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66. Younger and Older Adults' Lie-Detection and Credibility Judgments of Children's Coached Reports

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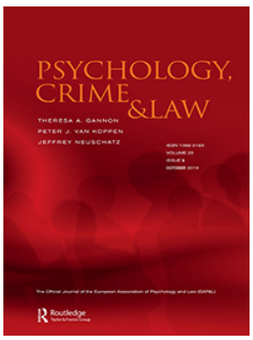

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Younger and older adults' lie-detection and credibility judgments of children's coached reports

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ABSTRACT

Previous research has examined young and middle-aged adults' perceptions of child witnesses; however, no research to date has examined how potential older adult jurors may perceive a child witness. The present investigation examined younger (18–30 years, $N = 100$) and older adults' (66–89 years, $N = 100$) lie-detection and credibility judgments when viewing children's truthful and dishonest reports. Participants viewed eight child interview videos where children (9–11 years of age) either provided a truthful report or a coached fabricated report to conceal a transgression. Participants provided lie-detection judgments following all eight videos and credibility assessments following the first two videos. Participants completed a General Lifespan Credibility questionnaire to assess credibility evaluations across various witness ages. Lie-detection results indicated that older adults had significantly lower discrimination scores, a stronger truth bias, and greater confidence compared to younger adults. Older adults also rated children as more competent to testify in court, credible, honest, believable, and likeable than younger adults. Participants with greater differences in their credibility evaluations for truth and lie-tellers were significantly more accurate at detecting lies. Responses to the Lifespan Credibility questionnaire revealed significant differences in younger and older adults' credibility evaluations across the lifespan.

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Child witnesses; older adults; lie-detection; credibility; jury

A large body of research has examined how potential young and middle-aged adult jurors assess the veracity (i.e. if a statement is truthful or not) and credibility of children's reports (e.g. Bala, Evans, & Bala, 2010; Gongola, Scurich, & Quas, 2017; Ross, Jurden, Lindsay, & Keeney, 2003; Talwar & Crossman, 2012). Despite this breadth of research, the child-witness field has failed to examine an important population of potential jurors, older adults (those over the age of 65). This is particularly problematic as the population of older adults is currently growing faster than any other group and is expected to double by 2030 as the baby-boomer generation continues to move into older adulthood (Blowers, 2015; Brank, 2007; Flynn, 2000; Statistics Canada, 2011, 2016; USDCESA, 2004). Brank and Wylie (2015) and Blowers (2015) recently noted that the growth of the older

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adult population increases the likelihood that they will be involved in various aspects of the justice system and urged researchers to advance our limited understanding of older adults in this context. In response to this, the aim of the present study was to understand how potential older adult jurors would evaluate child witnesses compared to younger adults. In addition to the increasing population of older adults, older adults are more willing to accommodate jury duty into their daily routine compared to younger age groups (Boatright, 2001). As such, older adults represent a promising and important group of potential jurors, making it imperative for legal-psychological research to provide a more comprehensive understanding of the role of potential older adult jurors.

Although no studies to date have examined how older adults perceive child witnesses, a limited line of experimental research has compared younger and older adults' juror decision-making in cases with adult witnesses and have found support for age differences (Fitzgerald, 2000; Higgins, Heath, & Grannemann, 2007; Mossiere & Dalby, 2008). For example, in a mock-jury study, Higgins et al. (2007) found that older adults (55–90-years-old) viewed an adult defendant who attacked another man as more responsible for his behavior and were more certain in their verdicts compared to younger adults. Furthermore, jury age is related to trial outcomes in court cases. Anwar, Bayer, and Hjalmarsson (2014) examined over 700 felony trials in Florida and found that the likelihood of a jury convicting a defendant increased when the average age of the jury was above 50 years old. In addition, research examining attorney behaviors when selecting jurors indicates that attorneys sometimes use peremptory challenges (the option to object to a member being chosen for the jury without providing an explanation) to exclude jurors based on age depending on the trial outcome they are seeking (Anwar et al., 2014; Baldus, Woodworth, Zuckerman, Weiner, & Broffitt, 2001; Entzel, Dunlop, & Rothman, 2000), such that the prosecution is more likely to exclude younger jurors and the defense is more likely to exclude older jurors (classified as those over the age of 55).

Taken together, the extant research demonstrates how younger and older adults can bring different perspectives to a jury in cases with adult witnesses. Thus, an interesting avenue of research is to examine if younger and older adults have different perceptions of child witnesses. Understanding how children's reports are perceived is vital as children are most often called to testify in cases involving abuse and family disputes. Failure to identify the truth in such cases has severe consequences for both the child and accused. Thus, throughout forensic and court proceedings, adults are tasked with evaluating the credibility of children's reports and determining if they believe the event occurred. Specifically, the credibility of a witness is an overall judgment that refers to the believability and plausibility of one's testimony (Bala, Ramakrishnan, Lindsay, & Lee, 2005; Connolly, Price, Lavoie, & Gordon, 2008; Talwar, Lee, Bala, & Lindsay, 2006). Credibility judgments tend to be comprised of accuracy, honesty, confidence, memory (one's willingness to admit when he or she does not remember something), and suggestibility (one's acquiescence to misleading questions) ratings (Bala et al., 2005; Connolly et al., 2008; Talwar et al., 2006). Given that jurors are often tasked with assessing the credibility of a witness and their testimony, as well as determining if they believe the testimony to be true, understanding credibility and lie-detection judgments from older adults will help to provide a comprehensive understanding of how child witnesses may be evaluated.

Lie-detection

There is a breadth of research examining young and middle-aged adults' detection of children's truthful and dishonest statements. Adults are typically at, or slightly above, chance when detecting truths and lies in children (Ekman, O'Sullivan, Friesen, & Scherer, 1991; see Gongola et al., 2017 for a meta-analysis). Beyond accuracy, one can tend to rate statements as honest (a truth bias) or dishonest (a lie bias). Adults tend to hold a truth bias when rating the veracity of children's statements (e.g. Evans, Bender, & Lee, 2016; Saykaly, Crossman, & Talwar, 2017; Strömwall & Granhag, 2005; Talwar, Renaud, & Conway, 2015; Westcott, Davies, & Clifford, 1991; but see Crossman & Lewis, 2006; Edelstein, Luten, Ekman, & Goodman, 2006; Masip, Garrido, & Herrero, 2004).

A limited line of research has examined older adults' lie-detection judgments when rating younger adults' and older adults' lies. Results indicate that older adults are slightly less accurate than younger adults at detecting lies, in part because of lower emotion recognition abilities (Ekman & O'Sullivan, 1991; Ruffman, Murray, Halberstadt, & Vater, 2012; Stanley & Blanchard-Fields, 2008; Sweeney & Ceci, 2014; but see Bond, Thompson, & Malloy, 2005). Given the lie-detection differences between younger and older adults when rating adult lies, research examining this pattern when detecting children's lies is warranted.

Despite the rich literature examining adults' abilities to detect children's lies, a limitation in many detection studies is that adults are asked to detect children's low-stake lies (e.g. concealing a minor transgression) or children's simple denials of a transgression (e.g. yes or no responses). Emerging research has begun to examine the detection of children's higher-stake lies (Nysse-Carris, Bottoms, & Salerno, 2011; Wyman, Foster, Lavoie, Tong, & Talwar, 2018) and lies told in a free-recall narrative (e.g. Saykaly et al., 2017; Talwar et al., 2006; Wyman et al., 2018). This has been an important development in the field as requesting adults to evaluate children when they are interviewed utilizing a free-recall narrative after they have engaged in a more serious transgression with an adult may be more akin to scenarios in which children are interviewed in a forensic context. However, previous research has examined children's higher-stake lies about another's transgression. Thus, in the present study we examined younger and older adults' abilities to detect children's higher-stake coached lies to conceal a *co-transgression* with an adult confederate in a free-recall interview.

