accuracy of adults' and children's memory reports? *Journal of Personality and Social Psychology, 63*, 181–197.
- Lewis, M., Stanger, C., & Sullivan, M. W. (1989). Deception in 3 year olds. *Developmental Psychology, 25*, 439–443.
- London, K., & Nunez, N. (2002). Examining the efficacy of truth-lie discussions in predicting and increasing the veracity of children's reports. *Journal of Experimental Child Psychology, 83*, 131–147.
- Lyon, T. D. (2000). Child witnesses and the oath: Empirical evidence. *Southern California Law Review, 73*, 1017–1074.
- Lyon, T. D., & Saywitz, K. J. (1999). Young maltreated children's competence to take the oath. *Applied Developmental Science, 3*, 16–27.
- Menard, S. (2002). *Applied logistic regression analysis* (2nd ed.). Thousand Oaks, CA: Sage. Series: Quantitative applications in the social sciences, No. 106.
- Orcutt, H. K., Goodman, G. S., Tobey, A. E., Batterman-Faunce, J. M., & Thomas, S. (2001). Detecting deception in children's testimony; Factfinders' abilities to reach the truth in open court and closed-circuit trials. *Law and Human Behavior, 25*, 339–372.
- Pipe, M., & Wilson, J. C. (1994). Cues and secrets: Influences on children's event reports. *Developmental Psychology, 30*, 515–525.
- Ross, D. F., Dunning, D., Toglia, M., & Ceci, S. J. (1990). The child in the eyes of the jury: Assessing mock juror's perceptions of the child witness. *Law and Human Behavior, 14*, 5–23.
- Ross, D. F., Jurden, F. H., Lindsay, R. C. L., & Keeney, J. M. (2003). Replications and Limitations of a Two-Factor Model of child Witness Credibility. *Journal of Applied Social Psychology, 33*, 418–431.
- Stouthamer-Loeber, M. (1986). Lying as a problem behavior in children: A review. *Clinical Psychology Review, 6*, 267–289.
- Talwar, V., & Lee, K. (2002). The development of lying to conceal a transgression: Children's control of expressive behavior during verbal deception. *International Journal of Behavioral Development, 26*, 436–444.
- Talwar, V., Lee, K., Bala, N., & Lindsay, R. C. L. (2002). Children's conceptual knowledge of lie-telling and its relation to their actual behaviors: Implications for court competence examination. *Law and Human Behavior, 26*, 395–415.

- Talwar, V., Lee, K., Bala, N., & Lindsay, R. C. L. (2004). Children's lie-telling to conceal a parent's transgression: Legal implications. *Law and Human Behavior*, 28, 411–435.
- Wells, G. L., Turtle, J. W., & Luus, C. A. E. (1989). The perceived credibility of child eyewitnesses: What happens when they use their own words? In S. J. Ceci, D. F. Ross, & M. P. Toglia (Eds.), *Perspectives on children's testimony*. (pp. 23–36). New York: Springer-Verlag.
- Wigmore, J. H. (1940). *Evidence in trials at common law*. Boston: Little, Brown.