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**Tele-Forensic Interviewing Can Be a Reasonable Alternative to Face-to-Face Interviewing
of Child Witnesses**

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The data are available at <https://osf.io/942av/>

The experiment materials are available at <https://osf.io/942av>

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Abstract

Objective: Tele-forensic interviews have the potential to aid child maltreatment investigations when witnesses live far from interviewers, there is a risk of disease transmission, or investigations would benefit from expertise that is not locally available. However, it is currently unknown whether tele-forensic interviewing is an effective alternative to face-to-face interviewing, particularly for children most prone to suggestibility and lapses of attention.

Hypotheses: Previous studies suggested that school-aged children would provide similar amounts of information across interview modes but provided no basis for predicting how misinformation before interviews would impact accuracy across modes or how 4- and 5-year-olds would react to tele-forensic interviewing. **Method:** Children (4–8 years, $N = 261$, $M_{\text{age}} = 6.42$ years, 48% female) interacted with male assistants who violated a no-touching rule, parents read children a book containing misinformation about that event, and female assistants conducted interviews (usually 2 weeks after the event) face-to-face or via a video conference application. **Results:** The children were more talkative during a practice narrative phase when interviewed face-to-face rather than on screen ($IRR = 1.26$, $CI [1.06, 1.51]$), and 4-, 5-, and 6-year-olds said more in response to open-ended prompts when interviewed face-to-face ($IRR = 1.50$, $CI [1.08, 2.09]$). Children younger than 7 years also disclosed the face touch and noncompleted handshake in response to earlier and less directive prompts when interviewed face-to-face, $r_s(53) = .28$, $p = .037$, and $r_s(48) = .33$, $p = .021$, respectively. Children 8 years and older, however, disclosed the face touch more readily when they spoke on screen, $r_s(28) = -.38$, $p = .036$, and older 7-year-olds and 8-year-olds disclosed the noncompleted handshake more readily on screen, $r_s(30) = -.36$, $p = .042$. Across interview modes, children reported comparable numbers of touch events, however, and were equally accurate on challenging source-monitoring

and detail questions. **Conclusions:** Tele-forensic interviewing can be a reasonable alternative to face-to-face interviewing.

Keywords: forensic interviewing, children, tele-forensic interviewing, video conferencing, child witness

Public Significance Statement: Face-to-face and tele-forensic (on screen) interviews elicit similar amounts of accurate and inaccurate information from child witnesses. Thus tele-forensic interviews can be a reasonable alternative to face-to-face interviews when there is a need for social distancing or when expert interviewers are not available locally.

A Comparison of Children's Eyewitness Testimony in Face-to-Face and Tele-Forensic Interview Modes

Decades of studies on children's eyewitness testimony have produced widespread consensus regarding many fundamental standards for conducting forensic interviews of children (American Professional Society on the Abuse of Children, 2012; Lamb et al., 2018; Newlin et al., 2015). Today, professionals in child protection, law enforcement, law, and medicine learn about these standards through an array of training opportunities, some involving web-based components that facilitate outreach across vast geographic distances (Benson & Powell, 2015). But despite advances in policy and training, many children live in regions that lack interviewing expertise and are geographically isolated from jurisdictions that employ trained interviewers. In the U.S. alone, over 60 million people (13.4 million under the age of 18) live in rural areas, many of which lack access to sufficient health care, including the specialized resources needed to investigate child abuse and other crimes involving child witnesses (U.S. Census Bureau, 2016; U.S. Department of Health and Human Services, 2014).

One way to provide access to high-level investigative skill is to conduct tele-forensic (video conference) interviews when needed expertise is not available locally. Tele-forensic interviews also offer an alternative delivery mode when children or their caregivers have a communicable disease, during community disease outbreaks, after natural disasters, and when children are out of local jurisdiction. Indeed, there was a surge of activity to establish guidelines for tele-forensic interviewing during the early months of the COVID-19 pandemic, when child advocacy centers and policy groups issued preliminary recommendations designed to reduce exposure of interviewers, children, and their families to the SARS-CoV-2 virus (National Children's Alliance, 2020; State of Michigan Governor's Task Force on Child Abuse and Neglect

and Department of Health and Human Services, 2020; Veith et al., 2020).

The adoption of tele-forensic interviewing during the COVID-19 pandemic followed earlier efforts that expanded services in the helping professions via video conference applications. Many children's hospitals, for example, have telehealth units where doctors consult with patients in different cities (Hernandez et al., 2016), and practitioners also use video technology to treat childhood depression (Hilty et al., 2013), provide intervention services for children with attention and behavioral problems (Gloff et al., 2015), conduct hearing screenings (Lancaster et al., 2008), and diagnose reading disabilities (Waite et al., 2010). In the forensic domain, video technology helps medical experts assist with sexual abuse examinations of children who live in rural communities (Miyamoto et al., 2014), and some children's advocacy centers have telehealth outreach programs that deliver trauma treatment to victims (see Kohrumel & Neufeld, 2019).

As an investigative tool, tele-forensic interviewing offers several advantages when face-to-face interviewing would delay an interview or require lengthy travel. Shortening the time between alleged events and interviews could accelerate case disposition, reduce forgetting, and minimize opportunities for unwanted influence from parents, peers, or suspects. This delivery mode also makes it easier to involve highly trained or specialized interviewers who might elicit higher quality testimony (e.g., an interviewer fluent in the child's primary language). Although face-to-face interviewing will likely remain standard practice, rapid expansion of the telehealth industry, increased internet access, and experiences with tele-forensic interviewing during the COVID-19 pandemic suggest that tele-forensic interviewing is slated to join the suite of teleservices currently deployed by today's child protection professionals.

But even though many young children frequently use screens (e.g., smartphones,

computers, tablets), and some children video chat (Rideout, 2017), it is a mistake to assume that face-to-face and tele-forensic interviews will elicit comparable testimony. An obvious concern is that children use screens for entertainment, thereby raising the possibility they may not always grasp the purpose of forensic conversations and the need to relay accurate reports. Furthermore, children are more accustomed to face-to-face conversations, which could make the use of technology distracting and exacerbate the always-present challenge of keeping young witnesses on task. Anecdotally, a handful of forensic interviewers we spoke with voiced concern that the social distance created by tele-forensic interviewing may make it difficult to build rapport with children, resulting in fewer disclosures and increased reluctance to share sensitive or embarrassing details. All of these concerns make it important to look at age trends in children's productivity and accuracy during tele-forensic interviews.

Testimony From Tele-Forensic Interviews

Existing research on the impact of technology on children's eyewitness reports does not provide a clear picture of the risks and benefits of tele-forensic interviewing. An early application of video technology to facilitate children's testimony came when courts permitted testimony via closed-circuit television (Davies & Wescott, 2018). Proponents argued that a live video feed would reduce stress from confronting an alleged abuser without negatively impacting children's accuracy. Although evaluations found that testifying remotely seemed to lessen children's anxiety, results from this confrontational situation cannot inform us about the impact of screens during investigative interviews. (For reviews of closed-circuit television, see Chong & Connolly, 2015, and Davies, 1999.)

Research on using video technology to elicit early event reports is surprisingly thin. In one study, forensic sketch artists tele-interviewed adults to construct composite drawings of a

previously seen face. Drawings produced by tele-forensic interviews were poorer matches than those drawn during face-to-face interviews, but tele-forensic witnesses felt less pressure and reported better concentration during the interview (Kuivaniemi-Smith et al., 2014). In another study, there were no differences across delivery modes in the accuracy or detail of adults' reports when interviewed 1 day after watching a crime video (Nash et al., 2014).