Perceptions of credibility

One's perception of children's credibility can also impact jurors' decision-making. Despite the importance of child testimony, historical attitudes towards child witnesses have suggested that they cannot serve as credible witnesses (Leippe & Romanczyk, 1987; Ross, Dunning, Toglia, & Ceci, 1990). More recently, a wide body of research has identified how children can be reliable witnesses (e.g. Bala et al., 2010; Talwar & Crossman, 2012). However, experimental studies have found mixed results in terms of how adults perceive children's credibility, with some reporting children to be perceived as less credible than adults (Goodman & Michelli, 1981; Goodman, Golding, & Haith, 1984; Goodman, Golding, Helgeson, Haith, & Michelli, 1987; Leippe & Romanczyk, 1987), more credible than adults (Leippe & Romanczyk, 1989; Ross, Miller, & Moran, 1986), and just as credible

(Johnson & Grisso, 1986; Luus, Wells, & Turtle, 1995; Ross et al., 1986, 2003; Wells, Turtle, & Luus, 1989). Continued research assessing a wider variety of potential jurors (i.e. both younger and older adults) will help to enrich the child credibility literature.

The present study

The present study sought to examine younger and older adults' lie-detection judgments and perceptions of child-witness credibility upon viewing children's (9–11 years old) truthful and dishonest (coached) reports after engaging in a co-transgression (breaking a computer) with a confederate. A sample of younger (18–30 years) and older adults (66–89 years) watched a series of eight child interview videos: four lie-tellers (who were coached to conceal co-transgressing with an adult) and four truth-tellers (who truthfully reported no transgression occurring). Participants provided a veracity (lie-detection) judgment and confidence in this judgment following all eight videos and completed a credibility questionnaire after each of the first two videos (based on Connolly et al., 2008; Leippe & Romanczyk, 1989; Ross et al., 2003; Talwar et al., 2006). Additionally, to extend the present study beyond the specific video stimuli shown, participants were asked to rate the overall credibility of witnesses across the lifespan (from age 5 to over the age of 18).

First, we were interested in examining if and how younger and older adults differed when providing lie-detection and credibility judgments. In line with previous lie-detection studies, we predicted that, on average, both younger and older participants' detection accuracy would hover around chance levels (Gongola et al., 2017). Further, based on previous research demonstrating lower accuracy rates from older adults compared to younger adults when evaluating adult lies (Ekman & O'Sullivan, 1991; Ruffman et al., 2012; Stanley & Blanchard-Fields, 2008), we predicted that older adults would be less accurate compared to younger adults when evaluating children's lies. Given that no studies to date have examined older adults' perceptions of children, our lie-detection bias (truth vs. lie bias) and credibility analyses (for the video assessments and the general lifespan credibility evaluations) were exploratory with no directional hypotheses as theoretical explanations could predict either direction. For example, in line with the positivity bias observed in later life where older adults seek more positive attitudes and experiences (e.g. Luong, Charles, & Fingerman, 2011; Mather & Carstensen, 2005; Reed & Carstensen, 2012), older adults may show greater sympathy towards children, resulting in stronger truth biases and higher credibility ratings compared to younger adults. On the other hand, based on research that has found higher conservativeness in older adults (Anwar et al., 2014; Higgins et al., 2007), older adults may hold more traditional views of children, such that children are not as capable of providing accurate testimonies, thus reporting stronger lie biases and lower credibility ratings compared to younger adults.

In addition to how credibility evaluations differed among younger and older adults, we sought to examine how these evaluations differed based on video veracity (truth or lie-teller). Given that the truth-telling children played the game being discussed in the interview, they may be more likely to provide elaborate and believable responses. Thus, we predicted that participants would provide significantly more favorable credibility assessments to the truth-telling children compared to the lie-telling children.

Lastly, to assess the relation between credibility evaluations and lie-detection accuracy, we examined whether participants with greater differences in their credibility evaluations for truth and lie-tellers would be significantly more accurate at detecting lies.

Method

Participants

One-hundred younger adults (M_{age} = 20.03, SD = 2.42, range = 18–30, 30 males) and 100 older adults (M_{age} = 73.41, SD = 4.72, range = 66-to-89 years, 30 males) participated in this study. All younger adults were current university undergraduate students. Older adults were recruited from local community events and from a database of community members who indicated that they would like to be contacted to participate in research studies. Ninety percent of younger adults indicated that high school was their highest completed level of education, 9% had completed a college degree, and 1% had completed a postgraduate degree. The ethnicity of the younger adult sample was: 79% Caucasian, 6% South Asian, 6% Latin American, 5% African-American, 2% East Asian, 1% West Asian, and 1% mixed ethnicity.

For older adults, highest level of education and total household income were collected as indicators of socioeconomic status. Two percent of older adults did not complete high school, 25% completed high school, 38% completed college or university, and 35% completed a postgraduate degree. In addition, 11% of older adults had a total income under $25,000, 21% had an income between $25,000 and $49,000, 47% had an income between $50,000 and $99,000, and 19% had an income over $100,000 (2% of participants did not report income). Ninety-two percent of older adults were retired at the time of the study. The ethnicity of the older adult sample was: 98% Caucasian, 1% South Asian, and 1% did not report. All participants gave informed consent prior to the study and were compensated for their participation (younger adults received either course credit or $5 and all older adults received $5).

Materials

Video stimuli

A total of eight child interviews (M_{age} = 10.13, SD = .835, range = 9–11 years old, 3 males) were selected as the stimuli for the present study. Video stimuli were from a prior study (Evans & Lyon, 2013) where children were interviewed about an interaction with a confederate. During the interaction with the confederate, all children played a computer game. Half of the children were randomly assigned to a transgression condition where the confederate told the child that they were going to play an alternative 'forbidden' game (the Jewel Game) on the computer that resulted in the computer crashing and losing all the data on the computer. The confederate then asked the child not to tell their boss (who would be asking the child about the game they played together) that they played the forbidden game. After the child agreed not to tell, the confederate coached the child to conceal four details from the forbidden game they played (i.e. 'Don't say you saw little people on the screen … Don't say you heard music … Don't say you saw blocks falling

… Don't say you used the computer mouse'), and coached the child to report four details from the game that they were supposed to have played (the Ball game; i.e. 'Say there were balls rolling across the screen … Say you saw a bug … Say there were birds … Tell her you pressed the green button'). The other half of the children were assigned to a control group in which they played the game that they were supposed to (the Ball Game) and the computer did not crash. All children were then interviewed by a female experimenter (the boss) about what happened. The interviewer was blind to what condition (transgression or control) the child was assigned. After building rapport with children, the interviewer asked a series of open-ended questions (i.e. 'Tell me everything that happened while I was out of the room … What happened next? You said [child's statement], tell me more about [child's statement] … Tell me everything you heard while I was gone … Tell me everything you saw on the computer while I was gone'). The confederate and interviewer followed standardized scripts to ensure all children received the same instructions and prompts. Videos were randomly selected based on condition (control vs. transgression) and statement veracity (truthful vs. dishonest) and were matched for age and gender to the best of our ability. Half of the eight videos included children telling the truth about playing the Ball Game (control condition; $M_{age} = 10.25$, $SD = .957$, 1 male) and the other half included children lying about playing the Ball Game (transgression condition; $M_{age} = 10.00$, $SD = .817$, 2 males). The average length of videos was 3.47 min and did not differ across truth and lie-tellers $t(6) = .257$, $p = .806$.

Lie-detection

To assess lie-detection judgments, a forced choice question ('Do you think the child was truthful or dishonest?') was asked along with a confidence rating about this lie-detection judgment on a scale of *0–100* where higher scores indicated higher confidence.

