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Truth induction in young maltreated children: The effects of oath-taking and reassurance on true and false disclosures[☆]

Thomas D. Lyon^{a,*}, Joyce S. Dorado^b

^a University of Southern California Gould School of Law, 699 Exposition Blvd., Los Angeles, CA 90089-0071, USA

^b Harbor-UCLA Medical Center, Torrance, CA 90502, USA

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ABSTRACT

Objective: Two studies examined the effects of the oath or reassurance (“truth induction”) on 5- to 7-year-old maltreated children’s true and false reports of a minor transgression.

Methods: In both studies an interviewer elicited a promise to tell the truth, reassured children that they would not get in trouble for disclosing the transgression, or gave no instructions before questioning the child. In Study 1, children were encouraged to play with an attractive toy by a confederate, who then informed them that they might get in trouble for playing. In Study 2, a confederate engaged children in play, but did not play with the attractive toy.

Results: In Study 1, the oath and reassurance increased disclosure among children who would qualify as competent to take the oath. In Study 2 neither the oath nor reassurance increased false reports among children who would qualify as competent, whether yes/no questions or tag questions were asked. Among non-competent children, reassurance (but not the oath) increased false reports. Children were more likely to accuse the confederate of the transgression than to implicate themselves.

Conclusions: The results suggest that a promise to tell the truth may increase true disclosures without increasing false allegations. Reassurance that specifically mentions the target activity also increases true disclosures, but may increase acquiescence among some children.

Practice implications: A child-friendly version of the oath may be a useful addition to child interviews.

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Introduction

Whether abused children can be encouraged to disclose their maltreatment without risking the occurrence of false allegations is a serious issue. Efforts to encourage young children to disclose suspected abuse led to the high profile criminal cases involving large numbers of preschool children and questionable allegations of sexual abuse (Ceci & Bruck, 1995). At the same time, sexually abused children questioned for the first time are likely to deny abuse (Lyon, 2007), and are susceptible to various pressures to recant (Malloy, Lyon, & Quas, 2007). This research explores the potential for increasing maltreated children’s willingness to disclose transgressions without also increasing false alarms.

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* Corresponding author.

Non-disclosure of transgressions

A number of studies have found that children in their early school-age years appear most inclined to lie to conceal their transgressions (Polak & Harris, 1999; Talwar & Lee, 2002; Talwar, Lee, Bala, & Lindsay, 2002) and the transgressions of others (Bottoms, Goodman, Schwartz-Kenney, & Thomas, 2002; Talwar, Lee, Bala, & Lindsay, 2004).

Little research has explored whether and how children's denials of transgressions may be overcome. Question-type appears to have some influence. Yes/no and tag questions are more effective than open-ended questions in eliciting reports of secrets (Bottoms et al., 2002; Pipe & Wilson, 1994), and highly leading questions can overcome requests to keep transgressions a secret (Thompson, Clarke-Stewart, & Lepore, 1997). However, direct questions may simply be increasing acquiescence, in which case they risk increasing false allegations. Decades of research on children's suggestibility has emphasized the dangers of interviewing techniques once defended as necessary to overcome children's reluctance to disclose negative experiences (see review in Bruck, Ceci, & Principe, 2007).

Another approach is to attempt to influence the child's attitudes regarding the consequences of disclosure. A primary motivation for secrecy among children is to avoid punishment (Last & Aharoni-Etzioni, 1995), and warnings not to tell influence children's disclosure of minor transgressions (Bussey, 1993; Polak & Harris, 1999). The person who questions a child about possible wrongdoing might influence the child's calculus by highlighting the negative consequences of non-disclosure or by seeking to minimize the negative consequences of disclosure. We will refer to these approaches as truth induction.

Interviewers might highlight the negative consequences of non-disclosure by emphasizing the necessity of telling the truth. Most children by 4 to 5 years of age understand that lying leads to punishment (Bussey, 1992; Lyon & Saywitz, 1999; Peterson, Peterson, & Seeto, 1983), and maltreated children show good understanding by at least 5 years of age (Lyon & Saywitz, 1999). Young children are more likely to reveal minor transgressions when asked to promise to tell the truth (Talwar et al., 2002, 2004) or after discussing the meaning and morality of truth and lies (Huffman, Warren, & Larson, 1999; London & Nunez, 2002).

