71. The effects of the putative confession and evidence presentation on maltreated and non-maltreated 9- to 12-year-olds’ coached concealment of a minor transgression.

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The Effects of the Putative Confession and Evidence Presentation on Maltreated and Non-Maltreated 9- to 12-year-olds’ Coached Concealment of a Minor Transgression

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Abstract

The present study examined the influence of the putative confession (in which children are told that the suspect told them “everything that happened” and “wants [the child] to tell the truth”) and evidence presentation on 9- to 12-year-old maltreated and non-maltreated children’s disclosure ($N = 321$). Half of the children played a forbidden game with an adult confederate which resulted in a laptop breaking (no transgression occurred for the other half of children), followed by coaching to conceal the forbidden game and to falsely disclose the sanctioned game. Children were then interviewed about the interaction with the confederate. Among the 9- to 10-year-olds, the putative confession led to a higher rate of breakage disclosure (62%) than the control condition (13%), and higher rates of leakage of incriminating details during recall (47% compared to 9%). Older children were more likely to disclose than younger children, and uninfluenced by the putative confession. Among all ages, evidence presentation elicited disclosures from 63% of children who had not previously disclosed, without eliciting any false disclosures.

Keywords: disclosure; honesty; putative confession; evidence presentation; forensic interview; child maltreatment
Obtaining honest and accurate reports is one of the most important tasks that forensic interviewers and legal professionals are charged with when interviewing potential witnesses and victims of an alleged crime. When children are interviewed, it is typically about the alleged wrongdoing of an adult, often actions in which the child feels implicated. For example, children are most often called to testify in child sexual abuse prosecutions (Goodman, Quas, Bulkley, & Shapiro, 1999), and sexually abused children frequently exhibit self-blame (Quas, Goodman, & Jones, 2003). Feelings of shame, guilt or fear often result in reluctance to disclose (Anderson, Martin, Mullen, Romans, & Herbison, 1993). Thus, it is imperative to develop methods that assist in increasing children’s honest and accurate disclosures of their own and others’ transgressions.

The developmental literature on children’s ability to conceal wrongdoings suggests that children are able to tell lies as early as 2 to 3 years of age (Evans & Lee, 2013; Williams, Leduc, Crossman, & Talwar, 2017; Wilson, Smith, & Ross, 2003). By 4 years of age the majority of children will deny their own transgression (e.g., Polak & Harris, 1999; Talwar & Lee, 2002) and conceal transgressions in which they are implicated (Lyon, Malloy, Quas, & Talwar, 2008; Lyon, Wandrey, Ahern, Licht, Sim, & Quas, 2014; Rush, Stolzenberg, Quas, & Lyon, 2017). Throughout childhood the sophistication of children’s ability to tell lies increases (Evans, Xu, & Lee, 2011; Gervais, Tremblay, Desmarais-Gervais, & Vitaro, 2000; Talwar & Lee, 2002, 2008; Wilson et al., 2003) with children’s ability to maintain their lie across questions and avoid leaking incriminating details (known as semantic leakage control, Talwar & Lee, 2002) increasing with age. During late childhood, studies suggest that lie-telling rates may decline in frequency (Evans & Lee, 2011; Pipe & Wilson, 1994), although over 50% of 11- to 13-year-olds will still lie to conceal a transgression (Evans & Lee, 2011). Given the increased ability to
maintain lies and relatively high rates of lie-telling during middle to late childhood, it is important to find techniques for promoting honesty and increasing disclosure rates.

**Truth induction**

To date, several studies have examined various techniques for increasing children’s disclosures of a transgression including: recognition questions that explicitly mention the transgression, reassurance, external appeals for honesty, and promising to tell the truth. The use of yes-no recognition questions has been found to increase disclosures but it has also been found to elicit some false reports (Ahern, Stolzenberg, McWilliams, & Lyon, 2016). Reassuring the child that telling about what happened will not result in negative consequences has also been found to increase children’s disclosure rates (Lyon & Dorado, 2008; Lyon et al., 2008; Lyon et al., 2014); however, it can be suggestive and cannot be used in many cases as the interviewer often cannot make such a guarantee. Additionally, external appeals for honesty (Talwar, Arruda, & Yachison, 2015), in which the interviewer tells the child they will be happy if the child tells the truth, have been found to be an effective technique for increasing honesty.

Perhaps the most effective tool with extensive empirical support is promising to tell the truth. A number of studies have confirmed positive effects, with no evidence that it increases false reports (e.g., Evans & Lee, 2010; Lyon & Dorado, 2008; Lyon et al., 2008; Talwar & Lee, 2002). However, dishonesty rates still remain high, particularly among older children and adolescents between 8 to 16 years of age (Evans & Lee, 2010) and the efficacy of the promise in eliciting disclosures of transgressions is limited with younger children (Bender, O’Connor, & Evans, 2018; Quas, Stolzenberg, & Lyon, 2018). Moreover, recent evidence suggests that the promise has limited utility in eliciting disclosures from maltreated children when only recall questions are asked (McWilliams, Stolzenberg, Williams, & Lyon, in press).
The putative confession

A promising alternative to the above techniques is the putative confession, in which the interviewer tells the child that the suspect “told me everything that happened” and “wants [the child] to tell the truth.” The putative confession may be motivating for children who have concerns about the perpetrator’s reaction to disclosure. By explaining that the perpetrator already disclosed what has happened and wants the child to tell the truth, children’s fears about disclosing and the pressure to be the first to disclose may be reduced. This approach has been found to increase honesty about a transgression (e.g., breaking toys when playing with a stranger) in response to recall questions among children 4 to 9 years of age, with no differences in efficacy across age (Lyon et al., 2014; McWilliams et al., in press; Quas et al., 2018; Rush et al., 2017; Stolzenberg, McWilliams, & Lyon, 2017).