Child credibility questionnaire

To assess participants' credibility evaluations of the children in the videos, a 9-item credibility questionnaire was constructed based on previously used credibility measures (Connolly et al., 2008; Leippe & Romanczyk, 1989; Ross et al., 2003; Talwar et al., 2006). Credibility ratings were assessed by tapping into seven specific credibility factors (*honesty, believability, accuracy, consistency, confidence, suggestibility*, and *likeability*), as well as *overall credibility*. Participants were also asked to rate how *competent* the child would be to testify in court. Responses were given using a six-point Likert scale ranging from *1* (e.g. not at all credible) to *6* (e.g. very credible). Higher ratings depicted greater credibility in all scales except for suggestibility, where higher scores indicated that children were rated as more suggestible.

General lifespan credibility questionnaire

To measure general perceptions of witness credibility across the lifespan (not specific to the videos shown), participants were asked to rate the overall credibility of each of the following age groups on scales from *0* to *100*: 5- to 7-year-olds, 8- to 10-year-olds, 11- to 12-year-olds, 13- to 17-year-olds, and adults over the age of 18. Higher scores indicated greater credibility.

Mini mental state examination (Folstein, Folstein, & McHugh, 1975)

In studies utilizing both younger and older adults, it is advisable to administer an assessment of cognitive functioning. In the present study, we administered the Mini Mental State Examination (MMSE). The MMSE is an eleven-item test that measures orientation (e.g. 'What is today's date?'), registration (e.g. 'Please name these three objects'), attention and calculation (e.g. 'Please spell the word 'world' backwards'), recall (e.g. 'Please recall the three items I asked you to name earlier'), and language (e.g. 'Please write a full sentence'). Scores can range from *0* to *30* with scores under 23 indicating potential cognitive impairment for those with at least a completed high-school education.

Procedure

Participants watched all eight videos with the order of videos randomized between participants. Participants were told that in each interview, the child may or may not be telling the truth about what happened. Participants were not informed about the total number of videos that they would evaluate. After each of the first two videos (trial 1 and trial 2), participants were presented with the lie-detection and child credibility questionnaires. For trials 3–8, participants only completed the lie-detection questionnaire (asking participants for a lie-detection judgment and confidence rating) to reduce time demands while still allowing for an increased number of trials for conducting signal detection analysis of the lie-detection ratings. As such, all participants completed lie-detection ratings for all eight videos and credibility ratings for two videos. For the two trials of the credibility evaluations, the randomization of video presentation created four video order conditions: truth-truth, lie-lie, truth-lie, lie-truth. For example, in the truth-lie condition participants viewed a truthful video on the first trial followed by a dishonest video on the second trial.

After evaluating all eight videos, participants completed the General Lifespan Credibility questionnaire to assess if the potential differences in younger and older adults' credibility ratings were confined to certain witness ages. Lastly, participants completed the MMSE (Folstein et al., 1975) to assess cognitive health.

Results

MMSE

Our participants were cognitively healthy (i.e. did not show signs of dementia; younger adults: Mean MMSE score = 29.38, $SD = .91$, range = 26–30; older adults: Mean MMSE score = 28.41, $SD = 1.38$, range = 23–30). Thus, all participants were included in the present study.

Lie-detection

Accuracy

Participants were 62% accurate at detecting the veracity of children's statements. An independent samples t-test revealed that younger adults were significantly more accurate (67%) than older adults (57%), $t(199) = 11.99$, $p < .001$, $d = 0.70$. However, both age groups' overall accuracy scores were found to be significantly greater than chance

(50%), $t(99)_{\text{younger-adult}} = 12.18$, $p < .001$ $d = 1.22$, $t(99)_{\text{older-adult}} = 5.60$, $p < .001$, $d = 0.56$. See Table 1 for participants' accuracy scores by video veracity. Of note, participants' detection accuracy on the first trial was not significantly different from accuracy on subsequent trials ($ps > .05$), suggesting that participants' accuracy did not increase or decrease from completing multiple trials.

Signal detection analysis

Examining percentage accuracy provides an overall picture of detection performance; however, signal detection analyses help to show the *quality* of participants' judgments, including the ability to discriminate between statements (i.e. whether participants are able to correctly identify a lie-teller *and* correctly identify the absence of a lie-teller) and potential biases in responding (i.e. whether participants favor providing a certain response over the other). Accordingly, signal detection analyses were utilized to examine participants' ability to correctly discriminate between the truth and lie-telling videos (d'), and to examine if participants held any biases in rating the videos (criterion c). Participants' hit rates were calculated by dividing the number of hits (correctly identifying a lie-teller) by the number of lie trials (4). False alarm rates were calculated by dividing the number of false alarms (inaccurately identifying a truth-teller as a lie-teller) by the total number of truth trials (4). D' values were then calculated by subtracting standardized false alarm rates from standardized hit rates. Higher d' scores indicated greater discriminatory ability (i.e. a higher hit rate and lower false alarm rate). *Criterion c* scores were calculated by adding standardized hit and false alarm rates and multiplying by −.5. Positive criterion c values indicated a truth bias (higher values indicating a stronger truth bias) and negative scores indicated a lie bias (lower values indicating a stronger lie bias; see Stanislaw & Todorov, 1999 for further information on signal detection analyses). See Table 1 for mean d' and criterion c values by video veracity.

Discrimination

Participants' mean discrimination score was 0.40 ($SD = 0.48$). An independent samples t-test indicated that younger adults had significantly greater discrimination scores compared to older adults, $t(198) = 5.30$, $p < .001$, $d = 0.75$, and both age groups' discrimination scores were significantly greater than zero (zero indicates no sensitivity), $t(99)_{\text{younger-adult}} = 12.09$, $p < .001$, $d = 1.81$, $t(99)_{\text{older-adult}} = 5.50$, $p < .001$, $d = 0.55$.

Biases

Participants' mean bias (criterion c) score was 0.62 ($SD = 0.45$), suggesting a truth bias. An independent samples t-test corrected for the violation of homogeneity of variance indicated that older adults held a significantly stronger truth bias compared to younger adults, $t(190.56) = 5.09$, $p < .001$, $d = 0.73$. Criterion c scores from both age groups were

Table 1. Means (and standard deviations) for lie-detection accuracy rates and signal detection analyses.

	Overall Accuracy	Truth Accuracy	Lie Accuracy	d'	Criterion c	Confidence
Younger adults	.67 (.14)	.86 (.17)	.47 (.29)	.57 (.47)	.47 (.46)	72.19 (11.21)
Older adults	.57 (.13)	.90 (.16)	.25 (.25)	.23 (.42)	.77 (.38)	75.91 (11.33)

significantly greater than zero (zero indicates no bias), $t(99)_{\text{younger-adult}} = 10.09$, $p < .001$, $d = 1.01$, $t(99)_{\text{older-adult}} = 20.36$, $p < .001$, $d = 2.04$.

Confidence

The mean confidence rating across participants was 74%. An independent samples t-test indicated that older adults reported significantly greater confidence (76%) compared to younger adults (72%), $t(198) = 2.33$, $p = .021$, $d = 0.33$. Confidence was not significantly related to participants' accuracy scores (younger adults: $r = .002$, $p = .98$, older adults: $r = .005$, $p = .96$) or discrimination scores (younger adults: $r = -.022$, $p = .83$, older adults: $r = -.013$, $p = .90$). While confidence was not significantly related to older adults' bias ($r = .121$, $p = .23$), it was significantly positively related to younger adults' bias (criterion c) score, such that higher confidence was related to a stronger truth bias ($r = .212$, $p = .034$).

