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# Do laypeople recognize youth as a risk factor for false confession? A test of the 'common sense' hypothesis

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In a survey of confession experts, 94% agreed that youth is a risk factor for false confession, but only 37% felt that jurors understand this. To date, no study has tested the latter by comparing laypeople's perceptions of juvenile and adult suspects. To address this gap, Experiment 1 participants read a lengthy (i.e. interrogation and confession) or abridged (i.e. confession-only) transcript of an ostensibly juvenile or adult suspect's interrogation. Transcript length affected perceived pressure but not guilt judgments. Suspect age had little effect, with 75% of participants misjudging the juvenile as guilty. Experiment 2 then tested how expert testimony affects judgments of juvenile suspects. Participants read a lengthy or abridged interrogation transcript, with or without testimony from a juvenile confession expert. Expert testimony somewhat impacted guilt judgments but did not influence perceptions of the interrogation. Implications for interrogation practices, trial procedure and future research are discussed.

**Keywords:** expert testimony; false confessions; interrogations; juvenile justice.

Youth is a known risk factor for false confession (for reviews, see Cleary, 2017; Feld, 2013; Owen-Kostelnik, Reppucci, & Meyer, 2006). In their analysis of 125 proven false confessions, Drizin and Leo (2004) noted that a disproportionately high percentage (33%) came from juveniles, most of whom were age 15 years or younger. Similarly, Gross and Schaffer (2012) found false confessions in 42% of juvenile exonerations (compared to 15% of all exonerations). In studies that have gauged juveniles' decision-making during a hypothetical interrogation, many self-reported that they would falsely confess (Goldstein, Condie, Kalbeitzer, Osman, & Geier, 2003; Grisso et al., 2003), and they did so more often than adults (Grisso et al., 2003; Haney-Caron, Goldstein, & Mesiarik, 2018). Moreover, in studies where researchers interviewed juveniles who had been interrogated as a criminal suspect, between 6% (Viljoen, Klaver, & Roesch, 2005) and 17% (Malloy, Shulman, & Cauffman, 2014) self-reported having made a false confession (see also Gudjonsson, Sigurdsson, Asgeirsdottir, & Sigfusdottir, 2006; Gudjonsson, Sigurdsson, & Sigfusdottir, 2009). In short, a wealth of archival and self-report evidence suggests that juveniles are more likely than adults to give a false confession – and indeed, in a recent survey of 131 confession experts, 94% agreed that this phenomenon is sufficiently reliable to present in court (Kassin, Redlich, Alceste, & Luke, 2018).

### *Why do juveniles falsely confess?*

Juveniles' false confessions are sometimes voluntary (i.e. not coerced; Kassin & Wrightsman,

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1985). For example, Malloy et al. (2014) interviewed 193 incarcerated juveniles and found that most who claimed to have given a false confession did so either to protect someone else (52%) or because they thought it would result in a lesser punishment (15%). Similarly, an experiment by Pimentel, Arndorfer, and Malloy (2015) found that adolescents who witnessed a confederate cheat on a task were more likely to later take the blame for the confederate (i.e. falsely confess) than college students (59% vs. 39%, respectively), and 69% of adolescents who falsely confessed explicitly cited their desire to protect the confederate as their reason for having done so.

Alternatively, juveniles may falsely confess in response to coercive interrogation practices. In Malloy et al. (2014), 33% of juveniles who reportedly made a false confession said that they did so under duress, and most reported having been threatened, befriended and/or deceived by their interrogators (see also Redlich, Silverman, Chen, & Steiner, 2004). While these tactics can produce false confessions in adults (see Kassin et al., 2010), juveniles may be even more vulnerable by virtue of their cognitive and psychosocial immaturity. For example, temporal discounting (i.e. the tendency for proximal consequences to influence decisions more than distal ones) has been linked to confession decisions in adults (Madon, Guyll, Scherr, Greathouse, & Wells, 2012), and adolescents show this tendency more strongly than adults (e.g. Whelan & McHugh, 2009). Youth are also strongly driven by rewards; in one study, young children who received positive social reinforcement from their interviewer were three times more likely to falsely confess to a theft (Billings et al., 2007). Finally, Redlich and Goodman (2003) found that adolescents were more likely than college students to falsely confess to crashing a computer, and this difference became even larger if they were presented with false evidence of their guilt. (For more detailed reviews of developmental risk factors for false confession, see Cleary, 2017; Grisso & Schwartz, 2000; Steinberg & Scott, 2003.)

### *Are there safeguards for juvenile suspects?*

Despite juveniles' heightened vulnerability, police appear to interrogate them no differently than adults. Survey data (Cleary & Warner, 2016; Kostelnik & Reppucci, 2009; Meyer & Reppucci, 2007) consistently suggest that police use coercive techniques – such as asking the same questions repeatedly, minimizing the seriousness of the offense and presenting false evidence – comparably often with juvenile and adult suspects. Corroborating these self-report data, Feld (2013) analyzed interrogation recordings from 307 juvenile felony investigations and found that police often used both maximization (e.g. confronting suspects with incriminating evidence, accusing suspects of lying) and minimization (e.g. downplaying the suspect's culpability, empathizing with the suspect) tactics with juvenile suspects. Notably, these data are also consistent with self-proclaimed juvenile false confessors' self-reports of their own interrogation experiences (Malloy et al., 2014; Redlich, Quas, et al., 2004).

Compounding this problem, research suggests that people are poor at distinguishing between true and false confessions. Kassin, Meissner, and Norwick (2005) found that students and police were generally unable to distinguish between true and false confessions given by adult prison inmates. Honts, Kassin, and Craig (2014) then replicated this finding using incarcerated juveniles; participants correctly judged the veracity of juveniles' confessions only 53% of the time (when 50% would be expected by chance). In other words, when a juvenile falsely confesses, fact-finders may fail to recognize the confession as false and disregard it. Instead, fact-finders tend to trust a confession even if they recognize it as coerced (Kassin & Wrightsman, 1980; Wallace & Kassin, 2012), if they are instructed to disregard it (Kassin & Wrightsman, 1981), if they believe it did not influence them

(Kassin & Sukel, 1997) and, indeed, even if the confession is false (Appleby, Hasel, & Kassin, 2013).

Proponents of recording interrogations (e.g. Kassin et al., 2010; The Justice Project, 2007) have argued that jurors who are more informed about the circumstances under which a confession was given will be more attuned to its voluntariness, which will yield more accurate determinations of guilt. To test this hypothesis, Kassin, Kukucka, Lawson, and DeCarlo (2017) had participants read either the unabridged transcript of a mock interrogation of an innocent suspect or a police report of that same interrogation. Compared to those who read only the police report, participants who read a full transcript rated the interrogator as having exerted more pressure on the suspect and were less likely to misjudge the suspect as guilty (by a margin of 31% vs. 9%). These findings thus support the idea that having access to a more complete account of an interrogation can improve fact-finding accuracy.

### *Do jurors discount juvenile confessions?*

Do jurors recognize youth as a risk factor for false confession? Self-report data on this question are somewhat mixed. On one hand, Chojnacki, Cicchini, and White (2008) found that 43% of jury-eligible individuals believed that juveniles were more likely to falsely confess than adults (and only 5% disagreed; for similar findings, see Henkel, Coffman, & Dailey, 2008). On the other hand, Mindthoff et al. (2018) found that jury-eligible individuals viewed age as a relatively weak contributor to false confession risk, and 32% of respondents believed that youth ceased to be a risk factor at age 17 or earlier. Interestingly, confession experts appear similarly divided, as 37% believed that jurors understand the link between youth and false confession as a matter of 'common sense', but the other 63% did not (Kassin et al., 2018).

Few experimental studies have examined perceptions of juvenile suspects. Redlich, Quas, and Ghetti (2008) had students read an interrogation transcript in which an 11- or 14-year-old suspect confessed (falsely) to murder. Overall, 76% of participants judged the suspect as guilty, and age did not affect perceptions of voluntariness, credibility or guilt. Using a similar procedure, Redlich, Ghetti, and Quas (2008) manipulated the child's status as a victim or suspect, his age, and whether he denied involvement or admitted involvement and recanted. Irrespective of the child's age, students rated victims who denied involvement as more credible than suspects who denied involvement. Moreover, children who admitted involvement and then recanted were rated as more likely to have been involved in the crime (as either a victim or perpetrator). Similarly, Molinaro and Malloy (2016) found that over 80% of students judged a juvenile confessor as guilty, regardless of his age (10 or 16 years old) or the consistency of his statement over time. Taken together, these findings suggest that laypeople tend to believe juvenile confessions regardless of age, veracity, recantation or consistency.

Other studies have examined whether jurors believe juvenile confessions obtained via coercion. Najdowski, Bottoms, and Vargas (2009) found that students discounted a juvenile's coerced confession – obtained after a seven-hour interrogation during which the suspect was handcuffed and lied to about inculpatory evidence – only if the juvenile had an intellectual disability, such that they perceived nondisabled juveniles who confessed under coercion as guiltier than nondisabled juveniles who did not confess. In a follow-up study, Najdowski and Bottoms (2012) found that judgments of a juvenile's confession depended more on participants' perceptions of coercion than on the objective circumstances of the confession. That is to say, participants discounted juvenile confessions that they perceived as coerced, regardless of experimental condition. In noting the contrast between this finding and those of comparable studies involving adult suspects (e.g. Kassin & Wrightsman, 1980; Wallace & Kassin, 2012), the authors

speculated that jurors may in fact understand that juveniles are more prone to false confession than adults.