Less attention has been paid to the possibility that interviewers might attempt to minimize the negative consequences of disclosure. Bussey and Grimbeek (1995) argue that children questioned about abuse should be reassured about the consequences of disclosure, and Wagland and Bussey (2005) found that 5- to 10-year-olds predicted that children would be more inclined to disclose adult's transgressions if they were reassured by the questioner that they would not be punished. However, to our knowledge, no research has explored the actual effect of reassurance on children's disclosures.

If disclosure is in fact influenced by the child's anticipation of negative consequences, then one might expect children to be less forthcoming about their own transgressions than the transgressions of another person. Although research on children's dishonesty about transgressions in the laboratory has not compared disclosures about the self to disclosures about others, research questioning children about conflicts with siblings has found that young children minimize their own wrongdoing compared to their sibling's (Ross, Smith, Spielmacher, & Recchia, 2004; Wilson, Smith, Ross, & Ross, 2004).

At the same time that truth induction may increase children's willingness to disclose transgressions, its effect on children who have not transgressed must be considered. Whereas suggestibility research often focuses on false allegations—that is, children will only be questioned about events that did not occur, research examining non-disclosure of transgressions often questions children exclusively about experienced events. Yet suggestive techniques may increase true allegations as well as false allegations, and thus have some benefits, and techniques for eliciting admissions of transgressions may increase false allegations as well as true allegations, and thus have disadvantages.

Research on disclosure of transgressions has not enrolled children substantiated as maltreated, yet there are a number of reasons to do so. Maltreatment is likely to have negative effects on children's trust that adults will not cause them harm (Shields, Ryan, & Cicchetti, 2001), which could make them particularly susceptible to secrecy. On the other hand, they tend to exhibit delays in development (Lyon & Saywitz, 1999; Shonk & Cicchetti, 2001), which might make them less proficient at lying.

Children often feel complicit in abuse and fear that they will be punished for disclosing (Anderson, Martin, Mullen, Romans, & Herbison, 1993). In many cases of sexual abuse, perpetrators use subtle, persuasive techniques rather than force to gain compliance (Elliot, Browne, & Kilcoyne, 1995). In a sample of sexual abuse cases prosecuted in criminal court, Sas and Cunningham (1995) found that 30% of the victims initially did not even recognize the abusive behaviors were wrong. Hence, children are likely to view abuse as transgressions by themselves as well as by the offender.

Another reason for enrolling children with substantiated maltreatment is to increase the external validity of child witness research. In order to be applicable to criminal allegations of abuse, child witness research should consider the legal preconditions for children's testimony. Criminal courts hear cases of abuse that have been investigated and substantiated by the police and, in most cases of intra-familial abuse, by social services. In turn, prosecutors only file cases that they conclude can be proven beyond a reasonable doubt at trial, weeding out a large proportion of cases (Cross, Walsh, Simone, & Jones, 2003).

In American courtrooms, all witnesses are required to take some form of the oath (Mueller & Kirkpatrick, 2003), and oath-taking competency tests are common (Myers, 2005). Young maltreated children have difficulty in passing competency tasks (Lyon & Saywitz, 1999). As a result of the screening process, the majority of child witnesses in criminal cases are school-age or older, with a very small proportion of preschool children (Goodman, Taub, Jones, & England, 1992; Gray, 1993; Stroud, Martens, & Barker, 2000).

In a number of other countries, oath-taking competency tasks have been relaxed. Nevertheless, either a competency test or some form of the oath is often retained. In the United Kingdom, children under 14 testify unsworn, but their understanding of their duty to tell the truth is routinely assessed in pretrial interviews (Crown Prosecution Service, 2002). Canada recently barred questions about child witnesses' competency, but requires child witnesses to promise to tell the truth (MacKay, 2005).

The current research

In two studies, we sought to examine the potential effects of a promise to tell the truth and reassurance on young maltreated children's disclosure of a minor transgression. We focused on an age group most likely to keep transgressions a secret, in order to maximize the opportunity to manipulate children's secrecy. We predicted that both the oath and reassurance would increase true disclosures, and made no prediction with respect to the effects of truth induction on false disclosures. Our research was novel in several respects. First, we examined the performance of children substantiated as maltreated and tested for oath-taking competency, the group from which child witnesses testifying to abuse are drawn. Second, we assessed the effects of both the oath—in which children promise the interviewer that they will tell the truth—and reassurance, in which children are reassured that the truth will not get them in trouble with the interviewer. Third, unlike previous research on the oath, we not only assessed the oath's effect on true disclosures, but also tested whether the oath and reassurance increases the rate of false alarms. Fourth, we assessed children's honesty about a transgression in which they were involved with an adult, so that we could examine disclosure about both self and other, and compare children's willingness to admit their own wrongdoing with their willingness to implicate the adult who asked them not to disclose. Fifth, we assessed children's honesty regarding an interaction that they did not realize was a transgression until told so by the adult with whom they transgressed, to simulate situations in which children do not initially realize that what they are doing is wrong.