In an investigation of computer-assisted interviewing of children (Donohue et al., 1999), 5- to 8-year-olds participated in enjoyable activities and were asked to keep a secret from the experimenter's coworker. Several days later, the children answered questions delivered by (1) a computer program (an animated figure asking questions, with children responding verbally), (2) a computer program with an adult present, or (3) an adult with no computer involvement. There were no significant differences in children's testimony across conditions, including their willingness to reveal the secret. Using the same paradigm, Powell et al. (2002) conducted a follow-up study in which children twice answered questions (4 and 14 days later). The accuracy and detail of their testimonies were comparable across interview modes, but children were less consistent across multiple interviews in the computer-assisted interviews and less likely to disclose the secret. Anecdotally, Powell and her colleagues mentioned that the children needed "considerable practice and ongoing assistance" (p. 309) to operate the computer program, and they speculated that the increased cognitive load in that condition may have eliminated any benefits from computer-assisted interviewing.

In another study, interviewers questioned 6- and 10-year-olds in a traditional or tele-forensic mode immediately after a target event (Doherty-Sneddon & McAuley, 2000). There were no differences in the amount of correct information between conditions, but children in the tele-forensic condition gave fewer wrong answers to specific questions (e.g., "What color was

the ball?”), and younger children in this condition were less likely to acquiesce to misleading questions about target details. When Australian children (ages 5 to 12 years) participated in a series of innocuous activities and answered questions 1 or 2 days later, interview mode (traditional or tele-forensic using a computer tablet) had no effect on responses, regardless of the question type, although tele-forensic interviews required more prompts for clarification (Hamilton et al., 2016).

Even though past results did not identify consistent patterns of differences across interview modes (see also Brown et al., 2020), four study limitations make it premature to conclude that face-to-face and tele-forensic interviews are equally effective. First, in most studies the children provided testimony shortly after target events, when strong memory traces could have masked condition differences. Although many forensic interviews take place soon after a disclosure, often children do not disclose for weeks or months (sometimes years) after alleged events are said to have occurred (London et al., 2005). Second, no studies have examined the effect of exposure to misinformation before interviews on children’s testimony in tele-forensic interviews. Although use of evidence-based protocols dramatically reduces the prevalence of suggestive questions in interviews (Lamb et al., 2007), pre-interview conversations with adults or peers can also have deleterious effects on the accuracy of children’s testimony (Principe et al., 2012). Third, the study by Doherty-Sneddon and McAuley (2000) did not test children 5 years and younger, nor was there a sufficient number of younger children in Hamilton et al.’s (2017) study to adequately test the impact of using tele-forensic interviewing with young children. Finally, neither study included touching as part of the target events, and practitioners’ opinions have not always been swayed by studies that did not include touching to children’s bodies.

The Present Study

We designed the study before the COVID-19 pandemic to address limitations of prior research on tele-forensic interviewing by including (1) a 2-week delay between the event and interviews, (2) exposure to misinformation in children's homes, (3) children as young as 4 years, and (4) questions about touching. The target event and subsequent interview occurred in laboratory buildings, and we assumed that tele-forensic interviews in the field would also largely take place outside children's homes (e.g., children's advocacy centers, police stations, medical centers), partly for access to more reliable technology but also to reduce concerns about scene security (e.g., influence by parents or extraneous distractions). Validating our prediction that children would rarely be in their homes during interviews, provisional guidelines issued at the start of the pandemic cautioned against home interviews being a default practice (see National Children's Alliance, 2020), with some children's advocacy centers using tele-forensic interviews to reduce COVID-19 transmission by seating children and interviewers in separate rooms.

We compared the testimony elicited by face-to-face and tele-forensic interviews to determine (1) how verbal children were during a practice narrative phase; (2) how informative and accurate they were in response to open-ended prompts about the target event; (3) the percentage of children who reported accurate and inaccurate touches, and how early in interviews they disclosed; (4) their ability to discriminate experienced from nonexperienced events; and (5) the number of accurate and inaccurate responses to questions about peripheral event details. We explored age trends due to anticipated questions about young children's attention and reality monitoring while watching a screen, and we also planned to explore whether any effects of interview mode could be explained by the reactions of children with specific characteristics, such as low exposure to screens.

Method

Participants

The sample included 261 children (48% female) ranging from 4.11 to 8.88 years of age at their second session interview ($M = 6.42$, $SD = 1.43$). The majority resided in the New York metropolitan region (73%, $n = 190$, $M_{\text{age}} = 6.38$, $SD = 1.37$), where families enrolled through links to the laboratory website (with online appointment scheduling) that appeared in social media (parent groups) and electronic school newsletters. The others (27%, $n = 71$, $M_{\text{age}} = 6.55$, $SD = 1.59$) lived in small town/rural communities in the Midwest, and these families scheduled their participation by calling the phone number in newspaper advertisements or by mailing back fliers, distributed by schools and day care centers, that requested their phone numbers. Only one child participated per family, and this child received \$30 for each laboratory session.

Families at the first site had higher incomes than those in the second (91% vs. 55% of parents reporting yearly incomes of \$50,000 or more, Fisher's exact test, $p < .001$), and these families more often reported that their children were ethnically Hispanic/Latino (21% vs. 7%, $p = .005$). At both sites, the majority of parents described their children as Caucasian (76% vs. 72%, $p = .30$), and mean age did not differ across sites, $t(1, 259) = 0.86$, $p = .39$. Overall, the sample was 75% Caucasian (9% African American, 6% Asian, and 10% another race or biracial) and 17% Hispanic/Latino, with 81% of families reporting yearly incomes of \$50,000 or more. All children spoke English, and 95% spoke English at home.

Procedure

The children participated in a version of the Mr. Science—Germ Detective paradigm. This paradigm increases the salience of innocuous touches by telling children that Mr. Science (the assistant directing them through a series of germ education activities) can no longer touch them to help with the activities because there is a new rule in the laboratory to prevent the spread of germs. (For similar Germ Detective procedures, see Brubacher et al., 2019, and Dickinson &

Poole, 2017.) The children experienced the target event (a germ education program) in Session 1, later listened to their parents read a story that contained misinformation, and then returned for a Session 2 interview and developmental tests.

Session 1

Consent and the Germ Instructions. Assistants explained the study activities during informed assent (for children 6 years or younger) and consent (for older children and parents/guardians) procedures. A female assistant then walked the child away from the waiting room to deliver a set of germ instructions that began with this introduction:

Hi, my name is (*Name*). I'm going to tell you how we play Germ Detective. First, do you know what germs are? (*Listen to child's answer.*) That's right (*and/or*) germs are living things that are so small we can't see them. Germs are everywhere, and most of the time they don't bother us because our bodies are built to get along with germs. But sometimes, germs can make us sick. You are going to play some science games with Mr. Science that help children learn how to stay healthy.

She then explained that because some children who come to play have a cold or sore throat, "We are asking Mr. Science not to put his skin on your skin, so he doesn't pass on any germs," but that he could help with the lab coat, safety glasses, and games. She completed the germ instructions by explaining a germ rule and asking the child to repeat it:

For example, we tell Mr. Science not to shake your hands when he's done. Mr. Science used to say goodbye and shake children's hands, but we don't want him to do that anymore. If Mr. Science forgets this new rule and shakes your hand, just be a germ detective and remind him about the rule. Also, Mr. Science is used to brushing children off and helping them with other things, but we don't want him to do that if he has to

touch your skin. If Mr. Science touches your skin, just remind him that he broke the rule. I'm supposed to ask you if you remember this new rule. What is Mr. Science's new rule? (*That's right or repeat rule.*) Okay. Let's go see Mr. Science now and you can start having fun.

Target Event. After the female assistant introduced the child to the male assistant, Mr. Science asked the child to put on a laboratory coat and safety glasses. He then directed the child through four activities about germs and personal hygiene: (1) using a spray bottle to simulate how far a sneeze travels, (2) watching a video about viruses and bacteria, (3) illustrating the power of soap by sprinkling pretend germs (pepper) into water and watching the pepper scatter, and (4) using petroleum jelly and glitter to demonstrate how germs transfer from one surface to another. Each video-recorded session lasted approximately 15 minutes.