### *The current studies*

To date, no study has directly compared laypeople's perceptions of juvenile and adult suspects. In her recent review of the juvenile interrogation literature, Cleary (2017) explained that 'more work is needed to understand how jurors interpret interrogation and confession evidence and account (or do not account) for adolescent defendants' developmental immaturity' (p. 126). As noted above, confession experts are nearly unanimous in their belief that youth is a risk factor for false confession, but they disagree as to whether jurors grasp this as a matter of common sense (Kassin et al., 2018) – perhaps because some experts are understandably hesitant to extrapolate from self-reported beliefs (Chojnacki et al., 2008; Henkel et al., 2008; Mindthoff et al., 2018) to actual decision-making.

To address this gap, Experiment 1 tested whether perceptions of the same interrogation and confession differ as a function of the suspect's purported age (i.e. juvenile vs. adult). Informed by the aforementioned self-report data on beliefs about juvenile suspects, we expect that suspect age will impact laypeople's perceptions of coercion and guilt. As a secondary aim, we also tested whether this effect is moderated by the completeness of the interrogation account, as suggested by Kassin et al. (2017). Participants thus read either a lengthy or abridged (i.e. confession-only) transcript of a real-world interrogation in which the suspect – who is ostensibly either a juvenile or an adult – ultimately confesses to murder. Importantly, this transcript was taken from a proven juvenile false confession case (see Drizin & Leo, 2004), and thus ground truth is known. Then, participants provided judgments of the interrogators and suspect, including a judgment of the suspect's guilt.

Our hypotheses are as follows:

**H1:** Participants will rate the interrogation as more coercive – and will less often misjudge the suspect as guilty – if the suspect is described as a juvenile rather than an adult.

**H2:** Participants will rate the interrogation as more coercive – and will less often misjudge the suspect as guilty – if they read a lengthy transcript of the interrogation rather than an abridged (i.e. confession-only) transcript.

**H3:** Suspect age will interact with transcript length, such that the combination of a juvenile suspect and a lengthy transcript will produce the highest ratings of coerciveness and the lowest conviction rate. Conversely, the combination of an adult suspect and an abridged transcript will produce the lowest ratings of coerciveness and the highest conviction rate.

## Experiment 1

### *Method*

#### *Participants and design*

The study employed a 2 (suspect age: juvenile vs. adult) × 2 (transcript: lengthy vs. abridged) between-subjects design. An a priori power analysis using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) indicated a required sample of $N = 128$ to detect a medium-sized effect ($f = 0.25$) at standard levels of significance ($\alpha = .05$) and power ($1 - \beta = .80$). To account for potential data loss, we recruited $N = 145$ undergraduates, who completed the study in small groups for course credit. Because the expected duration of the study (which determines how much course credit participants receive) differed between transcript conditions, we could not ethically use random assignment for this variable. Instead, each participant signed up online to attend either a 30-min (*abridged* condition) or a 90-min (*lengthy* condition) session. The recruitment

advertisement was identical aside from the expected duration of the study. Each session was then randomly assigned to either the *juvenile* or the *adult* condition, such that all participants in a given session were in the same age condition. We later excluded data from 29 participants (20%) who failed a comprehension test, leaving $N = 116$ for all analyses, with cell sizes ranging from 28 to 30. A post hoc power analysis indicated an achieved power of .76 to detect a medium effect ($f = 0.25$) at the standard significance level ($\alpha = .05$).

Due to a clerical error, we did not obtain demographic information from participants. All participants were currently enrolled in an undergraduate psychology course at a large public university where the undergraduate population is primarily female (59.5%) and White (53.8%), with smaller numbers of Black (22.8%), Hispanic (8.2%) and Asian (6.3%) students. Students are instructed not to sign up for research studies unless they are at least 18 years old.

### *Procedure*

Participants completed the study in groups of six to 12 individuals seated separately in a large room. First, each participant received a half-page instruction sheet, which explained that they would read portions of the transcript of an actual police interrogation of a murder suspect and provided background information about the crime. By random assignment, all participants in a given session received an instruction sheet that described the suspect as either 14 (*juvenile* condition) or 32 (*adult* condition) years old. Next, participants either read a 43-page transcript of the suspect's interrogation and confession (*lengthy* condition) or read only the suspect's confession (i.e. the final eight pages of this transcript; *abridged* condition). Then, participants completed a 12-item questionnaire, which asked for various judgments of the suspect and interrogators. Finally, they completed a comprehension test to ensure that they had read and understood the instruction sheet and transcript.

### *Materials*

*Instruction sheet.* Participants read a brief (159 words) instruction, which explained that they would now read part of the transcript of an actual police interrogation of a murder suspect and would then be asked to give their opinions of the suspect and interrogators. It went on to explain that the suspect, Michael Wilson, was suspected of having killed his sister, Stephanie Wilson, who had been found dead in the hallway of their family home, where both she and Michael (along with their parents and grandmother) had been living at the time. By random assignment (between sessions), the instruction sheet described Michael Wilson as either 'a 14-year-old adolescent' (*juvenile* condition) or 'a 32-year-old man' (*adult* condition).

*Transcript.* Participants read the interrogation of Michael Crowe – a 14-year-old who falsely confessed to killing his 12-year-old sister in 1998 after being interrogated for nine hours (Drizin & Leo, 2004). To lessen reading time without sacrificing content, we removed several sections of transcript that we deemed unimportant or repetitive, and we instead summarized these sections in brackets (e.g. '*[Several minutes of talking about the details of the computer game, Final Fantasy Seven]*', '*[Detective 2 continues to ask Michael for his cooperation]*'). We also minimally edited any phrases that revealed the suspect's true age (e.g. 'Our juvenile system is not geared to punish a child. Our system is geared to help' was changed to 'Our system is not geared to punish people. Our system is geared to help').

The result was a 43-page transcript in which two interrogators interrogate Michael (pages 1–35), and Michael ultimately confesses to murder (pages 36–43). Throughout the first 35 pages, the interrogators use common interrogation tactics – such as implying leniency (e.g. 'I think we have ways of helping this situation'), accusing the suspect of lying (e.g. 'It's not that you don't remember anything. It's that you selectively remember what you want me to hear'), interrupting the

suspect's denials (e.g. 'Cut it out, Mike. Cut it out'), presenting incriminating evidence (e.g. 'Let's talk about the blood in your room'), and threatening the suspect (e.g. 'You could be locked away for a considerable amount of time') – and Michael repeatedly denies guilt. On page 36, Michael confesses (i.e. 'All I know is I'm positive I killed her'). From that point forward, Michael ceases denying guilt, and the interrogators prompt him to explain how (e.g. 'Can you tell me about the steps you took to clean up?') and why (e.g. 'So the rage just became the overwhelming drive?') he had killed his sister. Some participants read the more complete 43-page (11,800 words) transcript of Michael's interrogation and confession (*lengthy* condition), while others read only Michael's confession (i.e. the final eight pages, 2,400 words; *abridged* condition).

*Questionnaire.* Participants completed a 12-item questionnaire, which we adapted from Kassin, Kukucka, Lawson, and DeCarlo (2014). First, participants made a binary judgment of Michael's guilt (i.e. guilty or not guilty) and rated their confidence in that judgment on a scale from 1 (*not at all*) to 10 (*very*). We later combined these two items into a single guilt-confidence score, which could range from –10 (very confident not guilty judgment) to +10 (very confident guilty judgment). Next, participants made nine judgments of Michael and the interrogators (see Table 1), each on a scale from 1 (*not at all*) to 10 (*very*). To be exact, they rated the degrees to which Michael tried to deny guilt, seemed knowledgeable about the crime, was cooperative, was stressed and was anxious, as well as the degrees to which the interrogators pressured Michael, tried to get Michael to confess, were friendly and were aggressive. Lastly, participants estimated the likelihood (0–100%) that Michael had actually committed the murder.

*Comprehension test.* Participants completed a four-item multiple-choice test to ensure that they had read and understood the instruction sheet and transcript. Two items asked them to recall Michael's age and the crime of which he was accused; these items were included in both transcript conditions. The other two items pertained to salient details of Michael's interrogation (*lengthy* condition) or confession (*abridged* condition) that were presented approximately one third and two thirds into each respective transcript (e.g. why did Michael awaken during the night?; what color does Michael use to describe his emotions?). These two items therefore differed between transcript conditions, so as to provide reassurance that participants in each condition had read the entire transcript as instructed.

We later excluded data from 29 participants (20%) who responded incorrectly to any one or more of these four items, leaving a final sample of $N = 116$. Notably, most exclusions ($n = 22$; 76%) came from the adult + lengthy transcript condition, $\chi^2(3) = 29.89$, $p < .001$, where many participants misremembered Michael's age as either 14 ($n = 10$) or 25 ($n = 12$). Upon noticing this trend, we increased the proportion of experimental sessions to be assigned to this condition – while still maintaining a random process – so as to ensure that this condition would not end up underpowered. As such, our final cell sizes ranged from $n = 28$ to 30, including $n = 29$ in the adult + lengthy transcript condition.

## Results

### Guilt judgments

Overall, 83.6% of participants misjudged the suspect (Michael) as guilty. Supporting H1, participants were less likely to judge Michael as guilty if he was described as a juvenile (74.6%) rather than an adult (93.0%), $\chi^2(1) = 7.17$, $p = .007$, $\varphi = .25$, odds ratio ($OR$) = 0.22 (95% confidence interval, CI [0.07, 0.72]). Contrary to H2, participants who read the lengthy (83.1%) and abridged (84.2%) transcripts were equally likely to judge Michael as guilty, $\chi^2(1) = 0.03$, $p = .866$, $\varphi = .02$, $OR = 0.92$ (95% CI [0.34, 2.46]). Finally, contrary to H3, the effect of age on guilt judgments

did not differ between transcript conditions, Breslow–Day $\chi^2(1) = 0.02$, $p = .886$.