Although the interviewer claims to know what occurred, which risks suggestion, the interviewer does not specify what the suspect said, emphasizing that the suspect wants the child to be truthful. If a transgression did occur, children can readily infer that the perpetrator disclosed the transgression. However, if no transgression occurred, children can simply interpret the statement as the accused disclosed the truth, that nothing happened. Rush and colleagues (2017) demonstrated that the putative confession is effective even after children were suggestively questioned by a parent, both increasing disclosure of breakage and reducing false reports (falsely reporting playing with toys they did not play with). Questioning children after a delay, Cleveland and colleagues (2018) found that the putative confession combined with suggestive questioning did not increase false reports.

Omission and commission coaching
One aspect of the child-perpetrator interaction that may influence the effectiveness of the putative confession is coaching. Coaching has been defined as “efforts by instigators to encourage and rehearse dishonesty in children” (Lyon et al., 2008). Concerns of coaching often occur in maltreatment cases; the defense often argues that children were coached to make a false allegation (Brennan, 1994) while the prosecution argues that inconsistencies in a child’s statement result from coaching by the accused (Summit, 1983). One can distinguish between two types of coaching: omission coaching, in which the child is coached on what not to say, and what to deny, and commission coaching, in which the child is coached to provide false information. Previous studies examining adult influences on children’s disclosure have typically focused on omission coaching. For example, in many studies, confederates simply asked the child to keep the transgression a secret, and neither rehearsed questions nor provided a false story (e.g., Pipe & Wilson, 1994). Some studies have gone a bit further, and practiced questions with children as well as urged them to claim that the only thing they did was engage in one of the innocuous activities (Lyon et al., 2008; Talwar, Yachison, Leduc, & Nagar, 2018).

A relatively small number of studies have examined commission coaching, in which the child was encouraged to falsify information. Tye, Amato, Honts, Devitt, and Peters (1999) demonstrated that a majority (56%) of 6- to 10-year-olds who witnessed a parent steal a book falsely accused a research assistant of stealing a book after their parent encouraged them to do so. Lyon and colleagues (2008) demonstrated that 82% of maltreated 4- to 9-year-old children falsely recalled that they played with toys after receiving commission coaching. Fogliati and Bussey (2015) found that 80% of 6- to 8-year-old children could be coached to falsely recall that a teacher had ripped a poster.
Commission coaching is particularly important to understand in relation to the putative confession, because commission coaching may influence children’s interpretation of what the suspect told the interviewer. It is possible that such coaching results in children interpreting “everything that happened” as the false story they were coached to report, and thus may undermine the efficacy of the putative confession. This may be particularly important with older children, who could see through the ambiguity of the statement “everything that happened.”

**Leakage**

Leakage refers to the inadvertent disclosure of details that one is inclined to conceal. Previous studies examining leakage among children used a paradigm in which children’s ability to guess the identity of a toy implied that they must have peeked at the toy, because simply hearing the toy would be uninformative. In order to avoid leakage children had to refrain from guessing, recognizing that the interviewer could infer that they must have peeked, which requires theory of mind skills (Evans & Lee, 2011; Talwar, Gordon, & Lee, 2007; Talwar & Lee, 2002; 2008; Williams, Moore, Crossman, & Talwar, 2016). A simpler form of leakage occurs when one discloses details of a transgression one intended to conceal. This implicates source monitoring (one must distinguish between transgressive and non-transgressive behaviors), and is analogous to the Guilty Knowledge test for detecting deception, in which guilty suspects exhibit arousal to details that only the guilty would know (e.g., Ben-Shakhar & Elaad, 2003).

Even if truth induction methods do not induce honesty, they may increase leakage. Leach and colleagues (Leach, Talwar, Lee, Bala, & Lindsay, 2004) found that adults were better able to distinguish between honest and dishonest children when children had completed a moral reasoning task or had promised to tell the truth. The authors proposed that increasing the salience of honesty may have interfered with children’s ability to regulate their behavior, making
their dishonesty more easily detected. We suspected that the putative confession might impair children’s ability to selectively report details of the game they were coached to report and to omit details of the game they were coached to deny.

**Evidence presentation**

Presenting evidence during forensic interviews is often recommended in interviewing protocols for those children who have failed to disclose to initial questions (American Professional Society on the Abuse of Children, 2012; Connell & Finnegan, 2010; National Children’s Advocacy Center, 2013; State of Michigan Governor’s Task Force, 2015). Although children are often the only witnesses to their abuse, an increasing number of child sexual abuse cases began with interactions over the internet (Kloess, Beech, and Harkins, 2014), and there is often evidence of these interactions (Katz, Piller, Glucklich, & Matty, 2018). However, no research has examined the influence of presenting evidence on children’s disclosures, and it is important to consider if it increases false allegations (Lytle, Dickinson, & Poole, 2019).

**Maltreatment differences**

Research examining children’s transgressions has sometimes revealed greater reluctance among maltreated children to disclose. Talwar and Lee (2011) found that 3- to 4-year-olds in a physically punitive school environment were significantly less likely to acknowledge peeking at a toy (after being admonished not to peek) compared to children in a school that did not use corporal punishment. McWilliams et al. (in press) found that maltreated 4- to 9-year-olds were less likely than non-maltreated children to disclose having broken toys while playing with a stranger (and being admonished not to tell), while earlier studies did not report any differences (Lyon et al., 2014; Stolzenberg, McWilliams, & Lyon, 2017) or noted non-significant tendencies
toward less disclosure among maltreated children (Ahern, Stolzenberg, McWilliams, & Lyon 2016; Quas, Stolzenberg, & Lyon, 2018).