During these activities, Mr. Science touched the child's skin once and caught himself before he committed another breach of the germ rule. For the completed touch, he brushed the child's cheek with his fingers (ostensibly to remove water from the sneeze activity). After that touch, Mr. Science waited for the child to recite the no-touching rule. To silent children he asked, "Oh, I think I just broke a rule. What did I do?" and then said (to all children), "That's right, I'm not supposed to pass germs on by touching your skin." After the last activity, Mr. Science thanked the child for playing Germ Detective and held out his hand for a hand shake. If the child attempted to shake hands, he quickly pulled back before they touched. As before, he paused briefly to allow the child to recite the rule before acknowledging his mistake.

Parent Tasks. While the child was with Mr. Science, a parent or guardian completed three questionnaires:

1. The Behavioral Inhibition Questionnaire (BIQ) is a 30-item parent report measure of

behavioral inhibition in multiple domains (peer situations, physical challenges, separation, interactions with unfamiliar adults, and general novel situations). Cronbach's alphas for total behavioral inhibition in one study were .95 for mother ratings and .94 for father ratings, with stability coefficients over 12 months of .78 and .74, respectively (Bishop et al., 2003).

2. The Media Usage Questionnaire included questions from a survey by Common Sense Media (Rideout, 2015, used with permission). The parent reported the number of households the child spends a lot of time in and the percentage of time spent in these households. For primary and secondary households, the parent marked, from a list of devices, which devices were in the household, sometimes used by the child, and personally owned by the child. The parent also reported whether the child video chatted and, if yes, the frequency of video chatting from six options (ranging from less than once a month to every day or almost every day).

3. A demographic sheet asked the parent to record each parent's educational level, the child's race(s) and ethnicity (Hispanic or nonHispanic), which languages the child spoke at home, and the family's income category.

The parent also received one of two counterbalanced versions of a storybook titled *A Visit to Mr. Science*. Both versions started with instructions to (1) read the book to the child on the two evenings before the final interview, even if the child could read; (2) record when the book was read (day and time) on the back cover; and (3) read twice in one day if needed (preferably at two different times rather than consecutively). Each storybook contained the child's name embedded in contextual details about the visit (e.g., "A nice lady met [*child's name*] inside ...), but the story, assistants, and parents did not claim that events in the story had actually happened. One version described two of

the four experienced science demonstrations and two nonexperienced demonstrations; the second version described the other two experienced demonstrations and two other non-experienced demonstrations. Neither version described the delivered face touch, but both versions said that Mr. Science completed the halted touch ("Next Mr. Science said, "Good job, thanks for helping me today" and shook [*child's name*] hand.").

After explaining the story reading process to the parent, the assistant gave the parent a folded wallet-sized card with instruction reminders (e.g., "Try not to ask questions about Germ Detective or share what YOU know"), best dates to read the storybook, and the Session 2 appointment time on the front. She asked the parent to record anything the child spontaneously disclosed about Germ Detective on the inside and to return the card during Session 2.

Session 2

Interview. Approximately 2 weeks after Session 1, each child completed a face-to-face or tele-forensic interview. First an assistant took the child to meet a female interviewer (for a face-to-face interview) or a female "helper" (an interviewing assistant who sat with the child to facilitate a tele-forensic interview). Interviewing assistants, who sat in children's periphery during interviews (to the side and farther back from the screen), turned on the computer monitor, operated recording equipment, and monitored the child's needs and safety (e.g., escorted them to the bathroom, if needed). Seventeen interviewers conducted interviews in both conditions.

The tele-forensic interviews, via Skype, used desktop speakers and a 19" computer monitor positioned on a small table. The interviewer, whose upper chest and head were visible on screen, conducted the interview from an adjoining room (although the child was unaware of the interviewer's location). Before each face-to-face or tele-forensic interview, assistants positioned the child-sized table and chairs, guided by floor marks, to equate the distance between

the child and interviewer across conditions at the start of the conversation.

Tele-forensic interviews were approximately 2 minutes longer ($M = 18.09$ min, $SD = 4.47$) than face-to-face interviews ($M = 15.86$ min, $SD = 3.86$), perhaps due to occasional technology difficulties during tele-forensic sessions, $t(1, 258) = 4.30, p < .001, d = 0.53, 95\% \text{ CI } [0.27, 0.80]$. Both interviews progressed through the following phases.

Initial Rapport-Building, a Practice Interview, and Ground Rules. In face-to-face interviews, the interviewer greeted the child, introduced herself, and delivered prompts to build rapport (“I’d like to know a little more about you. How old are you, [child’s name]? Oh, [child’s age]. So what [grade/preschool] are you in?”). During tele-forensic interviews, the interviewer also explained the tele-interview process after introducing herself:

We’re talking through a computer. That’s pretty cool isn’t it? Have you ever talked to someone through a computer? (*If “no”*: Have you ever talked to someone on the phone?) Well talking on the computer is a lot like talking on the phone. On the phone we can hear each other. But on the computer we can see each other too. I can see you and you can see me. I have some questions to ask you but I can’t be there right now, so this is how we’re going to talk today, through the computer. Okay? While we’re talking on the computer it might freeze—it might get stuck. If that happens you should quit talking and my helper who is sitting with you will tell you when it’s okay to start talking again. Also, if the computer freezes I might have to ask you a question again, okay?

Interviewers then proceeded identically in both conditions, beginning with a practice narrative about a typical day at school (“. . . Tell me about a day at your school, from the time you start school until the time you are done for the day. . . .”), where they expressed interest and delivered invitations to tell more (e.g., “What happens next?”) to prompt the child to report

activities until the end of the school day. Next the interviewer delivered four ground rules (with practice questions) that instructed the child to (1) not guess, (2) alert the interviewer if she said something the child did not understand or (3) if the interviewer said something wrong, and (4) to tell the truth.

Topic Introduction. The interviewer raised the interview topic by saying, “Good. I’m going to ask you about something else now. Did you come to the university a couple of weeks ago and go into the science room and play some Germ Detective games?” Children who did not acknowledge the prior visit received additional prompts (e.g., “Do you remember when you went into the science room and you got some money?”).

Open-Ended Prompts About Germ Detective. After the child acknowledged the target event, the interviewer delivered five open-ended prompts (interview phase 1): (1) “I want to know what happened that day at Germ Detective—start with the first thing that happened and tell me everything you can, even things you don’t think are very important,” (2) “Tell me more about what happened at Germ Detective,” (3) “Sometimes we remember a lot about how things looked—tell me how everything looked at Germ Detective,” (4) “Sometimes we remember what people said—tell me what you talked about at Germ Detective,” and (5) “Is there something else you can tell me about Germ Detective?”

Whenever children reported that someone did something wrong, broke a rule, or touched them, the interviewer explored the disclosure by reiterating what the child said (“You said....”) and asking the child to tell more (“Tell me what happened”). When necessary, the interviewer asked follow-up questions to clarify (1) who committed the transgression, (2) what that person did, and (3) where the child was touched (e.g., “You said Mr. Science touched your face—where on your face did Mr. Science touch you?”).

Yes-No Questions (With Prompts to Elaborate). The interviewer then delivered increasingly focused questions about Germ Detective to elicit touch reports, first asking if there was something the child liked about Mr. Science (phase 2) and then if there was something the child did not like about Mr. Science (phase 3), if someone did something wrong (phase 4), and if someone touched the child (phase 5). Throughout these interview phases, the interviewer acknowledged what the child already said before asking about other instances (e.g., "You said [*report*]. Did someone touch you somewhere else when you came to play Germ Detective?") and repeated the prompt until the child said, "No." For each disclosure of wrong-doing, interviewers asked follow-up questions (who, what, where on the body), as needed, to clarify incomplete reports.