Child credibility assessments

To examine participants' credibility assessments across the first two videos, a series of 2 (Trials: trial 1 vs trial 2) × 2 (Age group: younger vs. older adults) × 4 (Video condition: truth-truth, lie-lie, truth-lie, lie-truth) repeated measures ANOVAs were conducted on each credibility measure. See Table 2 for the mean scores for each credibility measure and Table 3 for the ANOVA results. Since our main question of interest centered upon age group differences, results are presented below with the main effects of age first, followed by main effects of video condition, and finally any significant interactions.

Effects of age group

Significant main effects of age group (younger vs. older adults) were found for ratings of children's *competence to testify, overall credibility, honesty, believability,* and *likeability* (*likeability* was qualified by a three-way interaction, see below), such that older adults provided higher ratings in these domains compared to younger adults. No significant main effects of age group were found for ratings of children's *accuracy, consistency, confidence, or suggestibility*.

Effects of video condition

Significant main effects of video condition (truth-truth, lie-lie, truth-lie, lie-truth) were found for ratings of children's *competence to testify, overall credibility, honesty, believability, accuracy, consistency,* and *confidence*, indicating that evaluations differed across video conditions. No significant main effects of video condition were found for ratings of *suggestibility* or *likeability*. Ratings of children's *competence to testify, overall credibility, honesty, believability, accuracy, consistency, confidence,* and *suggestibility* were each qualified by a significant trial by video condition interaction. Thus. follow-up repeated measures ANOVAs were conducted to investigate the effect of trial (trial 1 vs. trial 2) separately for each video condition on each credibility score. Results indicated that ratings only significantly differed across trial 1 and trial 2 in the truth-lie and lie-truth conditions (i.e. in the video conditions where the video veracity changed), ps $< .05$. Specifically, truth-tellers were given higher ratings in their *competence to testify, overall credibility, honesty*, *believability, accuracy, consistency,* and *confidence* and lower ratings of *suggestibility* compared to the lie-tellers in both the truth-lie and lie-truth conditions. No ratings significantly

Table 2. Means (and standard deviations) for the credibility measures as a function of participant age group and video condition.

	Video condition							
	Truth-Truth		Lie-Lie		Truth-Lie		Lie-Truth	
	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2	Trial 1	Trial 2
Competence to testify								
Younger	4.00 (.97)	3.61 (1.58)	2.30 (1.15)	2.87 (1.63)	3.32 (1.25)	2.59 (1.44)	2.32 (1.34)	4.08 (1.04)
Older	4.07 (1.39)	3.90 (1.50)	2.81 (1.55)	3.31 (1.76)	3.73 (1.42)	2.82 (1.33)	3.39 (1.64)	4.70 (1.46)
Overall credibility								
Younger	4.33 (.84)	4.00 (1.28)	3.13 (1.18)	3.35 (1.50)	3.91 (1.03)	2.65 (1.12)	3.08 (1.35)	4.76 (.78)
Older	4.69 (1.07)	4.59 (1.21)	3.81 (1.57)	3.73 (1.61)	4.32 (1.29)	3.41 (1.40)	4.00 (1.48)	5.09 (.92)
Honesty								
Younger	4.61 (1.04)	4.50 (1.34)	3.43 (1.34)	4.04 (1.66)	4.41 (.96)	3.29 (1.12)	3.68 (1.14)	5.04 (.84)
Older	4.93 (1.00)	4.90 (1.11)	4.23 (1.56)	4.31 (1.29)	4.50 (1.19)	4.09 (1.11)	4.39 (1.34)	5.35 (.71)
Believability								
Younger	4.17 (1.34)	4.44 (1.29)	3.09 (1.35)	3.65 (1.82)	4.27 (1.08)	2.82 (1.17)	3.28 (1.28)	5.04 (.61)
Older	4.62 (1.18)	4.62 (1.18)	3.88 (1.27)	3.69 (1.52)	4.14 (1.21)	3.46 (1.41)	4.13 (1.46)	5.35 (.83)
Accuracy								
Younger	4.28 (.96)	4.17 (1.29)	2.96 (1.15)	3.39 (1.56)	4.21 (1.01)	2.76 (1.21)	3.12 (.88)	5.08 (.70)
Older	4.34 (1.26)	4.38 (1.12)	3.23 (1.18)	3.65 (1.44)	4.27 (1.28)	3.41 (1.56)	3.57 (1.38)	4.83 (1.40)
Consistency								
Younger	4.56 (.78)	4.50 (1.29)	4.35 (1.19)	4.48 (1.65)	4.35 (.95)	3.68 (1.30)	4.20 (1.41)	5.16 (.69)
Older	4.31 (1.42)	4.52 (1.24)	4.19 (1.20)	4.23 (1.27)	4.23 (1.41)	3.82 (1.59)	3.96 (1.55)	5.13 (.97)
Confidence								
Younger	3.61 (1.09)	3.94 (1.39)	2.65 (1.23)	3.22 (1.59)	3.50 (1.08)	2.56 (1.31)	2.56 (1.36)	4.52 (.87)
Older	3.86 (1.25)	4.00 (1.46)	2.85 (1.26)	3.46 (1.68)	3.55 (1.44)	2.82 (1.33)	2.83 (1.47)	4.70 (1.46)
Suggestibility								
Younger	3.67 (1.28)	3.33 (1.50)	3.96 (1.26)	3.44 (1.04)	3.44 (1.24)	3.82 (1.59)	3.44 (1.12)	3.08 (1.08)
Older	2.90 (1.21)	3.10 (1.26)	3.16 (1.12)	3.28 (1.37)	3.23 (1.19)	3.96 (1.25)	3.65 (1.23)	2.96 (1.33)
Likeability								
Younger	4.33 (1.03)	4.61 (.92)	4.09 (1.31)	4.65 (1.37)	4.53 (.83)	3.50 (1.26)	3.60 (1.08)	4.64 (.86)
Older	4.93 (.88)	4.90 (.94)	4.54 (1.14)	4.77 (.99)	4.41 (1.14)	4.60 (1.18)	4.62 (1.27)	5.04 (.93)

Table 3. 2 (trial 1, trial 2) ×2 (younger, older) ×4 (truth-truth, lie-lie, truth-lie, lie-truth) repeated measures ANOVA results on all credibility measures.

	df	*F*	*p*	η_p^2
Competence to testify				
Age group	1192	10.07	.002*	.050
Video condition	3192	11.27	<.001*	.150
Trial	1192	2.71	.101	.014
Age group × video condition	3192	.991	.398	.015
Age group × trial	1192	.167	.683	.001
Video condition × trial	3192	12.60	<.001*	.165
Age × video condition × trial	3192	.216	.885	.003
Overall credibility				
Age group	1191	19.45	<.001*	.092
Video condition	3191	13.13	<.001*	.171
Trial	1191	0.84	.772	.000
Age group × video condition	3191	.068	.977	.001
Age group × trial	1191	.083	.774	.000
Video condition × trial	3191	16.05	<.001*	.201
Age × video condition × trial	3,191	.742	.528	.012
Honesty				
Age group	1192	14.22	<.001*	.069
Video condition	3192	9.16	<.001*	.125
Trial	1192	1.96	1.64	.010
Age group × video condition	3192	.096	.962	.002
Age group × trial	1192	.025	.875	.000
Video condition × trial	3192	11.85	<.001*	.156
Age × video condition × trial	3192	1.48	.221	.023
Believability				
Age group	1192	8.90	.003*	.044
Video condition	3192	13.45	<.001*	.174
Trial	1192	2.24	.136	.012
Age group × video condition	3192	.303	.823	.005
Age group × trial	1192	.664	.416	.003
Video condition × trial	3192	17.92	<.001*	.219
Age × video condition × trial	3192	1.91	.129	.029
Accuracy				
Age group	1192	2.81	.095	.014
Video condition	3192	12.19	<.001*	.160
Trial	1192	3.06	.082	.016
Age group × video condition	3192	.222	.881	.003
Age group × trial	1192	.000	.990	.000
Video condition × trial	3192	23.17	<.001*	.266
Age × video condition × trial	3192	1.23	.299	.019
Consistency				
Age group	1192	.636	.426	.953
Video condition	3192	3.50	.017*	.052
Trial	1192	2.10	.149	.011
Age group × video condition	3192	.105	.957	.002
Age group × trial	1192	.643	.491	.002
Video condition × trial	3192	8.20	.000*	.114
Age × video condition × trial	3192	.133	.940	.002
Confidence				
Age group	1192	2.00	.159	.010
Video condition	3192	9.10	<.001*	.124
Trial	1192	11.59	.001*	.057
Age group × video condition	3192	.022	.996	.000
Age group × trial	1192	.000	.985	.000
Video condition × trial	3192	17.02	<.001*	.210
Age × video condition × trial	3192	.102	.959	.002
Suggestibility				
Age group	1192	3.18	.076	.016
Video condition	3192	1.54	.206	.024
Trial	1192	.197	.657	.001