**The present study**

The present study examined the influence of the putative confession and evidence presentation on 9 to 12-year-old maltreated and non-maltreated children’s coached reports of a minor transgression. Children played with a confederate on a computer. Half of the children were randomly assigned to the Break condition in which the game appeared to cause the computer to crash, and the confederate confessed they were not supposed to play the game. This interaction mimics an abuse situation where the child is convinced by an adult to engage in an activity that the child does not initially understand is wrong. The confederate coached children in the Break condition to conceal four Played Game details (omission coaching) and falsely report four Not-played Game details (commission coaching). The other half of children were assigned to the No-Break condition in which no transgression occurred.

Children were then interviewed in either the putative confession or control interview condition. The interview included open-ended recall questions followed by 20 yes-no recognition questions (eight inquired into Played Game details, eight into Not-played Game details, and four inquired into details that did not appear in either game), a mid-interview pause, and finally presentation of evidence that the transgression occurred (the error message on the computer screen).

We predicted that consistent with prior research older children would be more likely to disclose the transgression than younger children, and that the putative confession would increase disclosures (without increasing false disclosures) among all children. However, we anticipated that the putative confession might be less effective for older children, who could see through the
ambiguity of “told me everything that happened” or interpret it as referring to the coached false report. We anticipated that omission and commission coaching would enable children to avoid disclosing the details of the game they played and falsely disclose details of the game they did not play, though we predicted that the putative confession would lead to increased leakage of details about the played game. We predicted that the presentation of evidence of the transgression would result in additional true disclosures without an increase in false disclosures. Finally, we assessed whether maltreated children were less likely than non-maltreated children to disclose breakage.

**Method**

**Participants**

A total of 321 9- to 12-year-olds ($M = 10.50$, $SD = 1.12$, 153 males) participated in this study. Approximately half of all children were maltreated ($N = 161$; this included 80 9-10-year-olds, $M = 9.50$ years, $SD = .50$, 38 males and $N = 81$ 11-12-year-olds, $M = 11.51$ years, $SD = .50$, 41 males).

The maltreated sample consisted of children from the Los Angeles County dependency court who had been removed from the custody of their parents or guardians for substantiated cases of abuse or neglect. Because children had been removed from parental care, the Presiding Judge of Juvenile Court granted consent for all children in the maltreated sample. Maltreated children were ineligible if they were awaiting adjudication or contested disposition hearing on the date of testing (because they might be asked to testify) or if interpreter services were provided to their family and they were incapable of communicating with the researchers in English. Children were primarily from ethnic/racial minority backgrounds: 56% Latino, 28% African American, 8% Caucasian, and 8% other.
The non-maltreated sample consisted of children \( N = 160 \); this included 80 9-10-year-olds, \( M = 9.5, SD = .50 \), 39 males, and 80 10-11-year-olds, \( M = 11.51, SD = 5.0 \), 35 males) recruited from schools in nearby predominantly low-income ethnic minority neighborhoods. Children were primarily from ethnic/racial minority backgrounds comparable to the maltreated sample: 54% Latino, 41% African American, 2% Caucasian, and 3% other. Written consent was obtained from all non-maltreated children’s parents prior to participating. All study procedures were approved by the University of Southern California Institutional Review Board (approval number: UP-11-00146, Title: Facilitating Children’s Disclosures).

**Procedure**

**Transgression paradigm.** All children were invited to participate in the study and their assent was obtained prior to commencing. The session began with the child completing several tasks, unrelated to the present investigation, with the female interviewer for approximately ten minutes. Upon the completion of the tasks a male confederate entered the room and said that they were there to complete the video game activity. The female interviewer introduced the child to the confederate and excused herself from the room to complete some other work. She explained that when she returned she would ask the child some questions about the game they played with the confederate. The confederate then opened the laptop and oriented the child to the two possible games: The Ball game or the Jewel game.

All children were assigned to one of two Transgression conditions: Break or No-Break. In the Break condition, the confederate told the child that they were supposed to play one game, but that he had played that game so many times he wanted to play the other game instead. The game played (Ball or Jewel) was counterbalanced between participants to ensure that interviewers were blind as to the game the child had played, and to control for possible
differences in memorability or plausibility of game details. While playing the game the confederate pointed out 8 target details (e.g., “Check out the birds.”) to ensure children noticed each of the details that they would later be questioned about. After playing the game for 2 minutes, the confederate instructed the child to click on a square that, unbeknownst to the child, was programmed to cause the computer to appear to crash (a blue error screen appeared). The confederate then confessed to the child that he forgot that they were not supposed to play that game because it crashes the computer and all the data was now lost. The confederate then told the child that the lady [the female interviewer], who was his boss, would be coming back in to ask the child about the game. The confederate asked the child not to tell the lady that they played that game, coached the child to conceal 4 of the target details ( omission coaching, e.g., “Don’t say that there were birds”) and to falsify 4 details about the game they were supposed to have played (commission coaching, e.g., “Say you saw blocks falling”), and then put the computer away.

In the No-Break condition, children played the appropriate video game (Ball or Jewel counterbalanced between participants) and the game did not crash. While playing the game, the confederate pointed out the same 8 target details as the Break condition. After playing the game, the confederate put the computer away and told the child that the lady, who was his boss, would be coming in to ask the child about the game and thanked the child for playing with him.

**Interview**

The rapport and recall phases of the interview were based on the NICHD Protocol, an international evidence-based investigative interviewing strategy for children (Lamb, Orbach, Hershkowitz, Esplin, & Horowitz, 2007). The recall phase was then followed by a series of yes-
no recognition questions and the presentation of evidence. Each phase of the interview is described in detail below.