Experiment 1

Method

Competency participants

Participants were children awaiting a dependency court appearance in a large county. Each participant had been removed from the custody of his or her parent or guardian due to allegations of abuse and/or neglect. All procedures were approved by the researchers' Institutional Review Boards as well as the Presiding Judge of the Juvenile Court and the agencies who work with maltreated children. Children were ineligible to participate if they were Spanish-speaking (either officially recognized as Spanish-speaking by the Court or clearly incapable of communicating with the researcher in English), or if they were awaiting an adjudication hearing on the day of their appearance in court (at which they might have to testify). One hundred and thirty-five children (70 girls and 65 boys) participated, ranging in age from 6–0 to 7–11 ($M = 6–11$). Thirty percent were Caucasian ($N = 40$), 37% African-American ($N = 50$), 25% Latino ($N = 34$), 2% Asian or Pacific Islander ($N = 2$) and 7% unknown ($N = 9$).

Competency materials and procedure

Participants were interviewed by one of the three female experimenters. The interviewer sat down with the child at a table, with the toy house on the floor. The interviewer told the child that they would play with the toy house “in just a little bit,” and if the child attempted to play with the toy, asked the child to put her hands in her lap. The interviewer asked for the child's assent to research, and then administered the Oath-taking Competency Task (Lyon & Saywitz, 1999; Lyon & Saywitz, 2000).

The task is a sensitive means of assessing young children's competency to take the oath. The task has four trials (the “meaning stories”) in which the child hears two characters making contrasting statements about an object (either a true statement or a false statement), and is asked a forced-choice question regarding which character “told the truth” (two trials) or “told a lie” (two trials). On each trial, the experimenter asks the child to label a pictured object (e.g., an apple), and then tells the child what two pictured children say about the object: one child labels the object correctly (e.g., “This boy says ‘that's an apple’”) and the other child labels the object incorrectly (e.g., “This boy says ‘that's a banana’”). Each pictured child is accompanied by a talk bubble with the corresponding object (e.g., the boy who labels the apple a banana has a banana in his talk bubble). The experimenter then asks the child to identify the truth-teller (“which boy told the truth?”) or the liar (“which boy told a lie?”). The task is designed to assess early competence, in which children understand that “truth” refers to true statements and “lie” to false statements, without necessarily understanding the distinctions among lies, mistakes, and jokes. This simple understanding of truth and lie is legally sufficient, because it means that a child who promises to tell the truth will strive to only make true statements (and, if the child has the most basic understanding of the terms, avoid all false statements including lies, jokes, and mistakes) (Lyon, 2000). The task has another four trials (the “consequence stories”) in which the child chooses which of two characters “is gonna get in trouble” for what he or she said to one of four authority figures (judge, doctor, social worker, grandmother), a character who “told the truth” or a character who “told a lie.” The consequence stories tap another aspect of children's oath-taking competence, which involves their awareness that it is

wrong to lie. Participants who did not answer all questions correctly on the competency task were excluded, on the grounds that children who fail to understand the meaning and/or significance of lying would not qualify to testify in court.

Induction participants

Excluding children who failed the pretest, the induction sample consisted of 109 maltreated children (59 girls and 50 boys) ranging in age from 6–0 to 7–11 ($M = 6-11$). 30% were Caucasian ($N = 33$), 39% African-American ($N = 43$), 20% Latino ($N = 22$), 2% other (including Asian and Pacific Islander) ($N = 2$), and 8% were unknown ($N = 9$). There were no gender or age differences between children who passed and failed the pretest, but higher percentages of Latinos failed the pretest (35%) than Caucasians (18%) or African-Americans (14%), $\chi^2(2, N = 124) = 5.97, p = .05$.

Induction materials and procedure

The materials included two toys made out of Lego™ building blocks, a large structure containing 21 doors (hereinafter the “toy house”), and a timer with an audible tick and a loud bell. The doors were constructed of Lego™ building blocks or of felt, and behind each door was a small toy or a marshmallow. The toy house rested on a revolving tray so that one could rotate it easily and access all of the doors from one position.