Source-Monitoring Questions. To confirm the parent's report that the child heard the misleading story, the interviewer said, "I have been asking you about that time you played Germ Detective with Mr. Science. Did your mom or dad read you a story about visiting Mr. Science? I don't know what happened in the story. What did Mr. Science do in the story that your mom/dad read to you?" She then delivered the following instructions:

Okay. You know, there might have been some things in the story that you really did when you visited Mr. Science, but there might have been things in the story that you didn't really do—things that were only in the story. Now I am going to ask whether some things REALLY happened during Germ Detective. For example, I might ask if Mr. Science flew across the room. If I ask you about something, and you don't remember it, just tell me "no." Did Mr. Science really fly across the room during Germ Detective? Good, that's right. He didn't fly across the room, so you were right to say "no." If I ask about something that Mr. Science didn't do that time you visited him, I want you to say "no."

But if you did something I ask about, then I want you to tell me.

Ten recognition (yes/no) questions asked about the four experienced science activities (e.g., “Did Mr. Science have you spray water?”), two nonexperienced activities described in the child's storybook version (suggested events), two nonexperienced and not described activities (control events), and two touch events (a delivered touch and a noncompleted touch that was described as completed in the storybook). Each child received one of 10 question orders, with each block of five questions containing two experienced activities, one suggested activity, one control activity, and one touch event. Unlike previous Mr. Science studies that had a longer delay between the target event and interviews (Poole & Lindsay, 2001, 2002), we did not ask “Did Mr. Science *really*...” for activities the child already reported to prevent ceiling effects that would reduce power to detect condition effects.

Detail Questions. Six questions requested peripheral details about the germ education activities (e.g., “There was a picture of something on Mr. Science’s apron. What was on his apron?”).

Developmental Tasks. After the interview and a visit to the waiting room, the child completed three developmental tasks: the Luria tapping task with a dowel (i.e., “I tap once, you tap twice; I tap twice, you tap once.”), theory of mind (unexpected contents and changed location), and utilization—verbal generation (a measure of whether the child persistently touched objects, despite a no-touching rule, while describing how to use the objects). See Poole et al. (2014) for task descriptions.

Parent Questions About Previous Disclosures. An assistant asked the parent about previous disclosures of touching. (“After the first session, did [*child's name*] tell you that Mr. Science touched his/her face, hands, or anywhere else?” “What did [*child's name*] tell you about

this?" "Did he/she say anything else about this?").

Debriefing. An assistant explained the two interviewing conditions to the child and asked whether we could show the child's recordings "when we explain our research to other people." In addition to these items, the parent's debriefing form asked whether we could archive study transcripts from the child's sessions for future studies.

Data Coding

Pairs of assistants at one research site processed de-identified transcripts from both sites. Working with files that did not include condition assignments, two coders counted the number of prompts interviewers delivered in the practice narrative phase (excluding requests to repeat an answer) and the number of words in the child's narrative (on-topic and off-topic) after deleting false starts, filler words (e.g., "well"), and redundant information elicited after requests to repeat an answer. (These "modified word counts" correlate highly with measures of the amount of information in narratives based on syntactic units, Dickinson & Poole, 2000). Intra-class correlations (ICCs) exceeded .99 for both variables. The coders resolved discrepancies for these measures, and the measures described next, by discussion while revisiting transcripts.

To capture the amount and accuracy of the information children provided in response to open-ended prompts about the target event, two coders deleted off-topic narrative and other uninformative words (e.g., false starts and completely redundant sentences) from files containing only interview phase 1 dialog. Next they categorized word groups (e.g., accurate information about the germ activities, suggested information about touching) and recorded the number of words in each category (using the computer's built-in word count feature). To assess coding reliability, we first compared whether coders kept or deleted individual words in a random sample of 20 transcripts (3,308 words); Cohen's kappa = .91. For the fully double-coded data, we

then computed ICCs for the number of words assigned to each category, and all were greater than .95. Collapsing over categories, the ICC for number of words was .99, and the ICC for the proportion of accurate words was .98.

To code the number and accuracy of touch reports, coder pairs independently read children's responses to open-ended prompts (phase 1) and the next four yes-no questions (with prompts to elaborate) about Germ Detective (phases 2–5) and recorded each touch report using a series of letters/numbers that described the report. (A 4-column field for the body location [e.g., hand] was followed by fields indicating whether the touch report described a completed or noncompleted touch; whether the report included contextual detail or no detail; and whether the report was accurate, inaccurate, or minimized [a completed touch described as noncompleted]). Both coders jointly spotted individual touch reports 92% of the time. ICCs for the number of touch reports in individual categories (e.g., accurate report of a completed touch) all exceeded .80 for the first site and .93 for the second.

Two coders independently decided whether answers to each detail question contained any accurate information and any inaccurate information. At the first site, Cohen's kappas = .94 and .82, respectively; at the second site, Cohen's kappas = .82 and .85.

Results

Table 1 describes the children assigned to face-to-face and tele-forensic interviews. Conditions were well balanced for age, the number of times children heard the misleading story, the number of days from the science experience to the interview, mother's educational level, and the frequency of video chatting. Family incomes were somewhat higher in the tele-forensic condition, although this difference was not statistically significant.

We analyzed children's eyewitness reports with a generalized linear mixed model

program and report Type III tests of fixed effects (choosing a negative binomial distribution with log link function for overdispersed count variables, a binary distribution with logit link function for dichotomous variables, and a multinomial [ordered] distribution with cumulative logit link for ordinal variables). For each dependent measure, we inspected the Condition $\times$ Age interaction in the full model, with age entered as a continuous variable, and then dropped nonsignificant interactions to evaluate main effects of condition and age.

Practice Narratives

Table 2 describes results for the number of prompts interviewers delivered during the practice narrative and the number of words in children's responses. Interviewers delivered fewer prompts to older children but behaved comparably across conditions, averaging about four prompts per interview. The mean number of prompts in the face-to-face condition was similar to the value in Table 2 after replacing an extreme outlier (19 prompts) with the next highest value in that condition. After replacement, the mean for the face-to-face condition was 3.94 ($SD = 2.90$) versus 3.89 ($SD = 3.00$) in the tele-forensic condition, $F(1, 258) = 0.12$, $p = .73$, $IRR = 1.03$, 95% CI [0.87, 1.21].

Despite equal encouragement, children in the tele-forensic interview condition were significantly less forthcoming than their peers in the face-to-face condition (see Table 2). The face-to-face advantage remained significant even after replacing the values of three extreme outliers with the next highest score in the respective conditions. These means for the face-to-face and tele-forensic conditions, respectively, were 92.49 ($SD = 67.67$) and 76.81 ($SD = 63.38$), $F(1, 258) = 5.29$, $p = .022$, $IRR = 1.23$, CI [1.03, 1.46].

Responses to Open-Ended Prompts

Analyses of free narrative responses explored whether children in the face-to-face

condition continued to be more forthcoming when conversation shifted to the target event. Table 3 describes the quantity and accuracy of the information children provided in response to five open-ended prompts about the germ education activities (phase 1 of the interview), excluding five children who received only four prompts.

There was a significant Condition $\times$ Age interaction for the number of words in children's free narratives (see Table 3), and the interaction remained significant after replacing scores for two extreme outliers in the tele-forensic condition (a 7-year-old and an 8-year-old) with the next highest value in that condition, $F(1, 252) = 4.18, p = .042$. Figure 1 shows the best-fitting lines from regressing the number of words on age within each condition for the winsorized sample, which showed a cross-over at 7.35 years. To explore this interaction, we computed the condition effect separately for younger (4, 5, and 6 years) and older (7 and 8 years) children, using the original (not winsorized) data for negative binomial models. As reported in Table 3, children younger than 7 years were significantly more verbal in the face-to-face condition, but the condition effect was not significant among older children. An analysis of only the 8-year-olds also did not return a significant condition effect, $F(1, 42) = 2.10, p = .15$, IRR = 0.74, CI [0.49, 1.13].