**Rapport phase.** The same female interviewer from the start of the session then re-entered the room. The interview began with a rapport phase in which the child was asked to talk about the last time she felt really good or bad at school. The interviewer asked the child to tell everything that happened from the very beginning to the very end. The interviewer used facilitators (e.g., uh-huh) until the child completed her initial narrative and then followed up with “You said [action/verb the child reported]. Tell me more about [action/verb the child reported].” The rapport phase lasted for 2 minutes.

**Recall.** All children were assigned to one of two instruction conditions: Control or Putative Confession. Children in each instruction condition were matched for age and Transgression condition (Break vs. No-Break). Children in the Control condition received the following instruction, “Now that I know you a little better, [child’s name], tell me everything that happened while I was out of the room from the very beginning to the very end.” Children in the Putative Confession condition were told, “Now that I know you a little better, [child’s name], let me tell you something. The man, [confederate’s name], who came in here, told me everything that happened and he said he wants you to tell the truth. Tell me everything that happened while I was out of the room from the very beginning to the very end.” The interviewer used facilitators until the child completed her initial narrative. The child was asked to narrate the “first thing that happened” followed by a series of “what happened next” prompts until the child exhausted her narrative. On average children were asked 2.75 “what happened next” prompts ($SD= 2.35$). The interviewer then used two follow-up open-ended prompts (e.g., “You said [action/verb]. Tell me more about [action/verb].”). For the two follow-up open-ended prompts, if
the child mentioned the computer, the interviewer followed up on any action/verbs that were related to the computer. If children did not say anything about the computer, the interviewer followed up on an action/verb central to the child’s report. Finally, children were asked to tell the interviewer everything they heard (“Tell me everything you heard while I was gone”) and everything they saw (“Tell me everything you saw on the computer while I was gone”).

**Yes-No recognition questioning.** Children were asked 20 yes-no recognition questions about the target items from the games (e.g., “Did birds fly across the screen?” See Appendix A for a full list of questions). Eight Played Game questions were from the game they played, 8 Not-Played Game questions were about the game they did not play, and 4 Non-Occurring questions were about items that did not occur in either game (e.g., “Was there a dog in the video game?”). For children in the Break condition, 4 Played Game questions were items they were coached to conceal and 4 Not-Played Game questions were items they were coached to falsify.

**Mid-Interview Pause.** After completing the closed-ended questions, in an attempt to see if non-disclosers would decide to disclose if given a moment alone to reflect, the interviewer said, “Now, I want to make sure I understood everything and see if there is anything else I want to ask. I will just go over my notes outside and come back in. Think about if there is anything else you want to tell me.” The interviewer then exited the room for two minutes. When the interviewer returned she said to the child, “Okay. Hi, [child’s name]. Did you think of anything while I was gone?” and used facilitators until the child completed any additional narrative.

**Evidence presentation.** The interviewer then presented the child with the blue error screen on the laptop. Since children in the No-Break condition did not break the computer, as the confederate left the room he inconspicuously set up the laptop to present the same blue screen with an error message as the Break condition when the interviewer opened the laptop. This kept
the interviewer blind to the child’s condition and allowed for assessing whether evidence presentation would elicit false reports. The interviewer stated, “Okay, I am just going to look at the activity you did while I was gone on my computer” and opened the laptop to reveal the blue error screen. The interviewer then asked the child “What happened?” followed by “Tell me more about that” in response to any statement the child made. See Figure 1 for the order of the procedure and Table 1 for the participant distribution across conditions.

Debriefing. All children were fully debriefed about the nature of the study. The confederate also told all children that it was his fault that the computer crashed and that it could be fixed. Children in all conditions were thanked for their time and for helping the experimenters learn about how to talk to children and asked if they had any questions. Finally, all children selected a small toy for participating in the study.
Figure 1. Procedure diagram
Table 1. Mean age (SD) in years and N by Age group, Transgression condition, Instruction condition, and Maltreatment status

<table>
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<tr>
<th>Age Group</th>
<th>Transgression</th>
<th>Instruction</th>
<th>Maltreated</th>
<th>Non-Maltreated</th>
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<tr>
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<tr>
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<td>Break</td>
<td>Control</td>
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Coding

Research assistants transcribed and coded all transcripts for whether children disclosed the transgression. Any mention of the computer crashing, breaking, freezing, a blue screen, or reference to having played a forbidden game was coded as a disclosure (0 = no disclosure, 1 = disclosure), and when the child disclosed during the interview was also recorded (rapport, recall, yes-no recognition questions, after the mid-interview pause, or after evidence presentation). We also coded for the number of target details children reported about the game they played and the number of target details they reported about the game they did not play (excluding duplicate details) during recall. For children in the Break condition, a dichotomous leakage variable was created such that 0 = no leakage of details from the game played and 1 = leakage of game played (e.g., reporting any target details about the forbidden game). Inter-rater reliability was calculated on 10% of the data with Kappas of 1.00 for the disclosure and leakage variables.

Finally, children’s responses to the yes-no questions were coded for whether the child provided an affirmative response (“yes” or non-verbal nod). Five yes-no question scores were created: Played Game Coached (mean number of affirmative responses to questions about the game they played and were coached to deny), Played Game Not Coached (mean number of affirmative responses to questions about the game they played and were not coached about), Not-Played Game Coached (mean number of affirmative responses to questions about the game they did not play but were coached to report), Not-Played Game Not Coached (mean number of affirmative responses to questions about the game they did not play and were not coached about), and Non-Occurring (mean number of affirmative responses to questions about items that did not occur in either game). Although children in the No-Break condition were not coached, scores were created to match the question items in each of these categories (e.g., a Played Game
Coached score was created using the same question items that were coached in the Break condition to control for any item-specific response patterns. Inter-rater reliability was calculated on 10% of the data for each of the yes-no questions with Kappas greater than .93 for all questions with the exception of three questions (one from the Jewel game, one from the Ball game, one from neither game) with Kappas greater than .85. All discrepancies were discussed and resolved between raters.