Participants were interviewed by two experimenters, an interviewer and a confederate. Three female experimenters served as interviewers, and made up two pairs (one experimenter alternated as interviewer or confederate); equal numbers of children were interviewed by each pair, and assignment of children to interviewer pair did not differ across conditions.

After administering the oath-taking competency task, the interviewer pointed to the toy house on the floor and told the child that there were lots of doors on each of the four sides, and that behind each of the doors was a “fun toy” or a marshmallow. The interviewer looked through some of her papers, and told the child that she had to go to her office downstairs to get a paper she had forgotten. She explained that “it’s going to be kind of a long wait,” and then, noticing the timer on the table, said, “I’ll tell you what. This is a timer. I’ll set it to 5 min. I won’t be back until this red line gets to this zero at the top and the timer goes ‘ding.’ I hope you can wait that long.” The experimenter then left the room.

A confederate then entered the room, and asked the child if “that lady” had left. The confederate sat down, introduced herself, and engaged the child in small talk. Noticing the toy house, she picked it up and placed it on the table in front of her and the child. She then opened the doors, took out the toys, and assisted the child in opening the doors and taking out the toys. The confederate ensured that she and the child performed each action, so that any subsequent acknowledgement of these actions by the child would be truthful. Shortly before 5 min had elapsed, she returned the toy house to the floor, said, “[Child’s name,] we might get in trouble if anyone found out we played with the toy,” and left the room.

The interviewer re-entered the room shortly thereafter. She told the child that they could play a game with the toy house, but that because she had been gone, she needed to ask the child some questions about what the child had been doing in her absence. She then asked the child questions about her interaction with the toy and asked whether someone else had entered the room and whether they had interacted with the toy. In the oath and the reassurance conditions, these questions were prefaced by special instructions. Participants were randomly assigned to the oath condition, the reassurance condition, or the control condition.

In the *oath* condition ($N = 37$), the interviewer said, “I’m going to ask you some questions now. It’s very important that you tell me the truth. Can you promise that you will tell me the truth? Can you promise that you won’t tell me any lies?” The language was a child-friendly version of a more formal oath; “promise” rather than “swear” was used because of children’s unfamiliarity with the word “swear” (Walker, 1999), and “promise that you will” and “promise that you won’t” rather than merely “promise” were used because of children’s difficulty with the word “promise” (Lyon, 2000).

In the *reassurance* condition ($N = 37$), the interviewer said, “I’m going to ask you some questions now. It’s very important that you tell me the truth. But first I wanted to tell you something. Lots of kids open the doors and play with the toys. You didn’t know you weren’t supposed to, so if you did open any doors, it’s totally o.k., you won’t get in trouble with me at all. If you did look in any doors, and you tell me about it, then we can fix it and make it better. I’ll be really really happy if you tell me the truth.” The language was designed to be analogous to what an interviewer might say to a child who feels guilty about an action but whose disclosure of the action can lead to a corrective response.

Following the special instructions in the oath and reassurance conditions, and without any instructions in the *control* condition ($N = 35$), children were asked six questions, three regarding their own actions (“While I was gone, did you look in any of these doors?” “While I was gone, did you touch anything behind these doors?” “While I was gone, did you take anything out?”) and three regarding the confederate’s actions (“Was it a man or a woman?” “While I was gone, did she look in any of these doors?” “While I was gone, did she touch anything behind these doors?” “While I was gone, did she take anything out?”). As a preface to questions about the confederate, children were asked “Did somebody else come in here?” and children who denied that the confederate came into the room were not asked the subsequent questions about the confederate. Children who admitted that the confederate came into the room were asked “Was it a man or a woman?” so that the experimenter would use the proper pronoun (and this question was not scored). The order of the questions was counterbalanced, so that half of the children in each group answered the questions about their own actions first, and half answered the questions about the confederate first.

The interviewer then played a game with the child involving the toy house, and at the end of the session, told the child that it is difficult for children not to look in the doors while the experimenter was away, that most children would look, and

that it is sometimes difficult to admit having looked. The experimenter concluded “it’s o.k. if you didn’t tell me, even if you did [play with the toys]. But in the future, it’s very important to tell the truth.”