*Guilt-confidence scores.* A 2 (suspect age) × 2 (transcript) analysis of variance (ANOVA) on guilt-confidence scores (–10 to +10) revealed a main effect of suspect age, $F(1, 111) = 5.18$, $p = .025$, $d = 0.43$ (95% CI [0.06, 0.80]), such that participants believed less strongly in Michael's guilt if he was described as a juvenile ($M = 4.53$, $SD = 6.25$) rather than an adult ($M = 6.77$, $SD = 3.95$), thus providing further support for H1. Contrary to H2 and H3, neither the main effect of transcript, $F(1, 111) = 1.10$, $p = .296$, $d = 0.19$ (95% CI [−0.18, 0.56]), nor the Suspect Age × Transcript interaction, $F(1, 111) = 0.20$, $p = .654$, $\eta^2_p = .00$ (90% CI [.00, .04]), was significant.

*Likelihood of commission estimates.* Unexpectedly, a 2 (suspect age) × 2 (transcript) ANOVA on likelihood of commission estimates (0–100%) revealed no effect of suspect age, $F(1, 111) = 0.34$, $p = .560$, $d = 0.11$ (95% CI [−0.25, 0.48]), such that participants in the juvenile ($M = 78.78$, $SD = 22.30$) and adult ($M = 81.11$, $SD = 18.14$) conditions thought it equally probable that Michael had committed the murder. Once again, neither the main effect of transcript, $F(1, 111) = 0.25$, $p = .622$, $d = 0.10$ (95% CI [−0.27, 0.46]), nor the Suspect Age × Transcript interaction, $F(1, 111) = 1.32$, $p = .253$, $\eta^2_p = .01$ (90% CI [.00, .06]), was significant.

### *Judgments of suspect and interrogators*

A 2 (suspect age) × 2 (transcript) multivariate analysis of variance (MANOVA) was performed on participants' nine judgments of Michael and his interrogators (Table 1). Contrary to H1, no multivariate effect of suspect age was found, $F(9, 103) = 0.69$, $p = .715$, $\eta^2_p = .06$ (90% CI [.00, .06]). Overall, participants in the juvenile and adult conditions (respectively) rated the interrogators as friendly (*M*s = 7.80, 7.94, *SD*s = 2.07, 1.93) and non-aggressive (*M*s = 3.17, 2.70, *SD*s = 2.27, 2.01), as placing a moderate amount of pressure on Michael (*M*s = 5.98, 5.55, *SD*s = 2.81, 2.99), and as trying hard to get him to confess (*M*s = 7.46, 7.07, *SD*s = 2.71, 3.18). Similarly, both groups rated Michael as anxious (*M*s = 7.14, 7.11, *SD*s = 2.64, 2.81) and stressed (*M*s = 7.41, 7.18, *SD*s = 2.87, 2.68), somewhat cooperative (*M*s = 5.86, 6.20, *SD*s = 2.56, 2.69), somewhat knowledgeable about the crime (*M*s = 4.27, 4.27, *SD*s = 2.31, 2.30), and trying somewhat hard to deny guilt (*M*s = 5.27, 4.54, *SD*s = 3.19, 3.01).

Supporting H2, a strong multivariate effect of transcript was found, $F(9, 103) = 32.58$, $p < .001$, $\eta^2_p = .74$ (90% CI [.64, .77]). As shown in Table 1, significant differences emerged for all nine judgments – eight of which were large (*d*s > 1) in magnitude. To be exact, participants who read the lengthy transcript judged Michael as more anxious, more stressed, less cooperative and having tried harder to deny guilt – but also as more knowledgeable about the crime. Participants who read the lengthy transcript also judged the interrogators as more aggressive, less friendly and having pressured Michael more and having tried harder to get him to confess.

Contrary to H3, no multivariate Suspect Age × Transcript interaction was found, $F(9, 103) = 1.09$, $p = .377$, $\eta^2_p = .09$ (90% CI [.00, .10]).

## *Discussion*

In Experiment 1, a suspect's ostensible age did not affect laypeople's impressions of the suspect or interrogators – but it did influence their guilt judgments, such that they less often and less strongly believed the suspect to be guilty if he was described as a juvenile rather than an adult. In contrast, the length of the interrogation transcript strongly influenced laypeople's impressions of the suspect and interrogators, such that those who read a fuller account of the interrogation perceived the interrogators as more hostile, the suspect as more nervous, and the process as more pressure-filled – but it did not affect their guilt judgments.

Table 1. Effects of transcript on judgments of the suspect and interrogators.

| | Abridged *M* (*SD*) | Lengthy *M* (*SD*) | *F* | *p* | *d* [95% CI] |
|---|---|---|---|---|---|
| How hard did Michael try to deny guilt? | | | | | |
| Experiment 1 | 2.63 (2.37) | 7.08 (1.98) | 122.66 | <.001 | 2.04 [1.59, 2.49] |
| Experiment 2 | 2.10 (1.81) | 7.48 (2.86) | 169.73 | <.001 | 2.25 [1.80, 2.69] |
| How much did Michael seem to know about the crime? | | | | | |
| Experiment 1 | 3.02 (1.51) | 5.46 (2.29) | 44.51 | <.001 | 1.25 [0.85, 1.65] |
| Experiment 2 | 4.52 (2.91) | 4.29 (2.58) | 0.32 | .576 | –0.08 [–0.43, 0.27] |
| How open and cooperative was Michael in his demeanor? | | | | | |
| Experiment 1 | 7.27 (2.35) | 4.85 (2.31) | 32.33 | <.001 | –1.04 [–1.43, –0.65] |
| Experiment 2 | 7.81 (1.93) | 5.83 (2.64) | 22.63 | <.001 | –0.86 [–1.22, –0.49] |
| How hard did the detectives try to get Michael to confess? | | | | | |
| Experiment 1 | 5.09 (2.73) | 9.34 (0.98) | 128.16 | <.001 | 2.09 [1.64, 2.55] |
| Experiment 2 | 5.71 (2.69) | 8.97 (1.81) | 62.31 | <.001 | 1.42 [1.03, 1.81] |
| How much pressure did the detectives place on Michael during the interrogation? | | | | | |
| Experiment 1 | 3.59 (2.06) | 7.85 (1.86) | 137.56 | <.001 | 2.17 [1.71, 2.64] |
| Experiment 2 | 4.95 (2.65) | 8.40 (1.92) | 70.10 | <.001 | 1.49 [1.10, 1.89] |
| How friendly, sympathetic, and understanding were the detectives toward Michael? | | | | | |
| Experiment 1 | 8.25 (1.58) | 7.50 (2.28) | 4.10 | .045 | –0.38 [–0.75, –0.01] |
| Experiment 2 | 8.22 (1.96) | 6.38 (2.39) | 22.04 | <.001 | –0.84 [–1.21, –0.48] |
| How hostile and aggressive were the detectives toward Michael? | | | | | |
| Experiment 1 | 1.88 (1.16) | 3.95 (2.38) | 34.96 | <.001 | 1.10 [0.71, 1.49] |
| Experiment 2 | 2.11 (1.58) | 5.00 (2.60) | 55.60 | <.001 | 1.34 [0.96, 1.73] |
| How stressful do you think this interrogation was for Michael? | | | | | |
| Experiment 1 | 5.82 (2.92) | 8.69 (1.69) | 41.68 | <.001 | 1.21 [0.81, 1.61] |
| Experiment 2 | 7.43 (2.48) | 9.10 (1.42) | 22.41 | <.001 | 0.83 [0.46, 1.19] |
| Overall, how anxious do you think Michael was during the interrogation? | | | | | |
| Experiment 1 | 5.63 (2.73) | 8.54 (1.78) | 45.47 | <.001 | 1.27 [0.87, 1.67] |
| Experiment 2 | 7.22 (2.38) | 8.95 (1.52) | 23.89 | <.001 | 0.87 [0.50, 1.23] |

*Note*: CI = confidence interval. *df* values for the *F* test were (1, 111) in Experiment 1 and (1, 122) in Experiment 2. *n*s for the abridged and lengthy conditions (respectively) were 56 and 59 in Experiment 1 and 63 and 63 in Experiment 2.

The former result suggests that laypeople may have some intuitive understanding of youth as a risk factor for false confession, insofar as they less often misjudged the juvenile confessor as guilty than they did the adult confessor. Even so, their understanding

appears limited at best, as 75% of participants still misjudged the juvenile confessor as guilty, and on average they estimated a 79% likelihood that the juvenile had committed the murder (compared to 81% for the adult confessor) even though his confession was later proven false (Drizin & Leo, 2004). These statistics are strikingly consistent with previous studies in which 76% (Redlich, Ghetti, et al., 2008) and over 80% (Molinaro & Malloy, 2016) of participants judged juvenile confessors as guilty. This pattern is perhaps unsurprising in light of research demonstrating the unique and overwhelming power of confession evidence (e.g. Appleby & Kassin, 2016; Kassin & Neumann, 1997).