**Results**

We first examined whether children disclosed breakage and what factors influenced disclosure. Next, we examined the details reported by Concealers (those who concealed the transgression in the Break condition) compared to Truthful Deniers (children in the No-Break condition) in response to the recall and yes-no recognition questions.

Children in the Break condition were asked more “what happened next” prompts during recall (M = 3.03, SD = .188) than children in the No-Break condition (M = 2.47, SD = 1.84), F(1, 289) = 4.67, p = .032), and thus the number of prompts were included in the preliminary analyses, but did not influence any of the results. Furthermore, preliminary analyses found no differences due to maltreatment, ethnicity, or gender. Thus, these variables were excluded from all reported analyses.

**Disclosure**

No children in the No-Break condition falsely disclosed that the computer had broken. Thus, the following disclosure analyses focus on children in the Break condition (N = 157). 80% (n = 126/157) of children in the Break condition disclosed prior to debriefing (1 during rapport, 72 during recall, none during the yes-no recognition questions, 1 after the mid-interview pause,
and 52 after evidence presentation). Thus, 20% of children in the Break condition remained concealers across all phases of the interview.

We began by examining the rate of disclosures during recall by instruction condition, excluding the child who disclosed during rapport and had therefore disclosed before instructions (Figure 1). Overall, 46% (n = 72/156) of children disclosed during recall. A binary logistic regression was performed with disclosure of breakage during recall as the predicted variable and Age group (9-10, 11-12), Instruction condition (Control, Putative Confession), and the Age by Instruction condition interaction as the predictors. The model was significant, $\chi^2(3, 156) = 27.41$, $p < .001$, Nagelkerke $R^2 = .214$. Only the Age by Instruction condition interaction significantly contributed above and beyond the common contribution of all other variables in the model, $B = 1.82$, Wald(1) = 6.04 $p = .014$, odds ratio = 6.13.

Follow-up Pearson Chi-squared analyses comparing potential condition differences for each age group revealed that 9- to 10-year-olds were significantly more likely to disclose the transgression in the Putative Confession condition (62%) compared to the Control condition (13%), $\chi^2(1, 78) = 21.10$, $p < .001$, Cramer’s $V = .622$, whereas there were no significant condition differences among the 11- to 12-year-olds, $\chi^2(1, 78) = 1.58$, $p = .210$, Cramer’s $V = .179$ (63% disclosure in the Putative Confession condition compared to 48% in the Control condition). Additionally, follow-up Pearson Chi-squared analyses comparing potential age differences for each condition revealed a significant age difference in the Control condition, $\chi^2(1, 79) = 11.23$, $p = .001$, Cramer’s $V = .41$, indicating that the 11- to 12-year-olds were significantly more likely to disclose in the Control condition (48%) compared to the 9- to 10-year-olds (13%). However, there was no significant age difference in the rate of disclosure in the Putative Confession condition, $\chi^2(1, 77) = .021$, $p = .88$, Cramer’s $V = .073$ (see Figure 2).
Figure 2. The percentage of children in the Break condition ($n = 156$) who first disclosed during the recall phase of the interview by Instruction condition and Age group.

Next, we examined children’s disclosure rates in response to evidence presentation. 63% ($n = 52$) of the children who failed to disclose after both recall and yes/no questions ($n = 83$) disclosed in response to being shown the broken computer, and no child falsely acknowledged breakage in the No-Break condition. First disclosure during the evidence presentation (0 = no disclosure, 1 = disclosure of breaking the computer) was entered as the predicted variable and Age group (9-10, 11-12), Instruction condition (Putative Confession, Control) and the Age by Instruction condition interaction as predictors. The model was not significant, $\chi^2(3, 83) = 4.09$, $p = .251$, Nagelkerke $R^2 = .065$. Hence, regardless of whether children had heard the putative confession, they were equally likely to confess when presented with evidence, and not inclined to falsely confess.

Comparing Concealers and Truthful Deniers

Reporting of Played Game details in recall. We first examined whether concealers during recall in the Break condition ($n = 84$) reported significantly fewer Played Game details
compared to children in the No-Break condition \((n = 164)\). A 2 Transgression condition (Break vs. No-Break) \times 2\) Age Group \((9-10, 11-12)\) \times 2 Instruction condition (Putative Confession, Control) Univariate ANOVA was performed with Transgression condition, Age Group and Instruction condition as the between subject factors and the number of Played Game details that were reported as the dependent variable. There was a significant main effect of Transgression condition, \(F(1, 240) = 312.56, p < .001, \eta^2_p = .57\), with children in the Break condition reporting significantly fewer Played Game details \((M = .66, SD = 1.35, 8\%)\) compared to children in the No-Break condition \((M = 6.64, SD = 2.82, 83\%)\). No other main effects or interactions were significant.