(*Continued*)

Table 3. Continued.

	df	*F*	*p*	η_p^2
Age group × video condition	3192	.945	.420	.015
Age group × trial	1192	1.79	.182	.009
Video condition × trial	3192	3.83	.011*	.057
Age × video condition × trial	3192	.759	.519	.012
Likeability				
Age group	1192	16.83	<.001*	.968
Video condition	3192	2.37	.072	.036
Trial	1192	4.19	.042*	.021
Age group × video condition	3192	.553	.647	.009
Age group × trial	1192	.002	.960	.000
Video condition × trial	3192	6.11	.001*	.087
Age × videocondition × trial	3192	4.38	.005*	.064

Note: *$p < .05$.

differed across the two trials for participants in the matched veracity conditions (i.e. truth-truth and lie-lie; $ps > .05$). Figure 1 shows the pattern of results for the *overall credibility* measure (this same pattern was found across *competence to testify, honesty,* and *believability* ratings).

Lastly, a significant three-way interaction between age, video condition, and trial was found for *likeability* ratings. Follow-up repeated measures ANOVAs were conducted on *likeability* ratings to examine the effect of trial separately for each video condition and age group. *Likeability* ratings only differed from trial 1 to trial 2 for younger adults in the truth-lie and lie-truth conditions ($ps < .05$). Younger adults rated the truth-tellers as more likeable compared to the lie-tellers. There was no significant difference in younger adults' *likeability* ratings across trial 1 and trial 2 in the truth-truth and lie-lie conditions ($p > .05$). *Likeability* ratings from older adults did not significantly differ across trials or video conditions ($ps > .05$).

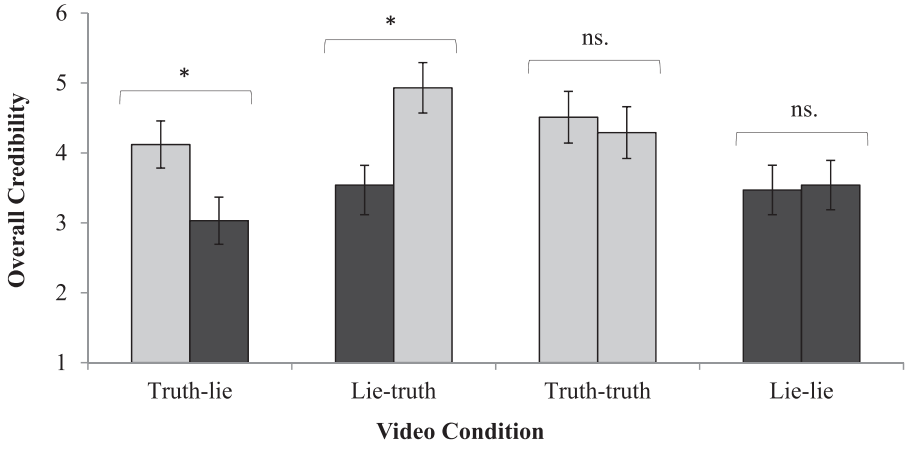

Figure 1. Overall credibility ratings provided at trial 1 and trial 2 across video conditions.

Note: The significant trial by video condition interaction is depicted. Results are presented collapsed across age group as there was no significant three-way interaction with age. Ratings of competence to testify, honesty, and believability followed the same pattern of results. Errors bars represent 95% confidence intervals. Truth-telling videos are represented by light gray bars and lie-telling videos are represented by dark gray bars. $N = 200$ (100 young adults; 100 older adults). *$p < .05$.

Given that the videos shown at trial 2 were differentially preceded by either a truth or lie video (based on video condition), a set of analyses were conducted to ensure that ratings at trial 2 were not influenced by video veracity watched at trial 1. A series of 2 (Age group: younger vs. older adults) × 4 (Video condition: truth-truth, lie-lie, truth-lie, lie-truth) between subjects ANOVAs were conducted on each trial 2 outcome measure of credibility. When examining post-hoc tests, all means were adjusted using the Bonferonni correction. Results indicated that trial 2 ratings were not significantly impacted by video veracity watched at trial 1 for all scales except *likeability*. Specifically, participants who watched a truth-teller in their first video (truth-lie condition) provided significantly lower ratings of likeability when rating the lie-teller in their second video compared to those who had previously seen a lie-teller in their first video (lie-lie condition; $p < .05$). There were no other significant main effects or interactions ($ps > .05$).

The relation between credibility evaluations and lie-detection accuracy

A stepwise linear regression was performed to examine if the difference in one's credibility evaluations when rating truth and lie-tellers could predict lie-detection accuracy. Only participants in the truth-lie and the lie-truth credibility conditions were included in this analysis as participants in the other two conditions (truth-truth and lie-lie) evaluated a single statement veracity type. A credibility difference score was calculated for each participant by summing credibility ratings (*overall credibility, competence to testify, honesty, believability, accuracy, consistency, confidence, suggestibility*, and *likeability)* for truth-tellers and for lie-tellers separately and then subtracting the lie-teller credibility scores from the truth-teller credibility scores. Suggestibility was reverse coded such that higher scores indicated the child was less suggestible. Scores closer to zero indicated less of a credibility difference between truth and lie-tellers and larger scores indicated a greater credibility difference between truth and lie-tellers. Positive scores indicated that participants rated truth-tellers as more credible and negative scores indicated that participants rated lie-tellers as more credible. For the stepwise linear regression, age group (younger vs. older adults), credibility difference score, and the age group by credibility difference score interaction were entered together as predictors with overall (%) detection accuracy as the predicted variable. Together, both age group and the credibility difference score explained 13% of the variability in lie-detection accuracy, $F(2,104) = 8.69$, $p < .001$, $R = .382$. Both age group, $t = 3.17$, $p = .002$, $\beta = -.292$, and the credibility difference score, $t = 2.32$, $p = .022$, $\beta = .214$ were unique predictors of detection accuracy, such that older adults had lower accuracy than younger adults and participants with a greater credibility difference score (i.e. a greater difference between their credibility ratings of truth and lie-tellers) were more accurate at detecting lies. The interaction variable was not a significant predictor ($p = .383$).