The latter result echoes the findings of Kassin et al. (2017) insofar as people who read a more complete account of the interrogation perceived greater pressure on the suspect. As uch, this result supports the argument that interrogation recordings will sensitize fact-finders to the situational pressures of police interrogation. In Kassin et al. (2017), however, this sensitivity was accompanied by a threefold decrease in mistaken guilt judgments (from 31% to 9%), whereas in our study, the lengthy transcript did not improve fact-finding accuracy, as 83% of participants who read it nonetheless misjudged the suspect as guilty. This discrepancy is likely due to the fact that none of the innocent suspects in Kassin et al. (2017) confessed to the crime, whereas our suspect did confess. Prior work has shown that laypeople believe false confessions are rare even in response to coercive interrogation tactics (Leo & Liu, 2009), and confession evidence impacts guilt judgments even if jurors themselves see the confession as coerced (Kassin & Sukel, 1997). More generally, decades of research have demonstrated that people tend to attribute behavior to dispositional rather than situational factors (e.g. Gilbert & Malone, 1995; Ross, 1977), even if they are aware that situational influences are present (e.g. Gawronski, 2004). When a suspect confesses, the confession's persuasiveness may therefore override fact finders' awareness of situational pressures, such that interrogation recordings per se fail to benefit fact-finding accuracy when those recordings include a confession.

Consistent with this idea, Blandón-Gitlin and Mindthoff (2018) argued that interrogation recordings are likely not a panacea for wrongful convictions due to false confessions, but they may be more helpful when paired with expert testimony to help jurors evaluate the recordings. Moreover, Kassin et al. (2018) argued that expert testimony is especially helpful for phenomena that are highly reliable but unknown to the general public – which may include juveniles' higher risk of false confession. Indeed, most jury-eligible individuals feel that hearing expert testimony on false confessions would be helpful (Costanzo, Shaked-Schroer, & Vinson, 2010; Mindthoff et al., 2018). With this in mind, we designed a second study to test whether expert testimony would (a) lessen the tendency to misjudge juvenile false confessors as guilty and/or (b) moderate the effect of transcript length on perceptions of the interrogation.

## Experiment 2

Prior research on the effects of confession expert testimony has produced rather mixed results. In the first such study, Moffa and Platania (2007) found that expert testimony did not affect perceived pressure on the suspect, fairness of the interrogation or guilt (see also Jones & Penrod, 2016). Soon after, two studies (i.e. Blandón-Gitlin, Sperry, & Leo, 2011; Woody & Forrest, 2009) found exactly the opposite: mock jurors who read expert testimony rated the same interrogation as more coercive and less often judged the defendant as guilty (for partial replications with deliberating juries and judges, see Woody et al., 2018). In a series of studies, Henderson and Levett (2016) found that expert testimony both did (Study 3) and did not (Study 2) affect ratings of a confessor's trustworthiness and concomitant verdicts. Finally, Woestehoff and Meissner (2016) found that expert testimony had a small indirect effect on verdicts, such

that it increased participants' knowledge of false confession risk factors, which in turn affected their perceptions of the interrogation and ultimately reduced guilty verdicts.

Notably, the expert testimony in these studies only explained situational risk factors for false confession (e.g. coercive interrogation tactics, sleep deprivation) or ways to evaluate a confession's veracity (e.g. by looking for consistency with other evidence). No study has yet explored how expert testimony on age as a dispositional risk factor for false confession affects perceptions of juvenile suspects. However, a few studies have looked at how expert testimony affects perceptions of child *witnesses*. For example, Buck, London, and Wright (2011) found that mock jurors who read expert testimony on best practices for interviewing child witnesses rendered verdicts that mirrored the quality of the child's interview. Of particular relevance to the current study, Laimon and Poole (2008) found that expert testimony decreased trust in child witnesses' statements that were prompted by suggestive interviewing techniques – but only if that testimony included a sample recording of a child giving a false report.

Taken together, these findings suggest that expert testimony that specifically highlights age as a risk factor for false confession may weaken laypeople's trust in a juvenile suspect's confession – and may weaken it even further if paired with a rich account of the interrogation. To test these possibilities, participants in Experiment 2 will read the same lengthy or abridged (i.e. confession-only) transcript of a juvenile suspect's interrogation as that used in Experiment 1. Then, some participants will also read expert testimony that explains both dispositional (i.e. age-based) and situational (i.e. coercive tactics) risk factors for false confession. Finally, they will provide the same judgments of the suspect and interrogators as those in Experiment 1.

Our hypotheses are as follows:

**H1:** Participants will rate the interrogation as more coercive – and will less often misjudge the suspect as guilty – if they read expert testimony than if they do not.

**H2:** As in Experiment 1, participants will rate the interrogation as more coercive if they read a lengthy interrogation transcript rather than an abridged (i.e. confession-only) transcript.

**H3:** Transcript length will interact with expert testimony, such that the combination of a lengthy transcript and expert testimony will produce the highest ratings of coerciveness and the lowest conviction rate. Conversely, the combination of an abridged transcript and no expert testimony will produce the lowest ratings of coerciveness and the highest conviction rate.

## *Method*

### *Participants and design*

For Experiment 2, we sought to obtain a more diverse and representative sample of the jury-eligible U.S. population. To that end, we recruited $N = 140$ participants via Amazon Mechanical Turk (mTurk) – a service for recruiting individuals to complete online tasks (for more on the use of mTurk in psychology research, see Buhrmester, Kwang, & Gosling, 2011; Crump, McDonnell, & Gureckis, 2013; Ramsey, Thompson, McKenzie, & Rosenbaum, 2016). The study employed a 2 (transcript: lengthy vs. abridged) × 2 (expert: present vs. absent) between-subjects design. As in Experiment 1, we could not randomly assign participants to the two transcript conditions; instead, each participant volunteered for either a 60-minute online study (for which they were paid $4.00; *lengthy* condition) or a 20-minute online study (for which they were paid $1.00; *abridged* condition).[1]

[1]In our final sample, the Lengthy ($n = 64$) and Abridged ($n = 63$) transcript conditions did not differ in terms of age, $t(125) = 1.03$, $p = .307$, gender, $\chi^2(1) = 0.95$, $p = .331$, education level, $Z = 0.15$, $p = .881$, or jury service, $\chi^2(1) = 0.10$, $p = .748$. However, there was a slight racial difference, such that there were more Black participants in the Lengthy condition ($n = 16$; 25.0%) than in the Abridged condition ($n = 4$; 6.3%), $\chi^2(1) = 9.64$, $p = .047$.

Within each transcript condition, each participant was randomly assigned to either the expert-present or the expert-absent condition.

To ensure that all participants were jury-eligible, we later excluded three participants (2.1%) who self-reported that they were not current U.S. citizens ($n = 2$) or had a prior felony conviction ($n = 1$). All participants were at least 18 years old. We also identified and excluded six individuals (4.3%) who completed the study twice (i.e. participated in both the lengthy and abridged transcript conditions, based on a cross-checking of mTurk user IDs and confirmed by identical demographic information). For these individuals, we retained the data from whichever condition they completed first (as evidenced by an electronic timestamp) and excluded the data from whichever they completed second. Finally, we excluded four participants (2.9%) who failed a comprehension test. All told, we excluded 13 participants (9.3%), leaving a final sample of $N = 127$ jury-eligible adults for all analyses, with cell sizes ranging from 29 to 34. A post hoc power analysis (Faul et al., 2009) indicated an achieved power of .798 to detect a medium-sized effect ($f = 0.25$) at the conventional significance level ($\alpha = .05$).

Our final sample included at least one person from 39 of the 50 U.S. states. Participants were primarily male (56.7%) and White (76.4%), with fewer self-identifying as Black (15.7%), Hispanic (3.9%) and Asian (3.1%). They ranged in age from 21 to 73 years ($M = 36.25$, $SD = 9.89$), and about half (51.2%) held a Bachelor's degree or higher.

### *Procedure and materials*

After volunteering for the study on mTurk, participants received a link to complete the study on an external website. First, all participants provided demographic information and read the same instructions as those that were used in the juvenile condition of Experiment 1, which explained that they would read part of the actual police interrogation of a 14-year-old murder suspect. Next, participants read either the lengthy or abridged transcript of Michael Crowe's interrogation, which were identical to those used in Experiment 1. The abridged transcript was presented on a single webpage, whereas the lengthy transcript was divided evenly onto two webpages. As an extra attention check, participants in the lengthy condition answered four comprehension questions between reading the first and second halves of the lengthy transcript.

By random assignment, some participants then read the direct and cross-examination of a confession expert (*expert-present* condition), while others did not (*expert-absent* condition). After this, all participants provided judgments of the suspect and interrogators, using the same 12-item questionnaire as that used in Experiment 1. Participants in the expert-present condition also answered five items that asked for their opinions of the expert testimony. Finally, all participants completed the same comprehension test as that used in the abridged condition of Experiment 1; for the expert-present condition, this comprehension test also included four questions that pertained to the content of the expert testimony.

*Expert testimony.* Participants in the expert-present condition read a 1200-word transcript of simulated testimony from a juvenile confession expert (Dr. Richard Jones). Though the transcript discussed actual research findings, we strove to write it in a way that avoided jargon and would be easily understood (Flesch–Kinkaid Grade Level = 8.8).

First, the defense directly examined the expert (950 words). After explaining his credentials (e.g. a PhD in developmental psychology, over 20 peer-reviewed publications on adolescent development), the expert reviewed ways in which his research has shown that adolescents and adults differ (i.e. adolescents tend to make more impulsive decisions, care more about short-term rewards, and are more heavily influenced by social pressure), and he provided relatable examples of how these

differences can impact behavior (e.g. engaging in unprotected sex, succumbing to peer pressure). Next, the expert described a study (i.e. Redlich & Goodman, 2003) in which adolescents were more likely than young adults to falsely confess to crashing a computer. Then, he explained several reasons why people might falsely confess (i.e. because interrogators threatened or lied to them, because they were interrogated for a very long time, or because they are mentally ill, intellectually disabled or young). Finally, the expert stated that he had read the transcript of Michael's interrogation and believed that Michael's interrogators had used 'problematic' interrogation tactics.