Accuracy rates were high (97%) and did not vary across conditions (see Table 3). Of course, accuracy based on all information reported does not reveal how often children reported true and false touching, which we turn to next.

Touch Reports

Table 4 reports the percentage of children who reported each of four touch types prior to source-monitoring questions (interview phases 1–5). There were no significant Condition $\times$ Age interactions, and no main effects of condition, for accurately reporting the face touch, accurately

reporting the noncompleted handshake, inaccurately reporting a completed handshake (the suggested touch event), or inaccurately reporting a nonsuggested touch (e.g., touch to the knee). The percentages of children reporting no accurate touch types, one (i.e., face or hand), or both were as follows: face-to-face condition, 37%, 42%, and 21%; tele-forensic condition, 39%, 45%, and 16%, Mantel-Haenszel test of trend(1) = .64, $p = .42$. Values for 0, 1, or 2 inaccurate reports were as follows: face-to-face condition, 65%, 33%, and 2%; tele-forensic condition, 64%, 35%, and 2%, Mantel-Haenszel test of trend(1) = .05, $p = .82$.

The frequency of accurate touch reports did show the expected increase with age. The percentages of children who reported the face touch, from 4 to 8 years of age, respectively, were 17%, 44%, 41%, 53%, and 65%, and the percentages who reported the noncompleted handshake were 28%, 28%, 36%, 47%, and 50%. There were no significant age trends for inaccurate reports. For the suggested handshake, the percentages reporting in each age group were 24%, 36%, 32%, 22%, and 24%; for spontaneous reports of touching to other body parts, the percentages were 12%, 10%, 16%, 6%, and 2%.

We also explored whether one interview mode prompted children to disclose touching earlier in interviews, when prompts were less directive (e.g., open-ended prompts in phase 1, "Did someone touch you when...?" in phase 5). For each of four touch types, Table 5 reports the number and percentage of children who disclosed in each interview phase, by age and condition. To analyze disclosure patterns, we entered age as a continuous variable into generalized linear models with interview phase (1 to 5) as an ordinal variable (see Table 6). Preliminary tests for the assumption of parallel lines confirmed that these analyses were appropriate.

There was no evidence that interview condition impacted how early children made inaccurate touch reports (see Table 6). However, there were significant Condition $\times$ Age

interactions for accurate reports of the face touch and the noncompleted handshake. For face touch reports, a regression plot to help us visualize the interaction showed a cross-over interaction: Younger children reported earlier in face-to-face interviews, whereas older children reported earlier in tele-forensic interviews, with the cross-over occurring at 7.35 years. Because follow-up tests did not consistently pass the test of parallel lines required for ordinal regression, we explored this interaction with nonparametric correlations between interview condition and reporting phase. These analyses confirmed earlier reporting by children younger than 7 years in the face-to-face condition, $r_s(53) = .28, p = .037, CI [.02, .51]$, and a nonsignificant condition effect for children 7 and older, $r_s(55) = -.13, p = .33, CI [-.38, .13]$. Children 8 years and older, however, did report face touches earlier in the tele-forensic condition, $r_s(28) = -.38, p = .036, CI [-.65, -.03]$.

Analyses of the noncompleted handshake also showed a face-to-face advantage for younger children and a tele-forensic advantage for older children, with the cross-over occurring at 7.03 years. Again, children younger than 7 years reported earlier in the face-to-condition, $r_s(48) = .33, p = .021, CI [.05, .55]$. The condition effect was nonsignificant for children 7 and older, $r_s(45) = -.23, p = .12, CI [-.48, .06]$, and also for the 8-year-olds, $r_s(21) = -.28, p = .20, CI [-.62, .15]$. Including children 7.60 years and older in the older group, to increase the sample size, again returned a finding of earlier reporting by older children in the tele-forensic condition, $r_s(30) = -.36, p = .042, CI [-.63, -.02]$.

In sum, similar numbers of children reported the touch events across interview modes. Children younger than 7 years disclosed completed and noncompleted touch more readily in the face-to-face condition, however, whereas older 7- and 8-year-olds disclosed these events more readily in the tele-forensic condition.

Responses to Source-Monitoring and Detail Questions

Table 7 reports the accuracy of children's responses to source-monitoring questions, the mean proportion of detail questions that elicited any accurate information (a measure of how completely children described the germ activities), and the mean proportion of detail questions that elicited any inaccurate information (a measure of accuracy when interviewers asked about peripheral details of those activities). Data from children with a missing question or an unscorable answer were removed for the corresponding analysis (2 for source monitoring and 1 for detail questions). Performance on these measures were not at floor or ceiling, yet there were no significant Condition $\times$ Age interactions and no main effects of condition.

Further analyses also failed to find significant Condition $\times$ Age interactions for source-monitoring questions about touch: For the experienced touch, $F(1, 256) = 0.05, p = .83$; for the suggested touch, $F(1, 255) = 0.10, p = .75$. The majority of children in the face-to-face (65%) and tele-forensic (57%) conditions accurately acknowledged the experienced touch, $F(1, 257) = 1.62, p = .20, OR = 1.40, CI [0.83, 2.34]$. Similarly, the majority of children in each condition (59% and 63%, respectively) accurately rejected the suggested touch, $F(1, 256) = 0.43, p = .51, OR = 0.85, CI [0.51, 1.40]$. Several mechanisms could be responsible for the high error rate on these questions, including thoughtless yes/no responses, failures to retrieve the contextual details that specify source, and difficulty keeping in mind earlier instructions to report what really happened. Regardless, there was no evidence that tele-forensic interviews compounded the challenges associated with answering a long series of source-monitoring questions.

Exploring the Face-to-Face Advantage Among Younger Children

That children younger than 7 years were less talkative in early interview phases in the tele-forensic condition led us to question whether these behaviors reflected lower digital literacy

among 4- to 6-year-olds. To explore this possibility, we first compared performance across the two research sites: a metropolitan site where parents enrolled through links on social media and by scheduling appointments electronically (because traditional methods had become ineffective at this site), and a Midwestern site where we recruited through printed announcements and follow-up phone calls (in an effort to attract low-income families).

For the total sample, there was a significant Condition $\times$ Age $\times$ Site interaction for the number of words in free narratives, $F(1, 248) = 5.52, p = .020$. Results from the metropolitan site mirrored overall findings, with (1) a significant Condition $\times$ Age interaction, $F(1, 182) = 9.09, p = .003$; (2) a condition effect favoring face-to-face interviews among children younger than 7 years, $F(1, 120) = 7.80, p = .006, IRR = 1.64, CI [1.16, 2.34]$; and (3) no significant condition effect among older children, $F(1, 60) = 2.87, p = .10, IRR = 0.76, CI [0.55, 1.05]$. The difference in means among younger children was pronounced at this site: 158.71 ($SD = 126.50$) in the face-to-face condition versus 108.74 ($SD = 94.50$) in the tele-forensic condition. By contrast, this difference was trivial for the 4- through 6-year-olds at the second site, 89.34 ($SD = 113.07$) versus 88.09 ($SD = 103.20$), indicating the metropolitan site drove the face-to-face advantage among young children.

We also ruled out the possibility that the younger children simply lacked video chat experience. According to parents, older children video chatted less frequently than younger children, $r_s(257) = -.18, p = .004$, and among children younger than 7 years the frequency of video chatting was not significantly correlated with the number of words in response to open-ended prompts in the face-to-face condition, $r_s(78) = .15, p = .19$, or in the tele-forensic condition, $r_s(77) = .02, p = .90$. Only 10% of the younger sample did not use either a tablet, desktop computer, or laptop computer, and the condition effect among children younger than 7

years remained after controlling for age and the number of these devices used at home, $F(1, 155) = 6.41, p = .012, IRR = 1.53, CI [1.10, 2.12]$.