**Reporting of Not-Played Game details in recall.** Next, we examined whether concealers during recall in the Break condition \((n = 84)\) reported significantly more details about the game they did not play (Not-Played Game details) compared to children in the No-Break condition \((n = 164)\). A 2 Transgression condition (Break vs. No-Break) \times 2\) Age Group \((9-10, 11-12)\) \times 2 Instruction condition (Putative Confession, Control) Univariate ANCOVA was performed with Transgression condition, Age Group, and Instruction condition as between subject factors and the number of Not-Played Game details that were reported as the dependent variable, covarying the total number of follow-up prompts. Again, a significant main effect of Transgression condition was found, \(F(1, 240) = 573.74, p < .001, \eta^2_p = .71\), with concealers in the Break condition reporting significantly more Not-Played Game details \((M = 6.13, SD = 3.06, 38\%)\) compared to children in the No-Break condition, who almost never reported Not-Played Game details \((M = .02, SD = .14)\). In fact, only three children (2%) in the No-Break condition reported a detail that was considered a Not-Played game detail.
Leakage of Played Game details during recall. A logistic regression was performed on whether concealers ($n = 84$) leaked information about the forbidden game during recall (0 = no leakage, 1 = leakage) with Age group (9-10, 11-12), Instruction condition (Putative Confession, Control), and an Age x Instruction condition interaction entered as predictors. The model was significant, $\chi^2(3, 84) = 8.37, p = .039$, Nagelkerke $R^2 = .148$, with Instruction condition, $B = 2.17$, Wald(1) = 7.42, $p = .006$, and the Age x Instruction condition significantly contributing above and beyond all other variables in the model, $B = -2.31$, Wald(2) = 4.022, $p = .045$. Follow-up Pearson Chi-squared analyses by Age Group revealed that there was no significant difference in leakage rates between the Control (24%) and Putative Confession (21%) conditions for 11-12-year-olds. However, 9- to 10-year-olds in the Putative Confession condition (47%) were significantly more likely to leak details of the forbidden game during the recall question phase, compared to the Control condition (9%), $\chi^2(1, 48) = 8.83, p = .003$, Cramer’s $V = .429$.

Yes-No Played Game questions. We examined whether there were differences in children’s reporting of Played Game details between concealers in the Break condition ($n = 84$) and children in the No-Break condition ($n = 164$) in response to yes-no recognition questions. We also assessed whether the coaching of 4 details to conceal and 4 details to report in the Break condition accentuated any potential differences (Figure 3). A 2 Transgression condition (Break vs. No-Break) x 2 Coaching (Coached vs. No Coach) x 2 Age Group (9-10, 11-12) x 2 Instruction condition (Putative Confession, Control) repeated measures ANOVA was performed with Transgression condition, Age Group and Instruction condition as between subject factors, Coaching as a repeated within subject factor and endorsement of Played Game details (means out of 4) as the dependent variable. Although no coaching occurred in the No-Break condition, the
same items that were coached in the Break condition were used as a baseline comparison from
the No-Break condition.

Significant main effects of Coaching, $F(1, 240) = 8.62, p = .004, \eta^2_p = .035$, and
Transgression condition, $F(1, 240) = 1043.65, p < .001, \eta^2_p = .814$, were qualified by a significant
Coaching by Transgression condition interaction, $F(1, 240) = 12.52, p < .00, \eta^2_p = .050$. Separate
follow-up repeated measures ANOVAs were performed for the Break and No-Break conditions.
For the Break condition, concealers were significantly less likely to affirm Game Played details
that they were coached to conceal ($M = .57, SD = 1.02, 14\%$) compared to Game Played details
they were not coached to conceal ($M = 1.02, SD = 1.07, 25\%$), $F(1, 79) = 11.62, p = .001, \eta^2_p = .128$. For the No-Break condition, no significant differences were found in the rate of affirming
Game Played details based on whether they were items that were coached in the Break condition
($M = 3.67, SD = .58, 92\%$) or not coached in the Break condition ($M = 3.63, SD = .59, 91\%$),
$F(1, 160) = .344, p = .558, \eta^2_p = .002$, confirming that any potential coaching effects were not due
to the types of items that were coached or not coached. No other significant main effects or
interactions were found.
**Figure 3.** The Mean number of affirmative responses for Played Game Questions and Not-Played Game Questions by Transgression condition and Coaching.

*Note: Children in the No-Break condition did not receive any coaching. The Coached Details refers to those details corresponding to the details that children in the Break condition were coached about.

Yes-No Not-Played Game questions. Next, we examined whether concealers in the Break condition ($n = 84$) were more likely to endorse details about the game they did not play compared to children in the No-Break condition ($n = 164$). Additionally, we assessed whether coaching accentuated any potential differences (Figure 3). A 2 Transgression condition (Break vs. No-Break) x 2 Coaching (Coached vs. No Coach) x 2 Age Group (9-10, 11-12) x 2 Instruction condition (Putative Confession, Control) repeated measures ANOVA was performed with Transgression condition, Age Group, Instruction condition as between subject factors, Coaching as the repeated measure, and affirmative responses to Not-Played Game questions (means out of 4) as the dependent measure. Again, although no coaching occurred in the No-
Break condition, the same items that were coached in the Break condition were used as a baseline comparison for the No-Break condition.

Significant main effects of Coaching, $F(1, 240) = 72.30, p < .001, \eta^2_p = .231$, and Transgression condition, $F(1, 240) = 219.77, p < .001, \eta^2_p = .478$, were qualified by a Coaching by Transgression condition interaction, $F(1, 240) = 205.57, p < .001, \eta^2_p = .461$. Separate follow-up repeated measures ANOVAs were performed for the Break and No-Break conditions. In the Break condition, concealers were significantly more likely to endorse Not-Played Game details that they were coached to report ($M = 3.46, SD = .85, 87\%$) compared to Not-Played Game details that they were not coached to report ($M = 1.52, SD = 1.21, 38\%), F(1, 80) = 164.16, p < .001, \eta^2_p = .672$. In the No-Break condition, children were significantly less likely to endorse Not-Played Game details that children in the Break condition were coached to report ($M = .69, SD = .81, 17\%)$ than Not-Played Game details that children in the Break condition were not coached to report ($M = 1.20, SD = 1.02, 30\%), F(1, 160) = 29.56, p < .001, \eta^2_p = .156$. This suggests that the coached items were less likely to be confused with true game details compared to non-coached items. No other significant main effects of interactions were found.