The prosecution then cross-examined the expert (250 words). First, the prosecutor had the expert clarify several details of the computer crash study (i.e. participants were not actual criminal suspects, they did not face any legal consequences for confessing, and interrogators were not trained police officers). Then, the prosecutor asked if the aforementioned differences between adolescents and adults could lead adolescents to engage in delinquent or criminal behavior, and the expert conceded that it is possible. Finally, the prosecutor again asked the expert if he had read the transcript of Michael's interrogation and asked if Michael had therein confessed to murdering his sister, and the expert confirmed that he had.

*Perceptions of expert testimony.* In addition to providing judgments of Michael and his interrogators, participants in the expert-present condition self-reported the degree to which they felt that the expert testimony influenced their perception of Michael, their perception of his interrogators, and their opinion of Michael's guilt or innocence. They also rated the degree to which they believed that the expert's testimony was based on good scientific principles and the degree to which the expert's testimony was relevant to Michael's interrogation. They made each of these five judgments on a scale from 1 (*not at all*) to 10 (*very*).

*Comprehension test.* Halfway through their transcript, participants in the lengthy transcript condition answered four multiple-choice comprehension items that pertained to details from the first half of the lengthy transcript (e.g. how was Michael's sister killed; why did Michael awaken in the middle of the night); these items were added in Experiment 2 to provide additional assurance that participants had read the entire lengthy transcript. Then, after completing the questionnaire, all participants answered the same four comprehension items as those that were used in the abridged condition of Experiment 1; these included one critical item that asked participants to recall Michael's age and three items that pertained to details from the latter portion of the transcript (e.g. what color does Michael use to describe his emotions; what was Michael wearing on the night in question).

After this, participants in the expert-present condition also answered four multiple-choice items about the content of the expert testimony (e.g. what is Dr. Jones' job title; what were the participants in Dr. Jones' study accused of having done; who were the participants in Dr. Jones' study).

Each participant thus answered four (*abridged* + *expert-absent* condition), eight (*abridged* + *expert-present* and *lengthy* + *expert-absent* conditions), or 12 (*lengthy* + *expert-present* condition) total comprehension items. We later excluded four participants (2.9%) who responded incorrectly to the critical item that asked them to recall Michael's age. While we did not exclude any participants on the basis of their answers to the other comprehension items, all participants in our final sample ($N = 127$) answered at least 75% of the items correctly ($M = 98.92\%$, $SD = 4.07\%$), and no individual item was answered correctly by fewer than 93.8% of participants.

## Results

### Guilt judgments

Overall, 57.5% of participants misjudged the suspect (Michael) as guilty. The effect of

expert was not significant, $\chi^2(1) = 2.45$, $p = .117$, $\varphi = .14$, $OR = 0.57$ (95% CI [0.28, 1.16]), as participants who read expert testimony were somewhat – but not significantly – less likely to misjudge Michael as guilty (50.8%) than those who did not (64.5%). Likewise, the effect of transcript was not significant, $\chi^2(1) = 2.95$, $p = .086$, $\varphi = .15$, $OR = 0.54$ (95% CI [0.26, 1.10]), such that participants who read the lengthy transcript were somewhat – but not significantly – less likely to misjudge Michael as guilty (50.0%) than those who read the abridged transcript (65.1%).

Contrary to H3, the Transcript × Expert interaction was not significant, Breslow–Day $\chi^2(1) = 0.51$, $p = .476$. Notably, however, participants who read the abridged transcript without expert testimony were most likely to misjudge Michael as guilty (75.9%), while those who read the lengthy transcript with expert testimony were least likely to do so (45.2%).

*Guilt-confidence scores.* Providing some support for H1, a 2 (transcript: lengthy vs. abridged) × 2 (expert: present vs. absent) ANOVA on guilt-confidence scores revealed a marginal effect of expert, $F(1, 123) = 3.81$, $p = .053$, $d = 0.31$ (95% CI [−0.04, 0.66]), such that participants who read expert testimony believed somewhat less strongly in Michael's guilt ($M = 0.88$, $SD = 7.30$) than those who did not read expert testimony ($M = 3.23$, $SD = 7.84$). Unlike in Experiment 1, a main effect of transcript also emerged, $F(1, 123) = 7.73$, $p = .006$, $d = 0.47$ (95% CI [0.11, 0.82]), such that participants who read the lengthy transcript believed less strongly in Michael's guilt ($M = 0.30$, $SD = 8.11$) than those who read the abridged transcript ($M = 3.78$, $SD = 6.73$). Contrary to H3, no Transcript × Expert interaction was found, $F(1, 123) = 0.71$, $p = .400$, $\eta^2_p = .01$ (90% CI [.00, .05]).

*Likelihood of commission estimates.* Supporting H1, a 2 (transcript) × 2 (expert) ANOVA on likelihood of commission estimates (0–100%) revealed a main effect of expert, $F(1, 122) = 4.92$, $p = .028$, $d = 0.37$ (95% CI [0.02, 0.72]), such that participants who read expert testimony thought it less likely that Michael had committed the murder ($M = 57.14$, $SD = 30.58$) than those who did not read expert testimony ($M = 68.92$, $SD = 33.12$). Unlike in Experiment 1, a main effect of transcript also emerged, $F(1, 122) = 5.49$, $p = .021$, $d = 0.39$ (95% CI [0.04, 0.74]), such that participants who read the lengthy transcript produced lower estimates ($M = 56.63$, $SD = 34.49$) than those who read the abridged transcript ($M = 69.05$, $SD = 28.80$). Contrary to H3, no Transcript × Expert interaction was found, $F(1, 123) = 0.36$, $p = .551$, $\eta^2_p = .00$ (90% CI [.00, .04]).

*Comparison of samples.* To explore whether perceptions of Michael's guilt differed between our undergraduate and mTurk samples, we performed several exploratory analyses that compared the otherwise-identical juvenile conditions from Experiment 1 and expert-absent conditions from Experiment 2. In both studies, exactly 75.9% of participants who read the abridged transcript judged Michael as guilty. The effect of transcript on guilt judgments did not differ between studies, Breslow–Day $\chi^2(1) = 1.03$, $p = .309$, such that undergraduates who read the lengthy transcript judged Michael as guilty (73.3%) somewhat – but not significantly – more often than mTurk users (54.5%). Similarly, a 2 (experiment) × 2 (transcript) ANOVA on likelihood of commission estimates revealed neither a main effect of experiment, $F(1, 116) = 3.49$, $p = .064$, $\eta^2_p = .03$ (90% CI [.00, .10]), nor an Experiment × Transcript interaction, $F(1, 116) = 1.00$, $p = .319$, $\eta^2_p = .01$ (90% CI [.00, .06]). We thus found no evidence that undergraduates and mTurk users differed in their perceptions of Michael's guilt or the degree to which transcript length affected those perceptions.

*Judgments of suspect and interrogators*

A 2 (transcript) × 2 (expert) MANOVA was performed on participants' nine judgments of Michael and his interrogators. The analysis revealed a multivariate effect of expert, $F(9, 114) = 2.54$, $p = .011$, $\eta^2_p = .17$ (90% CI [.02, .21]), with a significant univariate effect on one of the nine items: contrary to H1, participants who read expert testimony judged Michael as having tried *less* hard to deny guilt ($M = 4.00$, $SD = 3.21$) than did those who did not read expert testimony ($M = 5.62$, $SD = 3.83$), $F(1, 122) = 11.17$, $p = .001$, $d = 0.46$ (95% CI [0.11, 0.81]). For the other eight items, expert testimony did not affect perceptions of the suspect or interrogators, all $p$s $> .07$. Overall, participants in the expert-present and expert-absent conditions (respectively) perceived the interrogators as friendly ($M$s = 7.31, 7.30, $SD$s = 2.30, 2.45) and non-aggressive ($M$s = 3.49, 3.62, $SD$s = 2.61, 2.59), as putting some pressure on Michael ($M$s = 6.77, 6.57, $SD$s = 2.85, 2.94), and as trying hard to get him to confess ($M$s = 7.11, 7.59, $SD$s = 2.87, 2.73). Similarly, both groups perceived Michael as anxious ($M$s = 8.11, 8.07, $SD$s = 1.99, 2.37), stressed ($M$s = 8.32, 8.20, $SD$s = 1.94, 2.43), somewhat cooperative ($M$s = 6.91, 6.72, $SD$s = 2.26, 2.76), and somewhat knowledgeable about the crime ($M$s = 3.98, 4.85, $SD$s = 2.59, 2.85).

Supporting H2 (and replicating Experiment 1), a strong multivariate effect of transcript was also found, $F(9, 114) = 25.27$, $p < .001$, $\eta^2_p = .67$ (90% CI [.55, .70]), with significant univariate differences on eight of the nine items. As shown in Table 1, participants who read the lengthy transcript judged Michael as more anxious, more stressed, less cooperative and having tried harder to deny guilt, and they judged the interrogators as more aggressive, less friendly and having pressured Michael more and tried harder to get him to confess. However, both groups rated Michael as equally knowledgeable about the crime. Contrary to H3, no multivariate Transcript × Expert interaction was found, $F(9, 114) = 1.40$, $p = .195$, $\eta^2_p = .10$ (90% CI [.00, .12]).