General lifespan credibility evaluations

To examine if credibility evaluations differed across younger and older adults when rating a variety of witness age groups, independent samples t-tests (corrected for the violation of homogeneity of variance) were conducted comparing younger and older adults' credibility ratings of each witness age group. Significant differences emerged in ratings of

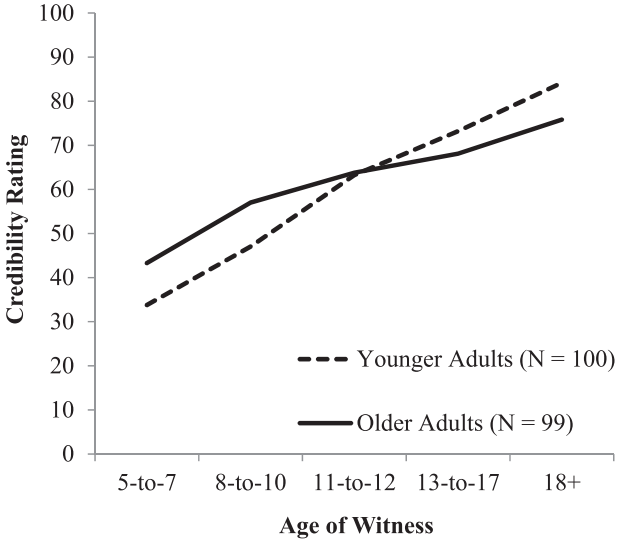

Figure 2. Younger and older adult credibility evaluations of various witness age groups. Significant differences emerged between younger and older adult ratings of 5-to 7-year-olds, 8-to 10-year-olds, 13-to 17-year-olds, and those over the age of 18 (*p*s < .016).

those 18 and above, $t(174.73) = 3.62$, $p < .001$, $d = 0.52$, those between 13 and 17-years of age, $t(167.47) = 2.47$, $p = .014$, $d = 0.36$, those between 8 and 10-years of age, $t(190.04) = 3.57$, $p = .045$, $d = 0.14$, and those between 5 and 7-years of age, $t(197) = 2.74$, $p = .007$, $d = 0.39$. No significant difference emerged between younger and older adults when rating 11- to 12-year olds ($p > .05$). Older adults provided higher ratings for the credibility of the younger witness age groups and lower credibility for the older witness age groups compared to the younger adults' ratings (See Figure 2).

Discussion

The current study examined younger (18–30 years of age) and older adults' (over 65 years of age) lie-detection and credibility judgments after viewing children's truthful and dishonest coached reports in a free-recall interview. Significant differences were found between younger and older adults' lie-detection and credibility judgments.

Lie-detection

Although both younger and older adults' overall detection accuracy was significantly above chance, older adults reported significantly lower detection accuracy compared to younger adults, as reflected in their overall accuracy and discrimination (*d'*) scores. Results indicated that older adults experienced particular difficulty in correctly identifying lie-tellers (25% accuracy rate). This aligns with research in the adult lie-detection literature demonstrating lower accuracy from older adults (compared to younger adults) when detecting younger adults' and older adults' lies (Ekman & O'Sullivan, 1991; Ruffman et al., 2012; Stanley & Blanchard-Fields, 2008; Sweeney & Ceci, 2014). Stanley and Blachard-Fields found that this lower accuracy rate was, in part, a result of the age-related

decline in emotion recognition abilities. The findings from the present study contribute to this limited line of research to suggest that older adults show lower accuracy and discrimination scores (compared to younger adults) when evaluating children's lies. Given this consistent pattern across the detection of children's and adults' lies, future studies should attempt to address additional mechanisms that may help to explain older adults' increased difficulty with detecting lies.

When examining participants' biases, both age groups held a truth bias for children, confirming previous findings from younger adults' veracity judgments (Chahal & Cassidy, 1994; Evans et al., 2016; Strömwall & Granhag, 2005; Talwar et al., 2015; Westcott et al., 1991); however, older adults held a significantly stronger truth bias. These findings are consistent with the positivity bias that occurs later in life in which older adults tend to favor more positive stimuli and perspectives (e.g. Luong et al., 2011; Mather & Carstensen, 2005; Reed & Carstensen, 2012). Socioemotional selectivity theory posits that this motivation to seek out positive emotions is a result of older adults' more limited time perspective as they are nearing the later stages of the lifespan (Carstensen, 1993; Carstensen, Isaacowitz, & Charles, 1999). Thus, this shift in one's time perspective may help to explain why older adults held a strong truth bias. Future studies that directly measure one's time perspective and lie-detection judgments are needed to help support this potential explanation.

Notably, the context in which the videos were placed in the present study may have influenced these findings. For example, participants were told that each child may or may not be telling the truth, but they were not informed about additional details surrounding the interview (e.g. that they may be lying to conceal a transgression). Given that jurors and legal professionals often have access to additional information surrounding a testimony, the pattern of results may vary based on contextual information and consistency across children's reports and other case evidence. As this is the first study to examine older adults' lie-detection of children's reports, continued research is needed to examine detection judgments in various contexts. Moreover, participants in the present study evaluated eight videos; therefore, future studies with larger samples of stimuli will help to confirm our conclusions.

We also found that both groups were fairly confident in their detection judgments, but older adults were significantly more confident. This aligns with previous research that has found older adults to be more confident and secure in their decision making (Higgins et al., 2007; Mossiere & Dalby, 2008). These results suggest the importance of potential interventions to enhance education on the typical limitations observed across adulthood when attempting to detect lies. This can help to reduce the risk of individuals engaging in highly confident, but inaccurate decision making. Interestingly, the only significant correlation between confidence and lie-detection judgments was for younger adults' biases, where higher confidence was related to a greater truth bias. Future studies examining juror confidence and age in the deliberation room are warranted to assess how these variables may play a role in determining a trial outcome.

Perceptions of children's credibility

Older adults rated children significantly higher in their *competence to testify*, *overall credibility*, *honesty, believability*, and *likeability* compared to the younger adults. This pattern of

results further supports the positivity bias found in later adulthood as older adults attributed more positive traits to children. Although older adults provided higher ratings of various measures of children's credibility, they did so when rating both lie-tellers and truth-tellers. This means that when children were telling a coached report, older adults were more likely to report that they were honest and credible compared to younger adults. Thus, it appears that older adult jurors may more readily believe a child's coached testimony. If a child is reporting a coached cover story to conceal an event or abuse, and this is believed by older adult jurors, this may reduce the likelihood of a conviction. However, the fact that older adults rated the truth-telling children as more credible compared to the younger adults shows promising insight into older adult jurors' willingness to trust children's truthful testimony. This pattern of results suggests that attorneys' preferences for a jury comprised of older adults will likely depend on the nature of the case (e.g. if the child may be telling a report to conceal abuse or truthfully reporting an event) and if their goal is to convict or acquit the defendant. That is, if a child provides false testimony to conceal abuse, the defense may favor an older jury pool (more likely to trust the child's coached testimony) and the prosecution may favor a younger jury pool (less likely to trust the child's coached testimony). It is also important to note that our age effects had small to medium effect sizes, suggesting that future research examining additional factors contributing to credibility assessments are warranted.

Although age differences were found in ratings of several credibility measures, no significant age differences were found in ratings of children's *accuracy, consistency, confidence*, and *suggestibility*. Previous studies have proposed a two-factor model of children's credibility (Ross et al., 2003) in which ratings are separated into two components: honesty and cognitive competence. Adults have been found to rate child witnesses as more honest but less cognitively competent compared to adult witnesses (Bala et al., 2005; Connolly et al., 2008; Masip et al., 2004; Ross et al., 2003). In line with this idea, the credibility measures that produced no significant age differences fit more within the cognitive competence factor (e.g. accuracy, consistency) whereas the measures that resulted in significant age differences are more related to children's honesty (e.g. honesty and believability). Thus, it may be that older adults are particularly more likely to believe that children provide honest reports, but that younger and older adults hold more similar beliefs in how accurate and consistent children's reports are. However, older adults did provide higher ratings for children's *overall credibility* and *competence to testify* in court. As such, participants' responses to these more general ratings of credibility and competency may have been more grounded in perceptions of children's honesty.