**Yes-No Non-Occurring Game questions.** Finally, we examined whether there were any differences in false alarming to questions about items that did not occur in either game. A 2 Transgression condition (Break vs. No-Break) x 2 Age Group (9-10, 11-12) x 2 Instruction condition (Putative Confession, Control) Univariate ANOVA was performed with Transgression condition, Age Group, and Instruction condition as the between subject factors and affirmative responses to Non-Occurring game questions (means out of 4) as the dependent variable.
A significant main effect of Transgression condition was found, $F(1, 240) = 19.02, p < .001$, $\eta^2_p = .137$. Concealers in the Break condition were significantly more likely to affirm Non-occurring Game details ($M = .88$, $SD = .97$, 22%) compared to children in the No-Break condition ($M = .27$, $SD = .51$, 6%). No other main effects or interactions were significant.

**Discussion**

The aim of the present investigation was to assess the potential influence of the putative confession and evidence presentation on 9- to 12-year-old maltreated and non-maltreated children’s coached reports of a minor transgression. Children played a computer game with a stranger, and when the game appeared to crash, they learned that they should not have played the game, and were coached to both conceal details of the game they played (omission coaching) and falsify details of the game they had not played (commission coaching). Only 13% of the younger children (9- to 10-year-olds) revealed breakage when questioned, compared to 48% of the 11- to 12-year-olds. In other words, nearly 90% of the younger children kept the breakage a secret, and about half of the older children did so.

The putative confession significantly increased the disclosure rate among the younger children (from 13% to 63%), but did not significantly influence the older children (from 48% to 63%). Among children who failed to disclose during recall, the putative confession increased the likelihood that the younger children leaked details of the game in their recall (from 9% to 47%). Presentation of evidence elicited new disclosures of breakage from almost two-thirds of the children (63%), and it was equally effective among age groups and interview conditions. Maltreated children responded similarly to the manipulations as non-maltreated children. No child falsely disclosed breakage.
Both omission and commission coaching were effective in enabling concealers to make their reports appear honest, both in recall and in response to the yes-no questions. Coached children concealed and denied details of the game they played, endorsed details of the game they failed to play, and showed some inclination to endorse non-coached details.

Age effects

The developmental increase in truth-telling regarding transgressions is consistent with previous experimental studies examining children during late childhood into adolescence (Evans & Lee, 2010; 2011; Heyman, Loke, & Lee, 2016; Lavoie, Yachison, Crossman, & Talwar, 2017; McWilliams et al., in press; Pipe & Wilson, 1994), and extends these findings to commission coaching in which the child is coached to falsify details to deceive the questioner. This increased honesty has been suggested to be related to an increase in children’s moral development and the importance placed on truth-telling with age (e.g., Bussey, 1992; 1999). In addition, older children may fear the consequences of truth-telling less than younger children.

An important caveat, however, is that this age pattern may not apply to children’s disclosures of transgressions implicating those close to them, including parents. Gordon and colleagues (2016) found that 97% of 10- to 12-year-olds failed to disclose that their parent had broken a toy in recall (after promising not to tell), and the oldest children were less likely to disclose than younger children. Familial relations may radically alter the dynamics of children’s decision making about disclosing wrongdoing.

The putative confession

The effects of the putative confession on the younger children is consistent with a series of studies demonstrating that the putative confession elicits recall disclosures of transgressions among both maltreated and non-maltreated children from four to nine years of age (Lyon et al.,
2014; McWilliams et al., in press; Quas et al., 2018; Rush et al., 2017; Stolzenberg, McWilliams, & Lyon, 2017). This study extends upwards the age for which the putative confession is effective, and in addition demonstrated its efficacy in the face of commission coaching. The fact that children in the No-break condition receiving the putative confession never made a false report, even after being shown false evidence that the computer crashed, is consistent with prior research finding that the putative confession is not suggestive when combined with suggestive questions (Cleveland et al., 2018; Rush et al., 2017). The efficacy of the putative confession in eliciting recall disclosures across this age range and in both maltreated and non-maltreated children is particularly remarkable given recent evidence that a promise to tell the truth appears less effective in influencing preschool children’s reports (Bender et al., 2018; Quas et al., 2017), and may need to be combined with more direct questioning (such as repeated recall requests or recognition questions) to elicit disclosure of transgressions from maltreated children (McWilliams et al., in press).

The failure of the putative confession to elicit increased disclosures from 11- to 12-year-old children may be attributable to the older children’s greater sophistication in interpreting the instruction. Older children are more aware of referential ambiguity (Beal & Flavell, 1984), and thus may have seen through the ambiguity of “everything that happened,” recognizing that the interviewer did not explicitly say that the confederate had disclosed the transgression. Furthermore, since the confederate engaged in commission coaching, older children may have assumed that when the confederate told the experimenter “everything,” this entailed reciting the false report. Future studies are needed to assess whether older children are unmoved by the putative confession across the board or whether commission coaching specifically undermines its efficacy.
Leakage

An interesting question is why the putative confession increased leakage among the younger children. As noted in the introduction, Leach and colleagues (2004) found that when children had promised to tell the truth, or had discussed the morality of lying, their subsequent lies were better detected by adults. The authors were unable to identify any specific behavior that differentiated the groups of children, but they speculated that “increasing the salience of the moral implications of lying may have interfered with children’s ability to regulate their expressive behavior” (p. 672).

Similarly, the putative confession may have interfered with children’s ability to control their leakage of incriminating details. According to the Cognitive Load Approach of lie-detection (Blandon-Gitlin et al., 2014; Vrij & Granhag, 2012; Walczyk et al., 2014), lying is cognitively more demanding than truth-telling. Therefore, increasing the cognitive load of a respondent will be more detrimental to a liar than a truth-teller, resulting in increased leakage. Alternatively, the putative confession’s reference to “everything that happened” may have increased concealing children’s uncertainty about the story they should report. In order to better understand the mechanism, future research could compare the effects of the putative confession to tasks that more generally increase cognitive load.