Results

Each child was assigned two scores (from 0 to 3) corresponding to the number of questions regarding herself and the confederate to which she acknowledged playing with the toy house (looking behind the doors, touching the toys behind the doors, taking the toys out), for a maximum total score of 6. If a child denied that the confederate had entered the room (14% of the subjects did so), and was not asked about the confederate’s actions, she was assigned a zero for those questions (because if she denied that the confederate had even entered the room, she necessarily denied that the confederate had interacted with the toy house).

We first analyzed whether honesty was affected by condition (control, oath, reassurance) or question-topic (about self or about the confederate). Preliminary analyses revealed no effects due to age (in months), gender, ethnicity (comparing Caucasians, African-Americans, and Latinos), or experimenter pair, and no interactions between age and condition or question-topic; subsequent analyses were collapsed across these factors. A two-way repeated measures ANOVA, with condition as the between-subjects factor and question-topic (self vs. other) as the within-subjects factor revealed a significant effect for condition, $F(2, 106) = 9.97, p < .001$, partial $\eta^2 = .158$, a significant effect for question-topic, $F(1, 106) = 6.13, p = .015$, partial $\eta^2 = .055$, and no significant interaction, $F(2, 106) < 1$. Planned contrasts on the mean scores revealed that children were more forthcoming in the reassurance condition (62%; $M = 3.73, SD = 2.04$) than in the control condition [27%; $M = 1.63, SD = 1.97; t(70) = 4.44, p < .001$], and more forthcoming in the oath condition (52%; $M = 3.11, SD = 2.12$) than in the control condition ($t(70) = 3.06, p = .003$), but that the reassurance condition and oath condition did not differ ($t(70) = 1.29, p = .202$). In the control condition, 48% of the children (17/35) consistently denied any interaction with the toy by themselves or the confederate, compared to 15% (11/74) of the children in the oath and reassurance conditions, $\chi^2(2) = 14.14, p < .001$. The question-topic effect reflected the fact that children were more willing to admit the confederate’s transgressions ($M = 1.59, SD = 1.26$) than their own [$M = 1.26, SD = 1.34; t(108) = 2.50, p = .014$]. In sum, both the reassurance condition and the oath condition elicited more acknowledgments of transgression than the control condition, and children were more willing to acknowledge the confederate’s transgressions than their own.

Children’s willingness to acknowledge playing varied depending on whether they were asked about looking, touching, or taking, both with respect to themselves (Cochran’s $Q = 9.7, p = .008$) and the confederate (Cochran’s $Q = 26.1, p < .001$). With respect to themselves, children more often acknowledged looking (46%) than touching (39%) or taking out toys (35%); a similar pattern was evident with respect to the confederate (looking 64%, touching 53%, taking out 41%). Therefore, in order to see if reassurance and the oath appeared to produce only partial disclosures, we analyzed children’s responses to each of the six questions separately, comparing children in the control condition to children in the oath and reassurance conditions. Condition differences emerged not only for the actions regarding looking [self $\chi^2(1, N = 109) = 8.44, p = .004$; other $\chi^2(1, N = 109) = 13.16, p < .001$], but also for touching [self $\chi^2(1, N = 109) = 3.58, p = .059$; other $\chi^2(1, N = 109) = 15.66, p < .001$] and taking the toys out [self $\chi^2(1, N = 109) = 5.02, p = .025$; other $\chi^2(1, N = 109) = 5.16, p = .023$]. In sum, children were more willing to acknowledge the less invasive actions, but truth induction increased their willingness to disclose each of the actions.

Discussion

In a group of oath-competent maltreated children, both the oath and reassurance increased disclosure of a minor transgression. The rate of non-disclosure among children in the control group was remarkable, 73%, given the fact that there was nothing inherently wrong with playing with the toy, and that the confederate merely told the child “we might get in trouble” as a means of inducing secrecy.

Children often only partially disclosed, omitting the more invasive actions. Furthermore, children were more likely to disclose the transgressions of the confederate than their own transgressions. This suggests that children’s denials were at least partially motivated by a desire to avoid disapproval or punishment.

The findings suggest that both the oath and reassurance may be effective means of increasing children’s accuracy when questioned about transgressions. However, the mechanism is unclear. It is possible that the oath and reassurance merely increase acquiescence to the interviewer, which could lead children who have not transgressed to false alarm. Prior research examining children’s disclosure of transgressions has not examined this possibility, because it has not tested children who did not transgress. Although researchers have speculated that reassurance may lead to false alarms (Bruck & Ceci, 1995), the only study to include reassurance tested it in combination with other suggestive methods, making it impossible to determine the effects of reassurance alone (Goodman, Batterman-Faunce, Schaaf, & Kenney, 2002).