One unique aspect of the present study is that participants provided credibility assessments over two trials (after video 1 and after video 2). Ratings only significantly differed from trial 1 to trial 2 when the veracity differed across trials (i.e. in the truth-lie and lie-truth conditions) with more favorable ratings of credibility given to the truth-tellers compared to the lie-tellers. This effect of trial was consistent for both age groups (except for *likeability*), suggesting that both younger and older adults were differentiating between truthful and dishonest reports. In addition, trial 2 ratings were not significantly impacted by video veracity at trial 1, suggesting that video assessments were made independently during each trial. The only exception to this pattern of results is that younger adults provided less positive *likeability* ratings of a lie-teller at trial 2 when preceded by a truth-teller

at trial 1 (compared to those who watched lie-tellers both times). This is likely because the lie-teller in the second video could be compared to the truth-teller from the first video, which may have exacerbated the differences between these children, resulting in the lie-teller appearing less likeable. The more subjective and personal nature of likeability ratings may explain these inconsistent and more variable responses.

Taken together, the present study demonstrates how younger and older adults differ in their perceptions of child witnesses and ability to detect dishonest testimony. Furthermore, this study is the first to examine if and how these two judgments are related to each other. We found that the extent to which one's credibility ratings differed when evaluating a truth- or lie-teller significantly predicted their detection accuracy. Specifically, participants with greater differences in their credibility evaluations of truth- and lie-tellers were more accurate when detecting lies. This has important implications for the lie-detection literature, as it is largely unknown how we can improve detection accuracy. Perhaps enhancing knowledge on components of credibility may help to facilitate more accurate detection judgments. In sum, the age-related patterns across lie-detection and credibility judgments indicate that older adults may be particularly biased towards trusting children (through their stronger truth biases and higher credibility evaluations).

The final goal of the current study was to investigate if the present results may differ depending on the age of the witness being evaluated. Participants rated the credibility of a variety of witness age groups (5- to 7-year-olds, 8- to 10-year-olds, 11- to 12-year-olds, 13- to 17-year-olds, and adults over the age of 18). Compared to the younger adult sample, older adults provided higher credibility ratings for younger children (5- to 7-year-olds and 8- to 10-year-olds); however, both groups were comparable in rating 11- to 12-year-olds. Interestingly, the opposite pattern emerged for rating the adolescent and young adult age groups (13- to 17-year-olds and adults over the age of 18) where older adults provided lower credibility ratings compared to the younger adult sample. This developmental pattern of witness credibility indicates that older adults provided higher credibility ratings compared to younger adults for a larger age range (5–10 years old) than was presented in the video stimuli. Additionally, older adults provided less positive credibility evaluations for adolescents and adults compared to younger adults. This suggests that the present pattern of results found from the video stimuli may hold with situations involving younger children; however, this pattern may shift when examining older adolescents and adults. Given these findings, a larger developmental study of credibility judgments across the lifespan is needed to gain a clearer picture of how witness and juror age interact.

Conclusion

The present study is the first to demonstrate that older adults provide poorer detection accuracy, greater truth biases, and more favorable credibility assessments when evaluating children's honest and dishonest reports compared to younger adults. These results inform the lie-detection and credibility fields and can be informative for legal professionals to better understand how juror age can play a role in perceptions of child witnesses. These results lay the foundation for a highly needed field of research to further examine how potential older adult jurors perceive child-witnesses and contribute to the justice system.

Disclosure statement

No potential conflict of interest was reported by the authors.

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References

Anwar, S., Bayer, P., & Hjalmarsson, R. (2014). The role of age in jury selection and trial outcomes. *The Journal of Law and Economics*, *57*, 1001–1030. doi:10.3386/w17887

Bala, N., Evans, A. D., & Bala, E. (2010). Hearing the voices of children in Canada's criminal justice system: Recognising capacity and facilitating testimony. *Child and Family Law Quarterly*, *22*, 21–45.

Bala, N., Ramakrishnan, K., Lindsay, R., & Lee, K. (2005). Judicial assessment of the credibility of child witnesses. *Alberta Law Review*, *42*, 995–1017.

Baldus, D. C., Woodworth, G., Zuckerman, D., Weiner, N. A., & Broffitt, B. (2001). The use of peremptory challenges in capital murder trials: A legal and empirical analysis. *Journal of Constitutional Law*, *3*, 10–43.

Blowers, A. N. (2015). Elders and the criminal justice system. *Journal of Crime and Justice*, *38*, 1–8. doi:10.1080/0735648X.2014.931509

Boatright, R. G. (2001). Generational and age-based differences in attitudes towards jury service. *Behavioral Sciences and the Law*, *19*, 285–304. doi:10.1002/bsl.440

Bond, G. D., Thompson, L. A., & Malloy, D. M. (2005). Vulnerability of older adults to deception in prison and nonprison contexts. *Psychology and Aging*, *20*, 60–70. doi:10.1037/0882-7974.20.1.60

Brank, E. M. (2007). Elder research: Filling an important gap in psychology and law. *Behavioral Sciences and the Law*, *25*, 701–716. doi:10.1002/bsl.780

Brank, E. M., Wylie, L. E., & Wylie, Lindsey E. (2015). Elders and the justice system. In B. L. Cutler & P. A. Zapf (Eds.), *APA handbooks in psychology. APA handbook of forensic psychology, Vol. 2. Criminal investigation, adjudication, and sentencing outcomes* (pp. 59–77). Washington, DC: American Psychological Association. doi:10.1037/14462-000

Carstensen, L. L. (1993). Motivation for social contact across the lifespan: A theory of socioemotional selectivity. In J. E. Jacobs (Ed.), *Nebraska symposium on motivation: 1992, developmental perspectives on motivation* (Vol. 40, pp. 209–254). Lincoln: University of Nebraska Press.

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, *54*, 165–181. doi:10.1037/0003-066X.54.3.165

Chahal, K., & Cassidy, T. (1994). Deception and its detection in children: A study of adult accuracy. *Psychology, Crime & Law*, *1*, 237–245. doi:10.1080/10683169508411959

Connolly, D. A., Price, H. L., Lavoie, J. A. A., & Gordon, H. M. (2008). Perceptions and predictors of children's credibility of a unique event and an instance of a repeated event. *Law and Human Behavior*, *32*, 92–112. doi:10.1007/s10979-006-9083-3

Crossman, A. M., & Lewis, M. (2006). Adults' ability to detect children's lying. *Behavioral Sciences and the Law*, *24*, 703–715. doi:10.1002/bsl.731

Edelstein, R. S., Luten, T. L., Ekman, P., & Goodman, G. S. (2006). Detecting lies in children and adults. *Law and Human Behavior*, *30*(1), 1–10. doi:10.1007/s10979-006-9031-2

Ekman, P., & O'Sullivan, M. (1991). Who can catch a liar? *American Psychologist*, *46*, 913–920.

Ekman, P., O'Sullivan, M., Friesen, W. V., & Scherer, K. R. (1991). Face, voice, and body in detecting deceit. *Journal of Nonverbal Behavior*, *15*, 125–135.

Entzel, P., Dunlop, B. D., & & Rothman, M. B. (2000). Elders and jury service: A case of age discrimination. In M. Rothman, B. Dunlop, & P. Entzel (Eds.), *Elders, crime, and the criminal justice system: Myth, perceptions, and reality in the 21st Century* (pp. 43–83). New York: Springer.

Evans, A. D., Bender, J., & Lee, K. (2016). Can parents detect 8- to 16-year-olds' lies? Parental biases, confidence, and accuracy. *Journal of Experimental Child Psychology*, *147*, 152–158. doi:10.1016/j.jecp.2016.02.011

Evans, A. D., & Lyon, T. D. (2013). *The effects of the putative confession on 9-12-year-old maltreated and non-maltreated children's transgression disclosures*. Presented in L. Wandry Chair. Eliciting Honesty from Children. Biennial meeting of the Society for Research in Child Development Conference. Seattle, Washington.