Because behaviorally inhibited children tend to freeze in unfamiliar situations, we also explored whether the condition effect was due to inhibited children being reticent in the tele-forensic condition. Behavioral inhibition scores were not significantly related to age, however, $r(252) = .05, p = .41$, and there was not a significant Condition $\times$ Age $\times$ Behavioral Inhibition interaction, $F(1, 246) = 0.18, p = .68$.

In sum, 4- to 6-year-olds assigned to a tele-forensic interview were less forthcoming, but this finding was not driven by the performance of children at the small town (lower-income) research site, was not explained by less video chat experience or limited availability of tablets/computers among younger children, and was not a consequence of greater behavioral inhibition in that age group.

Finally, we asked whether there might also be a face-to-face advantage among 7- and 8-year-olds who were low on cognitive control (see Poole et al., 2014). That is, although collectively older children were not more talkative in the face-to-face condition, was it possible that less mature children were? To answer this question, we performed a principle axis exploratory factor analysis on data from the three developmental tasks and extracted scores for a single dominant factor. Among 7- and 8-year-olds, the Condition $\times$ Cognitive Control interaction was not significant, $F(1, 92) = 2.55, p = .11$. Although these findings do not rule out the possibility that a subset of older children fare better in a face-to-face interview, this measure did not identify such children.

Discussion

Although previous studies found minimal differences between face-to-face and tele-

forensic interview modes (Brown et al., 2020), the interviewing community expressed concern during the COVID-19 pandemic that screen conversations might make it difficult to build rapport with child witnesses (National Children's Alliance, personal communication, March 20, 2020). The current study, which had a larger sample of young children than earlier reports, replicated previous findings in some ways while also validating interviewers' concerns.

We did not find statistically significant differences across delivery modes for the accuracy of children's answers to open-ended prompts, the number or accuracy of touch disclosures, the accuracy of answers to source-monitoring questions, or the amount of accurate and inaccurate information provided in response to questions about event details. However, children in the tele-forensic condition were less talkative during the practice narrative phase, 4-, 5-, and 6-year-olds who spoke on screen continued to be less talkative in response to open-ended prompts about the target event, and these younger children less often reported the face touch and noncompleted handshake in response to earlier, less directive prompts. On the other hand, older 7- and 8-year-olds who disclosed these events were more forthcoming on screen, suggesting there might be less social inhibition among older children in the tele-forensic condition.

Implications for Research and Practice

We do not yet know why the younger children said less in the tele-forensic condition or whether this is an issue for actual forensic interviews. An important difference between our procedure and practice in the field is that we fixed the number of prompts interviewers delivered, whereas forensic interviewers can deliver more prompts to reluctant children. It is unknown how many additional children would have disclosed in response to less directive prompts had our interviewers spent more time in early interview phases when needed. As in our data, preliminary data from an east-coast children's advocacy center, based on 473 interviews, did not show a

significant difference in disclosure rates across face-to-face and tele-forensic interviews among younger (younger than 7 years) or older (7 years and older) children, but findings are not yet available on the prompts that elicited these disclosures (Center for Hope Forensic Services, personal communication, February 12, 2021). It is possible that interview mode will be less important in the field than in the current study, however, partly because children involved in investigations are often aware of the topic of forensic conversations.

The fact that our entire sample in the tele-forensic condition was less verbal in the practice narrative phase, but only 4- to 6-year-olds were less verbal in response to open-ended prompts about target events, suggests that older children in our study gradually warmed up to—or became less distracted by—the screen. This pattern of findings supports the NICHD Revised Protocol recommendation (see Lamb et al., 2018) that advises interviewers to monitor children's behavior and avoid confronting them with more directive questions before they are ready.

It is possible that young children in the tele-interview condition in our study were distracted or intimidated by the presence of an assistant. We included an assistant because we were uncomfortable leaving young children alone in an unfamiliar room, needed to reduce risk from behaviors that occur in our laboratories (e.g., tipping back chairs), and envisioned that an assistant would often be needed for the types of challenging cases that might lead investigative teams to arrange tele-interviews (e.g., cases involving children with intellectual disability). Although we minimized distractions by positioning assistants to the side of children and farther back from the screen (rather than focused on the screen, as in Donahue et al., 1999), future studies should examine the impact of having another person in the interview room. That the face-to-face advantage emerged only in our higher-income site suggests that factors other than the assistant might be responsible for the condition difference, such as interviewers' on-screen

demeanors or home experiences that encourage children to relax and listen, rather than talk, to screens.

Limitations and Future Directions

Although older 7- and 8-year-olds in this study were more forthcoming about transgressions in the tele-forensic condition, these findings emerged from a large set of analyses involving small samples of only those children who disclosed. Future studies need to confirm whether tele-forensic interviewing produces less reluctance among older children.

To maximize disclosures in tele-forensic interviews, we hope future research will identify which camera angles and interviewer behaviors provide the most natural conversational experience for children. For example, we do not yet know whether it is better to give children a clearer view of interviewers' faces or whether a more distant view, which shows more of interviewers' bodies and gestures, conveys more support. And because we did not code how interviewers moved their heads and bodies across conditions, we do not know if talking on screen leads interviewers to reduce any subtle cues that capture children's attention and prompt them to continue. Answers to these questions, from studies that expand our findings to other measures of eyewitness content and completeness, could help forensic interviewers speak more effectively to children in the tele-forensic mode.

Because our study included only 4- to 8-year-old children who were not asked to disclose highly personal events or implicate a loved one in wrong doing, future studies are needed to replicate findings with older children and other types of events, including events without inappropriate touching or misinformation. Also, practitioners are interested in whether interviews in the home influence the dynamics of tele-forensic interviews, especially when abuse might have occurred in the home or parents could have influenced children to conceal abuse or to make

false reports. Finally, larger and more diverse samples from rural areas would help us understand how children who live without reliable internet respond to tele-interviews. Whatever results emerge from these studies, researchers will need to periodically reassess children's reactions across delivery modes because these could change if caregivers and schools continue the current trend of integrating web-based activities and instruction into daily life.

A stronger understanding of how screen viewing influences basic cognitive and social processes is also important for the developmental researchers struggling to continue their research programs during the pandemic. They should be encouraged that we found few differences across a large number of performance variables, but two cautions come to mind. First is the possibility that internet-dependent studies will recruit less diverse samples, making it important to look at relationships between demographic variables and children's performance. Second, tele-research could underestimate children's abilities if the age differences we found in verbal productivity were due to young children expending less effort when viewing a screen. Adding tasks that are sensitive to effort could alleviate concerns by first establishing that performance on a well-researched task was uninfluenced by the data collection mode.

Conclusion

In sum, our findings provide further evidence that tele-forensic interviewing can be a reasonable choice in situations where this interviewing mode is the best option and is not in conflict with legal requirements for evidence collection (e.g., a child protective services requirement for face-to-face contact). Nevertheless, it is important that policy-makers not base practice recommendations solely on children's performance. Often, interviews are opportunities to connect caregivers to services, and families' willingness to engage in these services could differ depending on early modes of conversation with family advocates. Also, policies that

replace local professionals could have economic consequences for communities and displace forensic interviewers who have more cultural knowledge about their communities. Even if future field research finds few differences in children's performance across interview modes, decisions to conduct tele-forensic interviews should consider the risks and benefits to children and their families, the professionals who work with them, and their communities.