*Judgments of the expert*

Overall, participants in the expert-present condition felt that the expert testimony was based on good scientific principles ($M = 7.54$ out of 10, $SD = 1.78$) and was relevant to Michael's interrogation ($M = 7.18$, $SD = 2.39$). They also believed that it had somewhat influenced their opinions of Michael ($M = 4.89$, $SD = 2.55$), of the interrogators ($M = 4.85$, $SD = 2.77$), and of Michael's guilt or innocence ($M = 4.85$, $SD = 2.59$). A two-group MANOVA showed no effect of transcript on these five items, $F(5, 59) = 2.24$, $p = .063$, $\eta^2_p = .16$ (90% CI [.00, .24]).

## General discussion

The current studies tested whether jurors possess a 'common sense' understanding of youth as a risk factor for false confession (Experiment 1) and whether hearing expert testimony to that effect would influence perceptions of a juvenile confessor (Experiment 2). Both studies also explored whether giving jurors a more complete account of the interrogation would moderate these effects. In Experiment 1, participants less often misjudged a juvenile false confessor as guilty than an adult false confessor – but 75% of them still misjudged the juvenile as guilty, including 73% of those who had read a lengthy transcript of his interrogation. In Experiment 2, reading expert testimony somewhat (albeit non-significantly) improved fact-finding accuracy – but even among those who read a lengthy transcript of his interrogation *and* relevant expert testimony, nearly half (45%) still misjudged the juvenile as guilty. In sum, our findings suggest that laypeople did not intuitively discount the confession of a juvenile suspect when judging guilt, and that expert testimony on the subject is only somewhat helpful in this regard.

With this in mind, the problem of juvenile false confessions may be better addressed in the interrogation room than in the courtroom. As numerous studies have documented (Cleary & Warner, 2016; Feld, 2013; Kostelnik & Reppucci, 2009; Malloy et al., 2014; Meyer & Reppucci, 2007), police typically use the same interrogation tactics with juvenile suspects as they do with adults – including tactics that are known to increase the risk of false confession (e.g. Meissner et al., 2014; Stewart, Woody, & Pulos, 2018; see also Kassin et al., 2010). The widely-used Reid Technique of interrogation (Inbau, Reid, Buckley, & Jayne, 2011) provides little if any special training on how and why adolescents should be interrogated differently than adults, and, as such, Reid-trained interrogators view adolescents as more mature and are more likely to use problematic interrogation techniques with them than other interrogators (Kostelnik & Reppucci, 2009). Notably, while few police receive special training on interrogating juveniles, it appears that many police *want* such training; in two studies, 33% (Meyer & Reppucci, 2007) and over 70% (Kostelnik & Reppucci, 2009) expressed a desire for more structured training and/or procedures for interrogating juvenile suspects.

Aside from changing interrogation practices, others have suggested that juvenile suspects be afforded special protections in the interrogation room. In the UK, juvenile suspects are entitled to have an 'appropriate adult' present during interrogation, whereas in the US, this policy varies between states. The effectiveness of this safeguard remains unclear, as there is little empirical data on the benefits and/or costs of having an adult present. Some evidence suggests that the presence of a parent could actually be counterproductive insofar as the parents are likewise unknowledgeable about the interrogation process, including their rights (e.g. Cleary & Warner, 2017; Woolard, Cleary, Harvell, & Chen, 2008), and may instead simply encourage their child to cooperate. However, having a parent present may also increase the likelihood of having an attorney present (Medford, Gudjonsson, & Pearse, 2003), which is assumed to be beneficial.

In the courtroom, Experiment 2 provides some evidence that expert testimony on youth as a risk factor for false confession can benefit fact-finding accuracy. Prior research suggests that such testimony may be especially beneficial in cases where the interrogation is not overtly coercive, insofar as jurors appear more apt to attribute a confession to dispositional factors in such cases (Woestehoff & Meissner, 2016). However, because our suspect's confession was always false, we cannot say whether expert testimony made our participants more *sensitive* to the confession's veracity or more *skeptical* of confession evidence in general (Leippe & Eisenstadt, 2009). Given that expert testimony affected guilt judgments but not perceptions of the suspect or interrogators, it is certainly plausible that the observed effect was due to skepticism, which would lessen wrongful convictions but also correct ones. There is some evidence that expert testimony can increase sensitivity to situational risk factors that are diagnostic of a confession's veracity (Horgan, Russano, Meissner, & Evans, 2012), yet it remains to be seen whether and how this can be accomplished for dispositional risk factors such as youth.

Expert testimony did have one effect on perceptions of the suspect: contrary to our prediction, those who read expert testimony rated the juvenile suspect as trying *less* hard to deny guilt. We propose that this finding might be best explained in terms of Simon's (2004, 2012) *cognitive coherence* framework, which posits that decision-making is a dynamic process whereby individual pieces of evidence shape each other's interpretation until the entire of body of evidence appears internally consistent. In our study, for example, expert testimony may have retroactively influenced perceptions of the suspect's resistance during his interrogation (i.e. the expert explained that youth tend to be more compliant, and participants thus

remembered him as more compliant). More generally, we wonder if expert testimony would have had a different effect if participants had read it before the interrogation transcript rather than after. Studies of *predecisional distortion* (e.g. Carlson & Russo, 2001; Hope, Memon, & McGeorge, 2004) suggest that information presented earlier at trial may have a stronger effect on jury decision-making, which echoes classic research on primacy effects (e.g. Asch, 1946). With this in mind, future research should examine potential order effects when presenting jurors with both confession expert testimony and information about an interrogation.

Consistent with arguments in favor of recording interrogations (e.g. The Justice Project, 2007), participants in both studies who read a more complete account of the interrogation perceived the suspect as more anxious and resistant and the interrogators as more aggressive. However, transcript length only affected guilt judgments in Experiment 2. One might wonder if this is a function of the different samples (i.e. undergraduates in Experiment 1 vs. mTurk users in Experiment 2). Although we cannot rule out this possibility, between-experiment comparisons found little evidence that students were differently affected by the length of the transcript or were more conviction-prone in general. A second possibility is that the lengthy transcript condition in Experiment 2 included an additional comprehension check that was not included in Experiment 1. Perhaps this additional check increased participants' attention to the materials, which in turn influenced their guilt judgments. Whatever the reason, this discrepancy underscores the argument that recording interrogations – though beneficial in many ways – is likely not a panacea for false-confession-induced wrongful convictions, insofar as recordings can sensitize jurors to situational pressure without changing their verdict decision (Blandón-Gitlin & Mindthoff, 2018).

Given that proponents of recording interrogations typically urge that interrogations be *video-* (or at least audio-) recorded, one might wonder if our participants would have reacted differently to audiovisual materials rather than transcripts. Generally speaking, prior research has found little effect of presentation medium on juror decision-making (Bornstein, 1999; Pezdek, Avila-Mora, & Sperry, 2009) or deception judgments (Bond & DePaulo, 2006). With respect to confessions specifically, Honts et al. (2014) found that students were better at judging the veracity of audio- or video-taped confessions than of transcribed confessions. However, Kassin et al. (2017) found that students who listened to an audio recording of an interrogation were more likely to misjudge an innocent suspect as guilty than were others who read a transcript of the same interrogation. Given these conflicting results, the potential moderating effect of presentation medium warrants further investigation – especially with respect to suspect age, which would naturally be more salient in a video recording.

The current studies are also conspicuously limited by their quasi-experimental nature; though we randomly assigned participants to age (Experiment 1) and expert testimony (Experiment 2) conditions, we allowed participants to self-select into the lengthy or abridged transcript conditions rather than burdening the latter group with many filler tasks. Therefore, although both studies revealed similar effects of transcript length on perceptions of the interrogation, we cannot rule out the possibility that these effects are due to biased self-selection. Relatedly, one might wonder if the abridged transcript would have a different effect if accompanied by testimony from the interrogator and/or defendant, as is typical in real-world trials. To address these limitations, future research in this area should strive to place participants in a more realistic trial atmosphere – including, for example, testimony from various parties, judicial instructions, and/or arguments from the prosecution and defense – to see whether the observed findings replicate in a richer simulation. Finally, while both studies were adequately powered to detect medium-sized effects, we

may have failed to detect smaller effects that we were underpowered to detect. Indeed, some of our analyses revealed patterns that were not statistically significant but may be practically important, such as the effects of transcript length and expert testimony on verdicts in Experiment 2. Future efforts to replicate and extend our findings should employ larger samples so as to obtain a more nuanced understanding of these effects.

In sum, Kassin et al.'s (2018) survey of confession experts found near-unanimous agreement that youth is a risk factor for false confession, but experts disagreed over whether jurors would understand this as a matter of 'common sense' – and thus whether jurors would benefit from expert testimony on the subject. The current studies provide the first direct test of the latter proposition, and our findings suggest that jurors' common sense is limited such that they do stand to benefit from developmentally based expert testimony. Given the relative frequency of false confessions from juvenile suspects, we hope that these studies will spur additional efforts to understand how to best protect this vulnerable population.

## Ethical standards

### *Declaration of conflicts of interest*

Lauren J. Grove has declared no conflicts of interest

Jeff Kukucka has declared no conflicts of interest

### *Ethical approval*

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

### *Informed consent*

Informed consent was obtained from all individual participants included in the study.