Fitzgerald, J. M. (2000). Younger and older jurors: The influence of environmental supports on memory performance and decision making in complex trials. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *55*, P323–P331.

Flynn, E. E. (2000). Elders as perpetrators. In M. B. Rothman, B. D. Dunlop, & P. Entzel (Eds.), *Elders, crime, and the criminal justice system: Myth, perceptions, and reality in the 21st Century* (pp. 43–83). New York: Springer.

Folstein, M. F., Folstein, S. E., & McHugh, P. R. (1975). Mini-mental state: A practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research*, *12*, 189–198. doi:10.1097/WNN.0b013e31828b7d26

Gongola, J., Scurich, N., & Quas, J. A. (2017). Detecting deception in children: A meta-analysis. *Law and Human Behavior*, *41*, 44–54. doi:10.1037/lhb0000211

Goodman, G. S., Golding, J. M., & Haith, M. M. (1984). Jurors' reactions to child witnesses. *Journal of Social Issues*, *40*, 139–156.

Goodman, G. S., Golding, J. M., Helgeson, V. S., Haith, M. M., & Michelli, J. (1987). When a child takes the stand: Jurors' perceptions of children's eyewitness testimony. *Law and Human Behavior*, *11*, 27–40.

Goodman, G. S., & Michelli, J. (1981). Would you believe a child witness? *Psychology Today*, *15*, 82–95.

Higgins, P. L., Heath, W. P., & Grannemann, B. D. (2007). How type of excuse defence, mock juror age, and defendant age affect mock jurors' decisions. *The Journal of Social Psychology*, *147*, 371–392. doi:10.3200/SOCP.147.4.371-392

Johnson, M. K., & Grisso, T. J. (1986, August). *On the credibility of child eyewitnesses: The jury is still out*. Symposium paper presented at the meeting of the American Psychological Association, Washington, DC.

Leippe, M. R., & Romanczyk, A. (1987). Children on the witness stand: A communication/persuasion analysis of jurors' reactions to child witnesses. In S. J. Ceci, D. F. Ross, & M. P. Toglia (Eds.), *Children's eyewitness memory* (pp. 155–177). New York, NY: Springer-Verlag.

Leippe, M. R., & Romanczyk, A. (1989). Reactions to child (versus adult) eyewitnesses: The influence of jurors' preconceptions and witness behavior. *Law and Human Behavior*, *13*, 103–132.

Luong, G., Charles, S. T., & Fingerman, K. L. (2011). Better with age: Social relationships across adulthood. *Journal of Social and Personal Relationships*, *28*, 9–23. doi:10.1177/0265407510391362

Luus, C. A. E., Wells, G. L., & Turtle, J. W. (1995). Child eyewitnesses: Seeing is believing. *Journal of Applied Psychology*, *80*, 317–326. doi:10.1037/0021-9010.80.2.317

Masip, J., Garrido, E., & Herrero, C. (2004). Facial appearance and impressions of 'credibility': The effects of facial babyishness and age on person perception. *International Journal of Psychology*, *39*, 276–289. doi:10.1080/00207590444000014

Mather, M., & Carstensen, L. L. (2005). Aging and motivated cognition: The positivity effect in attention and memory. *Trends in Cognitive Sciences*, *9*, 496–502. doi:10.1016/j.tics.2005.08.005

Mossiere, A., & Dalby, J. T. (2008). The influence of gender and age in mock juror decision-making. *Europe's Journal of Psychology*, *4*(4). doi:10.5964/ejop.v4i4.440

Nysse-Carris, K. L., Bottoms, B. L., & Salerno, J. M. (2011). Experts' and novices' abilities to detect children's high-stakes lies of omission. *Psychology, Public Policy, and Law*, *17*, 76–98. doi:10.1037/a0022136

Reed, A. E., & Carstensen, L. L. (2012). The theory behind the age-related positivity effect. *Frontiers in Psychology*, *3*, 1–9. doi:10.3389/fpsyg.2012.00339

Ross, D. F., Dunning, D., Toglia, M. P., & Ceci, S. J. (1990). The child in the eyes of the jury: Assessing mock jurors' 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. doi:10.1111/j.1559-1816.2003.tb01903.x

Ross, D. F., Miller, B. S., & Moran, P. B. (1986). The child in the eyes of the jury: Assessing mock jurors' reactions to child witnesses. In S. J. Ceci, M. P. Toglia, & D. F. Ross (Eds.), *Children's eyewitness memory* (pp. 142–154). New York: Springer-Verlag.

Ruffman, T., Murray, J., Halberstadt, J., & Vater, T. (2012). Age-related differences in deception. *Psychology and Aging*, *27*, 543–549. doi:10.1037/a0023380

Saykaly, C., Crossman, A., & Talwar, V. (2017). High cognitive load during cross-examination: Does it improve detection of children's truths and lies? *Psychiatry, Psychology and Law*, *24*, 278–291. doi:10.1080/13218719.2016.1197816

Stanislaw, H., & Todorov, N. (1999). Calculation of signal detection theory measures. *Behavior Research Methods, Instruments, & Computers*, *31*, 137–141.

Stanley, J. T., & Blanchard-Fields, F. (2008). Challenges older adults face in detecting deceit: The role of emotion recognition. *Psychology and Aging*, *23*, 24–32. doi:10.1037/0882-7974.23.1.24

Statistics Canada. (2011). *The Canadian population in 2011: Age and sex*. Statistics Canada Catologue no.98-311-X. Ottawa. Version updated December 2015.

Statistics Canada. (2016). *Population trends by age and sex, 2016 census of population*. Statistics Canada Catologue no.11-627-M. Ottawa. Version updated June 7, 2017.

Strömwall, L. A., & Granhag, P. A. (2005). Children's repeated lies and truths: Effects on adults' judgments and reality monitoring scoring. *Psychiatry, Psychology and Law*, *12*, 345–356. doi:10.1375/pplt.12.2.345

Sweeney, C. D., & Ceci, S. J. (2014). Deception detection, transmission, and modality in age and sex. *Frontiers in Psychology*, *5*, 1–10. doi:10.3389/fpsyg.2014.00590

Talwar, V., & Crossman, A. M. (2012). Children's lies and their detection: Implications for child witness testimony. *Developmental Review*, *32*, 337–359. doi:10.1016/j.dr.2012.06.004

Talwar, V., Lee, K., Bala, N., & Lindsay, R. C. L. (2006). Adults' judgments of children's coached reports. *Law and Human Behavior*, *30*, 561–570. doi:10.1007/s10979-006-90388

Talwar, V., Renaud, S. J., & Conway, L. (2015). Detecting children's lies: Are parents accurate judgments of their own children's lies? *Journal of Moral Education*, *44*, 81–96. doi:10.1080/03057240.2014.1002459

U. S. Department of Commerce Economics and Statistics Administration (USDCESA). (2004). *We the people: Aging in the United States census 2000 special reports*.

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. 23–46). New York: Springer-Verlag.

Westcott, H. L., Davies, G. M., & Clifford, B. R. (1991). Adults' perceptions of children's videotaped truthful and deceptive statements. *Children and Society*, *5*, 123–135. doi:10.1111/j.1099-0860.1991.tb00378.x

Wyman, J., Foster, I., Lavoie, J., Tong, D., & Talwar, V. (2018). Detecting children's false allegations and recantations of a crime. *Psychology, Crime & Law*, *24*, 652–671. doi:10.1080/1068316X.2017.1402018