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Table 1*Characteristics of Children in the Face-to-Face and Tele-Forensic Interview Conditions*

Sample Characteristics	Interview condition		<i>N</i>	<i>r</i>	ϕ	<i>p</i>
	Face-to-face	Tele-forensic				
Age	6.40 (1.41)	6.44 (1.46)	261	.01		.83
Misleading story (times heard)	1.97 (0.18)	1.96 (0.19)	255	-.02		.76
Days from event to interview	14.22 (1.06)	14.25 (1.09)	261	.02		.81
Percentage female	50%	47%	261		.03	.67
Mother's educational level			261	.04		.57
Some high school	0%	2%				
High school	5%	0%				
Trade school/some college	13%	12%				
College degree	39%	40%				
Advanced degree	43%	46%				
Family income (yearly)			253	.12		.07
Less than \$10,000	2%	2%				
\$10,000 to 19,999	4%	1%				
\$20,000 to 29,999	2%	1%				
\$30,000 to 39,999	8%	5%				
\$40,000 to 49,999	8%	6%				
\$50,000 or more	76%	85%				
Video chat frequency			259	-.02		.73
Never	13%	11%				
Less than once a month	15%	19%				
Once a month	14%	13%				
A few times a month	23%	24%				
Once a week	11%	15%				
A few times a week	15%	11%				
Every day or almost every day	9%	8%				

Note. Descriptive statistics are means for age, number of times children heard the misleading story, and number of days from the event to the interview (standard deviations in parentheses);

correlations for these variables are Pearson r s. Correlations for ordinal variables are Spearman's rho. All children whose parents did not report the number of times the story was read acknowledged hearing the story.

Table 2

Practice Narratives: Number of Prompts Delivered, and Number of Words in Children's Replies, During Face-to-Face and Tele-Forensic Interviews

Analysis	Mean (<i>SD</i>)		<i>F</i>	<i>df</i>	<i>p</i>	IRR	CI
	Face-to-face	Tele-forensic					
Number of Prompts Delivered							
Interaction from the full-factorial model Condition × Age			0.78	1, 257	.379		
Main effects model							
Condition	3.99 (3.09)	3.89 (3.00)	0.21	1, 258	.645	1.04	0.88, 1.23
Age			47.21	1, 258	< .001	0.81	0.77, 0.86
Number of Words in Children's Replies							
Interaction from the full-factorial model Condition × Age			0.26	1, 257	.612		
Main effects model							
Condition	96.09 (84.62)	77.37 (65.73)	6.61	1, 258	.011	1.26	1.06, 1.51
Age			29.79	1, 258	< .001	1.19	1.12, 1.27

Note. Means are estimated marginals. Inferential statistics are from negative binomial models due to overdispersed

data. Words spoken include on- and off-topic talk after deleting false starts, filler words (e.g., "well"), and redundant information elicited after an interviewer asked the child to repeat an answer. IRR = incidence rate ratio (values for age are for a 1-year increase).

Table 3*Responses to Open-Ended Prompts (Interview Phase 1) During Face-to-Face and Tele-Forensic Interviews*

Analysis	Mean (<i>SD</i>)		<i>F</i>	<i>df</i>	<i>p</i>	IRR	CI
	Face-to-face	Tele-forensic					
Number of words ^a							
Interaction from the full-factorial model							
Condition × Age			5.13	1, 252	.024		
Main effects model: 4–6 years							
Condition	142.59 (126.11)	103.87 (96.35)	5.90	1, 157	.016	1.50	1.08, 2.09
Age			45.72	1, 157	< .001	1.92	1.59, 2.33
Main effects model: 7–8 years							
Condition	232.23 (142.08)	270.81 (262.47)	0.83	1, 93	.365	0.87	0.64, 1.18
Age			4.80	1, 93	.031	1.35	1.03, 1.76
Proportion accurate							
Interaction from the full-factorial model							
Condition × Age			0.06	1, 241	.812		
Main effects model							
Condition	.97 (.06)	.97 (.09)	0.33	1, 242	.566	1.01	0.99, 1.03
Age			0.23	1, 242	.629	1.00	0.99, 1.01

Note. Means are estimated marginals. IRR = incidence rate ratio (values for age are for a 1-year increase). Word counts include words spoken during the first interview phase after deleting false starts, off-topic talk, etc. (Dickinson & Poole, 2000).

^a Results for number of words are from negative binomial models due to overdispersed data.

Table 4*The Percentage of Children Who Reported Touch in Face-to-Face and Tele-Forensic Interviews*

Analysis	Percentage		<i>F</i>	<i>df</i>	<i>p</i>	Odds ratio	CI
	Face-to-face	Tele-forensic					
Accurately reported the face touch							
Interaction from the full-factorial model							
Condition × Age			0.86	1, 257	.354		
Main effects model							
Condition	46	39	1.07	1, 258	.302	1.31	0.78, 2.20
Age			22.37	1, 258	< .001	1.57	1.30, 1.90
Accurately reported the noncompleted handshake							
Interaction from the full-factorial model							
Condition × Age			0.15	1, 257	.702		
Main effects model							
Condition	38	36	0.10	1, 258	.750	1.09	0.65, 1.81
Age			7.98	1, 258	.005	1.30	1.08, 1.56
Inaccurately reported a completed (suggested) handshake							
Interaction from the full-factorial model							
Condition × Age			0.18	1, 257	.670		

Table 4 continued

Analysis	Percentage		<i>F</i>	<i>df</i>	<i>p</i>	Odds ratio	CI
	Face-to-face	Tele-forensic					
Main effects model							
Condition	29	27	0.15	1, 258	.700	1.11	0.64, 1.92
Age			0.18	1, 258	.669	0.96	0.79, 1.16
Inaccurately reported a nonsuggested touch							
Interaction from the full-factorial model							
Condition × Age			0.03	1, 257	.866		
Main effects model							
Condition	7	11	1.01	1, 258	.316	0.65	0.28, 1.52
Age			2.68	1, 258	.103	0.78	0.57, 1.05

Note. Percentages are estimated marginals.

Table 5

Number of Children Who Reported Touch in Each Phase of Face-to-Face and Tele-Forensic Interviews (With the Percentage Reporting in Each Phase)

Phase	Age (years)					Overall
	4	5	6	7	8	
Accurately reported the face touch						
Face-to-face						
1	-	4 (40)	3 (18)	2 (18)	1 (7)	10 (17)
2	-	-	-	-	-	-
3	-	1 (10)	-	-	-	1 (2)
4	5 (71)	4 (40)	8 (47)	7 (64)	10 (71)	34 (58)
5	2 (29)	1 (10)	6 (35)	2 (18)	3 (21)	14 (24)
Tele-forensic						
1	1 (33)	-	-	-	5 (31)	6 (11)
2	-	-	-	-	1 (6)	1 (2)
3	-	1 (8)	-	3 (19)	2 (13)	6 (11)
4	2 (67)	3 (25)	3 (50)	8 (50)	6 (38)	22 (42)
5	-	8 (67)	3 (50)	5 (31)	2 (12)	18 (34)
Accurately reported the noncompleted handshake						
Face-to-face						
1	3 (38)	2 (33)	6 (50)	6 (40)	3 (38)	20 (41)
2	2 (25)	-	-	1 (7)	-	3 (6)
3	-	1 (17)	-	1 (7)	-	2 (4)
4	3 (38)	3 (50)	4 (33)	5 (33)	3 (38)	18 (37)
5	-	-	2 (17)	2 (13)	2 (25)	6 (12)
Teleforensic						
1	1 (12)	1 (12)	4 (50)	5 (56)	9 (60)	20 (42)
2	-	-	-	-	1 (7)	1 (2)
3	-	1 (12)	-	1 (11)	-	2 (4)