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## References

Appleby, S. C., Hasel, L. E., & Kassin, S. M. (2013). Police-induced confessions: An empirical analysis of their content and impact. *Psychology, Crime & Law*, *19*(2), 111–128. doi:10.1080/1068316X.2011.613389

Appleby, S. C., & Kassin, S. M. (2016). When self-report trumps science: Effects of confessions, DNA, and prosecutorial theories on perceptions of guilt. *Psychology, Public Policy, and Law*, *22*(2), 127–140. doi:10.1037/law0000080

Asch, S. E. (1946). Forming impressions of personality. *Journal of Abnormal Psychology*, *41*, 258–290. doi:10.1037/h0055756

Billings, F. J., Taylor, T., Burns, J., Corey, D. L., Garven, S., & Wood, J. M. (2007). Can reinforcement induce children to falsely incriminate themselves? *Law and Human Behavior*, *31*(2), 125–139. doi:10.1007/s10979-006-9049-5

Blandón-Gitlin, I., & Mindthoff, A. (2018). Do video recordings help jurors recognize coercive influences in interrogations? In C. J. Najdowski & M. C. Stevenson (Eds.), *Criminal juries in the 21st century: Contemporary issues, psychological science, and the law* (pp. 195–220). New York, NY: Oxford University Press.

Blandón-Gitlin, I., Sperry, K., & Leo, R. A. (2011). Jurors believe interrogation tactics are not likely to elicit false confessions: Will expert witness testimony inform them otherwise? *Psychology, Crime & Law*, *17*(3), 239–260. doi:10.1080/10683160903113699

Bond, C. F., Jr., & DePaulo, B. M. (2006). Accuracy of deception judgments. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc*, *10*(3), 214–234. doi:10.1207/s15327957pspr1003_2

Bornstein, B. (1999). The ecological validity of jury simulations: Is the jury still out? *Law*

*and Human Behavior*, *23*(1), 75–91. doi:10.1023/A:1022326807441

Buck, J. A., London, K., & Wright, D. B. (2011). Expert testimony regarding child witnesses: Does it sensitize jurors to forensic interview quality? *Law and Human Behavior*, *35*(2), 152–164. doi:10.1007/s10979-010-9228-2

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, *6*(1), 3–5. doi:10.1177/1745691610393980

Carlson, K. A., & Russo, J. E. (2001). Biased interpretation of evidence by mock jurors. *Journal of Experimental Psychology. Applied*, *7*(2), 91–103. doi:10.1037/1076-898X.7.2.91

Chojnacki, D. E., Cicchini, M. D., & White, L. T. (2008). An empirical basis for the admission of expert testimony on false confessions. *Arizona State Law Journal*, *40*, 2–45.

Cleary, H. M. D. (2017). Applying the lessons of developmental psychology to the study of juvenile interrogations: New directions for research, policy, and practice. *Psychology, Public Policy, and Law*, *23*(1), 118–130. doi:10.1037/law0000120

Cleary, H. M. D., & Warner, T. C. (2016). Police training in interviewing and interrogation methods: A comparison of techniques used with adult and juvenile suspects. *Law and Human Behavior*, *40*(3), 270–284. doi:10.1037/lhb0000175

Cleary, H. M., & Warner, T. C. (2017). Parents' knowledge and attitudes about youths' interrogation rights. *Psychology, Crime & Law*, *23*(8), 777–793. doi:10.1080/1068316X.2017.1324030

Costanzo, M., Shaked-Schroer, N., & Vinson, K. (2010). Juror beliefs about police interrogations, false confessions, and expert testimony. *Journal of Empirical Legal Studies*, *7*(2), 231–247. doi:10.1111/j.1740-1461.2010.01177.x

Crump, M. J. C., McDonnell, J. V., & Gureckis, T. M. (2013). Evaluating Amazon's Mechanical Turk as a tool for experimental behavioral research. *PLoS One*, *8*(3), e57410. doi:10.1371/journal.pone.0057410

Drizin, S. A., & Leo, R. A. (2004). The problem of false confessions in the post-DNA world. *North Carolina Law Review*, *82*, 891–1004.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behav Res Methods*, *41*(4), 1149–1160. doi:10.3758/BRM.41.4.1149

Feld, B. C. (2013). Real interrogation: What actually happens when cops question kids. *Law & Society Review*, *47*(1), 1–35. doi:10.1111/lasr.12000

Gawronski, B. (2004). Theory-based bias correction in dispositional inference: The fundamental attribution error is dead, long live the correspondence bias. *European Review of Social Psychology*, *15*(1), 183–217. doi:10.1080/10463280440000026

Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin*, *117*(1), 21–38. doi:10.1037/0033-2909.117.1.21

Goldstein, N. E. S., Condie, L. O., Kalbeitzer, R., Osman, D., & Geier, J. L. (2003). Juvenile offenders' Miranda rights comprehension and self-reported likelihood of offering false confessions . *Assessment*, *10*(4), 359–369. doi:10.1177/1073191103259535

Grisso, T., & Schwartz, R. G. (Eds.). (2000). *Youth on trial: A developmental perspective on juvenile justice*. Chicago: University of Chicago Press.

Grisso, T., Steinberg, L., Woolard, J., Cauffman, E., Scott, E., Graham, S., … Schwartz, R. (2003). Juveniles' competence to stand trial: A comparison of adolescents' and adults' capacities as trial defendants. *Law and Human Behavior*, *27*(4), 333–363. doi:10.1023/A:1024065015717

Gross, S. R., & Schaffer, M. (2012). Exonerations in the United States, 1989–2012: Report by the National Registry of Exonerations. Retrieved from the University of Michigan Law School. Retrieved from https://repository.law.umich.edu/other/92/

Gudjonsson, G. H., Sigurdsson, J. F., Asgeirsdottir, B. B., & Sigfusdottir, I. D. (2006). Custodial interrogation, false confession, and individual differences: A national study among Icelandic youth. *Personality and Individual Differences*, *41*(1), 49–59. doi:10.1016/j.paid.2005.12.012

Gudjonsson, G. H., Sigurdsson, J. F., & Sigfusdottir, I. D. (2009). Interrogation and false confessions among adolescents in seven European countries: What background and psychological variables best discriminate between false confessors and non-false confessors? *Psyc hology, Crime & Law*, *15*(8), 711–728. doi:10.1080/10683160802516257

Haney-Caron, E., Goldstein, N. E. S., & Mesiarik, C. (2018). Self-perceived likelihood of false confession. *Criminal Justice and Behavior*, *45*(12), 1955–1976. doi:10.1177/0093854818799806

Henderson, K. S., & Levett, L. M. (2016). Can expert testimony sensitize jurors to variations in confession evidence? *Law and Human Behavior*, *40*(6), 638–649. doi:10.1037/lhb0000204

Henkel, L. A., Coffman, K. A. J., & Dailey, E. M. (2008). A survey of people's attitudes and beliefs about false confessions. *Behavioral Sciences & the Law*, *26*(5), 555–584. doi:10.1002/bsl.826

Honts, C. R., Kassin, S. M., & Craig, R. A. (2014). I'd know a false confession if I saw one': A constructive replication with juveniles. *Psychology, Crime & Law*, *20*(7), 695–704. doi:10.1080/1068316X.2013.854792

Hope, L., Memon, A., & McGeorge, P. (2004). Understanding pretrial publicity: Prede cisional distortion of evidence by mock jurors. *Journal of Experimental Psychology. Applied*, *10*(2), 111–119. doi:10.1037/1076-898X.10.2.111

Horgan, A. J., Russano, M. B., Meissner, C. A., & Evans, J. R. (2012). Minimization and maximization techniques: Assessing the perceived consequences of confessing and confession diagnosticity. *Psychology, Crime & Law*, *18*(1), 65–78. doi:10.1080/1068316X.2011.561801

Inbau, F. E., Reid, J. E., Buckley, J. P., & Jayne, B. C. (2011). *Criminal interrogation and confessions* (5th ed.). Burlington, MA: Jones & Bartlett.

Jones, A. M., & Penrod, S. (2016). Can expert testimony sensitize jurors to coercive interrogation tactics? *Journal of Forensic Psychology Practice*, *16*(5), 393–409. doi:10.1080/15228932.2016.1232029

Kassin, S. M., Drizin, S. A., Grisso, T., Gudjonsson, G. H., Leo, R. A., & Redlich, A. D. (2010). Police-induced confessions: Risk factors and recommendations. *Law and Human Behavior*, *34*(1), 3–38. doi:10.1007/s10979-009-9188-6

Kassin, S. M., Kukucka, J., Lawson, V. Z., & DeCarlo, J. (2014). Does video recording alter the behavior of police during interrogation? A mock crime-and-investigation study. *Law and Human Behavior*, *38*(1), 73–83. doi:10.1037/lhb0000047

Kassin, S. M., Kukucka, J., Lawson, V. Z., & DeCarlo, J. (2017). Police reports of mock suspect interrogations: A test of accuracy and perception. *Law and Human Behavior*, *41*(3), 230–243. doi:10.1037/lhb0000225

Kassin, S. M., Meissner, C. A., & Norwick, R. J. (2005). "I'd know a false confession if I saw one": A comparative study of college students and police investigators. *Law and Human Behavior*, *29*(2), 211–227. doi:10.1007/s10979-005-2416-9

Kassin, S. M., & Neumann, K. (1997). On the power of confession evidence: An experimental test of the 'fundamental difference' hypothesis. *Law and Human Behavior*, *21*(5), 469–484. doi:10.1023/A:1024871622490

Kassin, S. M., Redlich, A. D., Alceste, F., & Luke, T. J. (2018). On the general acceptance of confessions research: Opinions of the scientific community. *The American Psychologist*, *73*(1), 63–80. doi:10.1037/amp0000141

Kassin, S. M., & Sukel, H. (1997). Coerced confessions and the jury: An experimental test of the harmless error rule. *Law and Human Behavior*, *21*(1), 27–46. doi:10.1023/A:1024814009769

Kassin, S. M., & Wrightsman, L. S. (1980). Prior confessions and mock juror verdicts. *Journal of Applied Social Psychology*, *10*(2), 133–146. doi:10.1111/j.1559-1816.1980.tb00698.x

Kassin, S. M., & Wrightsman, L. S. (1981). Coerced confessions, judicial instruction, and mock juror verdicts. *Journal of Applied Social Psychology*, *11*(6), 489–506. doi:10.1111/j.1559-1816.1981.tb00838.x

Kassin, S. M., & Wrightsman, L. S. (1985). Confession evidence. In S. M. Kassin & L. S. Wrightsman (Eds.), *The psychology of evidence and trial procedure* (3rd ed., pp. 67–94). Beverly Hills, CA: Sage.