Evidence presentation

Presenting children with evidence of breakage was remarkably effective in eliciting disclosures from most of the children who had been keeping breakage a secret, at the same time that it did not lead any children to false alarm. Importantly, we did not combine evidence presentation with highly suggestive questioning. The interview progressed from open-ended questions (including “what happened,” “what happened next” and requests to “tell me more”
about details”) to yes/no questions about specific details. Similarly, with respect to the honesty promotion techniques, we began with the more indirect approach of the putative confession followed by presenting physical evidence of the transgression. This approach provided the child with the opportunity to disclose without the need for presenting evidence. Importantly, when evidence was presented, it was not coupled with highly suggestive questions, but with the simple query “What happened?”

We conducted the interview immediately after the transgression in order to assess children’s reluctance to disclose, free of memory failure. However, to ensure that evidence presentation does not have adverse effects on children’s reports, future research should assess its effects on children’s reports after a delay, when children may be less certain about what occurred and thus more susceptible to accept false evidence (Cf. Kassin & Keichel, 1996, in which adult subjects could be induced to confess they had inadvertently crashed a computer).

**Omission and commission coaching**

Children who concealed breakage were quite good at concealing evidence of the fact that they had played the forbidden game. In recall, truthful children (in the No-break condition) mentioned 83% of the game details, whereas concealers mentioned only 8%. In recognition, truthful children affirmed over 90% of the game details, whereas concealers affirmed only 14% of the details they had been coached to deny. Children were even better at falsifying information. Not surprisingly, none of the truthful children mentioned details of the game they hadn’t played in recall, but concealers mentioned 38%. In recognition, truthful children false alarmed to 17% of the details that had been used for coaching, whereas concealers affirmed nearly 90%.
Coaching children to conceal details is analogous to directed forgetting tasks in which children are taught to forget word lists. Previous research has suggested that children struggle with directed forgetting (see Wilson & Kipp, 1998 for a review), however, children in our study quite successfully concealed specific information. One possible explanation for this finding is that the stakes were higher in our paradigm compared to the tasks used in directed forgetting. Support for this argument comes from Aslan, Staudigl, Samenieh, and Bäuml (2010), who found that children as young as six years old demonstrated adult-like directed forgetting if the researcher showed children a list of words, and then became flustered, said she made a mistake, and asked them to forget the list. Of course, this research suggests that with added delays, details children were coached to omit might also be forgotten.

**Conclusion**

The results add to a growing body of research that both demonstrates children’s reluctance to disclose transgressions, and identifies means by which interviewers can elicit disclosures without resorting to unnecessary direct and leading questioning. Of course, field testing is necessary, as is the careful discussion of the ethics of different techniques, including the putative confession and evidence presentation. Furthermore, this study highlights the need for further work on truth induction techniques that are resistant to the influence of coaching and that are effective with older children.
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## Appendix A: Yes-No Questions

<table>
<thead>
<tr>
<th>Yes-No Question</th>
<th>Game</th>
<th>Items Coached</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did you see a bug on the computer game?</td>
<td>Ball Game</td>
<td>Coached</td>
</tr>
<tr>
<td>Did you click the green button on the computer?</td>
<td>Ball Game</td>
<td>Coached</td>
</tr>
<tr>
<td>Did you see balls rolling across the screen?</td>
<td>Ball Game</td>
<td>Coached</td>
</tr>
<tr>
<td>Did birds fly across the screen?</td>
<td>Ball Game</td>
<td>Coached</td>
</tr>
<tr>
<td>Was there fire at the start of the game?</td>
<td>Ball Game</td>
<td></td>
</tr>
<tr>
<td>Were there golden wings on the computer?</td>
<td>Ball Game</td>
<td></td>
</tr>
<tr>
<td>Did you see the stairs in the game?</td>
<td>Ball Game</td>
<td></td>
</tr>
<tr>
<td>Were there puddles of water on the screen?</td>
<td>Ball Game</td>
<td></td>
</tr>
<tr>
<td>Did you see little people at the bottom of the screen?</td>
<td>Jewel Game</td>
<td>Coached</td>
</tr>
<tr>
<td>Was music coming from the computer?</td>
<td>Jewel Game</td>
<td>Coached</td>
</tr>
<tr>
<td>Did you click the computer mouse?</td>
<td>Jewel Game</td>
<td>Coached</td>
</tr>
<tr>
<td>Were there blocks falling from the top of the screen?</td>
<td>Jewel Game</td>
<td>Coached</td>
</tr>
<tr>
<td>Was there a timer on the screen?</td>
<td>Jewel Game</td>
<td></td>
</tr>
<tr>
<td>Were there clouds in the sky on the game?</td>
<td>Jewel Game</td>
<td></td>
</tr>
<tr>
<td>Was there grass in the game?</td>
<td>Jewel Game</td>
<td></td>
</tr>
<tr>
<td>Did you see jewels on the computer?</td>
<td>Jewel Game</td>
<td></td>
</tr>
<tr>
<td>Did the lights go out in the room?</td>
<td>Non-Occurring</td>
<td></td>
</tr>
<tr>
<td>Did you see a picture of an oven?</td>
<td>Non-Occurring</td>
<td></td>
</tr>
<tr>
<td>Did [confederate’s name] shake your hand?</td>
<td>Non-Occurring</td>
<td></td>
</tr>
<tr>
<td>Was there a dog in the video game?</td>
<td>Non-Occurring</td>
<td></td>
</tr>
</tbody>
</table>