Table 5 continued

Phase	Age (years)					Overall
	4	5	6	7	8	
4	5 (62)	2 (25)	1 (12)	3 (33)	4 (27)	15 (31)
5	2 (25)	4 (50)	3 (38)	-	1 (7)	10 (21)
Inaccurately reported the noncompleted handshake						
Face-to-face						
1	1 (14)	2 (15)	1 (20)	2 (40)	-	6 (16)
2	-	-	-	-	2 (29)	2 (5)
3	1 (14)	2 (15)	1 (20)	-	-	4 (11)
4	3 (43)	5 (38)	3 (60)	3 (60)	3 (43)	17 (46)
5	2 (29)	4 (31)	-	-	2 (29)	8 (22)
Tele-forensic						
1	-	-	2 (15)	3 (50)	2 (50)	7 (20)
2	1 (14)	-	-	-	-	1 (3)
3	-	-	-	-	-	-
4	4 (57)	4 (80)	10 (77)	3 (50)	2 (50)	23 (66)
5	2 (29)	1 (20)	1 (8)	-	-	4 (11)
Inaccurately reported nonsuggested touch						
Face-to-face						
1	1 (33)	-	3 (60)	1 (100)	-	5 (50)
2	-	-	-	-	-	-
3	1 (33)	-	-	-	-	1 (10)
4	1 (33)	1 (100)	2 (40)	-	-	4 (40)
5	-	-	-	-	-	-
Tele-forensic						
1	-	1 (25)	1 (25)	1 (50)	-	3 (20)
2	-	-	-	-	-	-
3	-	-	1 (25)	-	-	1 (7)
4	4 (100)	3 (75)	2 (50)	1 (50)	1 (100)	11 (73)
5	-	-	-	-	-	-

Note. Phase 1 included five open-ended questions about Germ Detective (e.g., "... tell me everything you can...).

Interviewers then asked if there was something the child liked about Mr. Science (phase 2), there was something the child did not like about Mr. Science (phase 3), if someone did something wrong (phase 4), and if someone touched the child (phase 5).

In each phase, interviewers delivered follow-up prompts to clarify touch reports.

Table 6*Analyses of the Phase That Elicited Touch Reports in Face-to-Face and Tele-Forensic Interviews*

Analysis	Test of parallel lines		<i>F</i>	<i>df</i>	<i>p</i>	<i>Odds ratio</i>	CI
	$\chi^2(9)$	<i>p</i>					
Accurately reported the face touch							
Interaction from the full-factorial model Condition × Age	10.05	.35	4.04	1, 105	.047		
Accurately reported the noncompleted handshake							
Interaction from the full-factorial model Condition × Age	0.59	1.00	7.02	1, 90	.010		
Inaccurately reported a completed (suggested) handshake							
Interaction from the full-factorial model Condition × Age	3.08	.96	1.86	1, 65	.178		
Main effects model							
Condition			0.03	1, 66	.873	0.93	0.38, 2.30
Age			4.45	1, 66	.039	1.43	1.02, 2.00
Inaccurately reported a nonsuggested touch							
Interaction from the full-factorial model Condition × Age	1.55	.67	0.00	1, 20	.990		
Main effects model							
Condition			3.04	1, 21	.100	4.64	0.74, 28.91
Age			1.37	1, 21	.254	1.49	0.73, 3.02

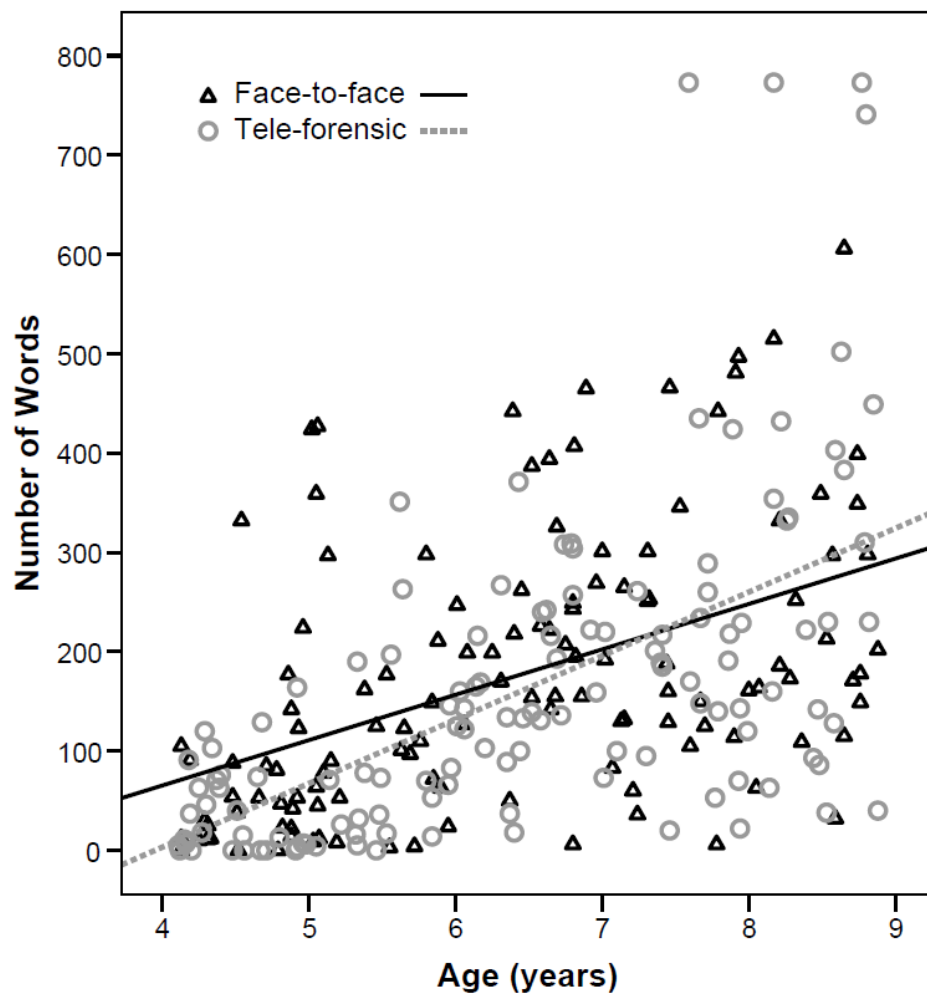
Table 7*Performance on Source Monitoring and Detail Questions During Face-to-Face and Tele-Forensic Interviews*

Analysis	Mean (<i>SD</i>)		<i>F</i>	<i>df</i>	<i>p</i>	IRR	CI
	Face-to-face	Tele-forensic					
Source monitoring: proportion accurate responses							
Interaction from the full-factorial model							
Condition × age			1.19	1, 255	.277		
Main effects model							
Condition	.78 (.15)	.77 (.16)	0.19	1, 256	.667	1.01	0.97, 1.04
Age			32.09	1, 256	< .001	1.04	1.02, 1.05
Detail questions: proportion eliciting accurate information							
Interaction from the full-factorial model							
Condition × age			0.11	1, 156	.745		
Main effects model							
Condition	.51 (.22)	.50 (.22)	0.03	1, 257	.857	1.00	0.96, 1.06
Age			38.70	1, 257	< .001	1.06	1.04, 1.08
Detail questions: proportion eliciting inaccurate information							
Interaction from the full-factorial model							
Condition × age			0.36	1, 256	.549		
Main effects model							
Condition	.26 (.20)	.23 (.20)	0.95	1, 257	.331	1.02	0.98, 1.08
Age			1.73	1, 257	0.190	1.01	0.99, 1.03

Note. IRR = incidence rate ratio (values for age are for a 1-year increase).

Figure 1

Number of Words in Responses to Open-Ended Prompts as a Function of Condition and Age



Note. Each symbol represents a child. Scores for two extreme outliers in the tele-forensic condition were replaced with the next highest score in that condition. Children younger than 7 years were significantly more verbal in the face-to-face condition, whereas there was not a significant effect of interview mode among children 7 years and older, or among the 8-year-olds.