Kostelnik, J. O., & Reppucci, N. D. (2009). Reid training and sensitivity to developmental maturity in interrogation: Results from a national survey of police. *Behavioral Sciences & the Law*, *27*(3), 361–379. doi:10.1002/bsl.871

Laimon, R. L., & Poole, D. A. (2008). Adults usually believe young children: The influence of eliciting questions and suggestibility presentations on perceptions of children's disclosures. *Law and Human Behavior*, *32*(6), 489–501. doi:10.1007/s10979-008-9127-y

Leippe, M. R., & Eisenstadt, D. (2009). The influence of eyewitness expert testimony on jurors' beliefs and judgments. In B. L. Cutler (Ed.), *Expert testimony on the psychology of eyewitness identification* (pp.

169–200). New York, NY: Oxford University Press.

Leo, R. A., & Liu, B. (2009). What do potential jurors know about police interrogation techniques and false confessions? *Behavioral Sciences & the Law*, *27*(3), 381–399. doi:10.1002/bsl.872

Madon, S., Guyll, M., Scherr, K. C., Greathouse, S., & Wells, G. L. (2012). Temporal discounting: The differential effect of proximal and distal consequences on confession decisions. *Law and Human Behavior*, *36*(1), 13–20. doi:10.1037/h0093962

Malloy, L. C., Shulman, E. P., & Cauffman, E. (2014). Interrogations, confessions, and guilty pleas among serious adolescent offenders. *Law and Human Behavior*, *38*(2), 181–193. doi:10.1037/lhb0000065

Medford, S., Gudjonsson, G. H., & Pearse, J. (2003). The efficacy of the appropriate adult safeguard during police interviewing. *Legal and Criminological Psychology*, *8*(2), 253–266. doi:10.1348/135532503322363022

Meissner, C. A., Redlich, A. D., Michael, S. W., Evans, J. R., Camilletti, C. R., Bhatt, S., & Brandon, S. (2014). Accusatorial and information-gathering interrogation methods and their effects on true and false confessions: A meta-analytic review. *Journal of Experimental Criminology*, *10*(4), 459–486. doi:10.1007/s11292-014-9207-6

Meyer, J. R., & Reppucci, N. D. (2007). Police practices and perceptions regarding juvenile interrogation and interrogative suggestibility. *Behavioral Sciences & the Law*, *25*(6), 757–780. doi:10.1002/bsl.774

Mindthoff, A., Evans, J. R., Perez, G., Woestehoff, S. A., Olaguez, A. P., Klemfuss, J. Z., … Woody, W. D. (2018). A survey of potential jurors' perceptions of interrogations and confessions. *Psychology, Public Policy, and Law*, *24*(4), 430–448. doi:10.1037/law0000182

Moffa, S. M., & Platania, J. (2007). Effects of expert testimony and interrogation tactics on perceptions of confessions. *Psychological Reports*, *100*(2), 563–570. doi:10.2466/pr0.100.2.563-570

Molinaro, P. F., & Malloy, L. C. (2016). Statements from youth in legal contexts: Effects of consistency, legal role, and age. *Behavioral Sciences & the Law*, *34*(1), 139–159. doi:10.1002/bsl.2236

Najdowski, C. J., & Bottoms, B. L. (2012). Understanding jurors' judgements in cases involving juvenile defendants: Effects of confession evidence and intellectual disability. *Psychology, Public Policy, and Law*, *18*(2), 297–337. doi:10.1037/a0025786

Najdowski, C. J., Bottoms, B. L., & Vargas, M. C. (2009). Jurors' perceptions of juvenile defendants: the influence of intellectual disability, abuse history, and confession evidence. *Behavioral Sciences & the Law*, *27*(3), 401–430. doi:10.1002/bsl.873

Owen-Kostelnik, J., Reppucci, N. D., & Meyer, J. D. (2006). Testimony and interrogation of minors: Assumptions about maturity and morality. *The American Psychologist*, *61*(4), 286–304. doi:10.1037/0003-066X.61.4.286

Pezdek, K., Avila-Mora, E., & Sperry, K. (2009). Does trial presentation medium matter in jury simulation research? Evaluating the effectiveness of eyewitness expert testimony. *Applied Cognitive Psychology*, *24*(5), 673–690. doi:10.1002/acp.1578

Pimentel, P. S., Arndorfer, A., & Malloy, L. C. (2015). Taking the blame for someone else's wrongdoing: The effects of age and reciprocity. *Law and Human Behavior*, *39*(3), 219–231. doi:10.1037/lhb0000132

Ramsey, S. R., Thompson, K. L., McKenzie, M., & Rosenbaum, A. (2016). Psychological research in the internet age: The quality of web-based data. *Computers in Human Behavior*, *58*, 354–360. doi:10.1016/j.chb.2015.12.049

Redlich, A. D., Ghetti, S., & Quas, J. A. (2008). Perceptions of children during a police interview: A comparison of alleged victims and suspects. *Journal of Applied Social Psychology*, *38*(3), 705–735. doi:10.1111/j.1559-1816.2007.00323.x

Redlich, A. D., & Goodman, G. S. (2003). Taking responsibility for an act not committed: The influence of age and suggestibility. *Law and Human Behavior*, *27*(2), 141–156. doi:10.1023/A:1022543012851

Redlich, A. D., Quas, J. A., & Ghetti, S. (2008). Perceptions of children during a police interrogation: Guilt, confessions, and interview fairness. *Psychology, Crime, and Law*, *14*(3), 201–223. doi:10.1111/j.1559-1816.2007.00323.x

Redlich, A. D., Silverman, M., Chen, J., & Steiner, H. (2004). The police interrogation of children and adolescents. In G. D. Lassiter (Ed.), *Interrogations, confessions, and entrapment* (pp. 107–125). Boston, MA: Springer.

Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. *Advances in Experimental Social Psychology*, *10*, 174–221.

Simon, D. (2004). A third view of the black box: Cognitive coherence in legal decision

making. *The University of Chicago Law Review*, *71*, 511–586.

Simon, D. (2012). *In doubt: The psychology of the criminal justice process*. Cambridge, MA: Harvard University Press.

Steinberg, L., & Scott, E. S. (2003). Less guilty by reason of adolescence: Developmental immaturity, diminished responsibility, and the juvenile death penalty. *The American Psychologist*, *58*(12), 1009–1018. doi:10.1037/0003-066X.58.12.1009

Stewart, J. M., Woody, W. D., & Pulos, S. (2018). The prevalence of false confessions in experimental laboratory simulations: A meta-analysis. *Behavioral Sciences & the Law*, *36*(1), 12–31. doi:10.1002/bsl.2327

The Justice Project. (2007). *Electronic recording of custodial interrogations: A policy review*. Washington, DC: Author.

Viljoen, J. L., Klaver, J., & Roesch, R. (2005). Legal decisions of preadolescent and adolescent defendants: Predictors of confessions, pleas, communication with attorneys, and appeals. *Law and Human Behavior*, *29*(3), 253–277. doi:10.1007/s10979-005-3613-2

Wallace, D. B., & Kassin, S. M. (2012). Harmless error analysis: How do judges respond to confession errors? *Law and Human Behavior*, *36*(2), 151–157. doi:10.1037/h0093975

Whelan, R., & McHugh, L. A. (2009). Temporal discounting of hypothetical monetary rewards by adolescents, adults, and older adults. *The Psychological Record*, *59*(2), 247–258. doi:10.1007/BF03395661

Woestehoff, S. A., & Meissner, C. A. (2016). Juror sensitivity to false confession risk factors: Dispositional vs. situational attributions for a confession. *Law and Human Behavior*, *40*(5), 564–579. doi:10.1037/lhb0000201

Woody, W. D., & Forrest, K. D. (2009). Effects of false-evidence ploys and expert testimony on jurors' verdicts, recommended sentences, and perceptions of confession evidence. *Behavioral Sciences & the Law*, *27*(3), 333–360. doi:10.1002/bsl.865

Woody, W. D., Stewart, J. M., Forrest, K. D., Camacho, L. J., Woestehoff, S. A., Provenza, K. R., … Powner, S. J. (2018). Effects of false-evidence ploys and expert testimony on jurors, juries, and judges. *Cogent Psychology*, *5*(1), 1528744. doi:10.1080/23311908.2018.1528744

Woolard, J. L., Cleary, H. M., Harvell, S. A., & Chen, R. (2008). Examining adolescents' and their parents' conceptual and practical knowledge of police interrogation: A family dyad approach. *Journal of Youth and Adolescence*, *37*(6), 685–698. doi:10.1007/s10964-008-9288-5