In the second study, we sought to examine whether children tested under the same conditions as Study 1, but without transgressing, would false alarm when questioned with truth induction. In order to maximize the potential for acquiescence effects, we added two components. First, children who failed the oath-taking competency test were kept in the sample. Truth induction might have a negative effect on children with less understanding of the meaning and consequence of lying. Although these children would not be expected to testify in court, they would nevertheless be questioned by investigators in the field, who might use truth induction as a means of increasing disclosure. Second, we added a series of tag questions to the

end of the interview. Although these questions would be objectionable in court, they are sometimes used by investigators in the field (Lamb, Sternberg, & Esplin, 2000). Truth induction might have different effects, depending on the type of questions that are asked. The second study thus allowed a direct comparison to Study 1, but also enabled us to test more sensitively for negative effects.

Experiment 2

Method

Participants

The final sample consisted of 101 5- to 7-year-old maltreated children (52 girls and 49 boys) ($M=6-6$, range 4–9 to 8–5; only two children were younger than 5–0 or older than 7–11). Eighteen percent were Caucasian ($N=18$), 48% African-American ($N=48$), 29% Latino ($N=29$), and 6% other (including Asian and Pacific Islander) ($N=6$). Sixty-seven children (30 girls and 37 boys) answered the testimonial competency questions correctly and would thus qualify as competent ($M=6-8$, range 4–11 to 8–5). Nineteen percent were Caucasian ($N=13$), 45% African-American ($N=30$), 31% Latino ($N=21$), and 5% other ($N=3$).

Materials and procedure

The materials included the Oath-Taking Competency Task (Lyon & Saywitz, 1999; Lyon & Saywitz, 2000), and the toy house used in Study 1. Participants were interviewed by two of five female experimenters, and assignment of children to experimenters did not differ across conditions. One experimenter questioned the child and the other acted as a confederate. The procedure was similar to that in Study 1, in that the experimenter administered the competency task, introduced the child to the toy house, discovered she had left some papers downstairs, and left the room, setting the timer to 5 min. The experimenter left the toy house on the floor next to the child when she left the room.

During the course of the study we discovered that some children were going off camera before the confederate entered the room. Discussions with confederates confirmed that occasionally they would find a child playing when they entered the room. In order to maintain the comparability of the method to Study 1, in which the toy was visible before the confederate entered the room, and to exclude children who may have played with the toy, we excluded these children. The excluded group ($N=35$) were no different from the remainder of the sample with respect to gender, age, ethnicity, or condition.

The study differed from Study 1 in that the confederate entered the room but did not engage the child in play with the toy. The confederate sat down, introduced herself, and engaged the child in small talk. She then played the “raisin game,” in which the child guessed in which of her hands she hid raisins. The confederate did not notice or mention the toy to the child. Shortly before 5 min had elapsed, she stood up, said good-bye to the child, and left the room.

The experimenter re-entered the room shortly thereafter. She then asked the child questions about her interaction with the toy and asked whether someone else had entered the room and whether they had interacted with the toy. In the oath and the reassurance conditions, these questions were prefaced by special instructions, identical to those in Study 1.

Following the special instructions in the *oath* ($N=32$) and *reassurance* ($N=35$) conditions, and without any instructions in the *control* condition ($N=34$), all children were asked two sets of questions. The first set (hereinafter “yes/no questions”) were identical to those asked in Study 1: three were about the child’s actions and three about the confederate’s.

The second set of questions (hereinafter “tag questions”) were prefaced by an accusation that the confederate had played with the toy: “Now [child’s name], there is a lady who likes to come in and play with my toy while I’m gone and I think she came in and played with my toy.” In the control condition, the experimenter proceeded to the questions. In the reassurance condition, the experimenter reminded the child: “Now remember, you didn’t know you weren’t supposed to play with the Lego house, so if you did, you won’t get in any trouble with me at all. I’ll be really really happy if you tell the truth.” In the oath condition, the experimenter reminded the child of her promise: “Now remember, you promised to tell me the truth, and you promised not to tell me any lies.” The experimenter then asked six tag questions about the child’s and the confederate’s interaction with the toys, three regarding the child (You took out some of the toys, didn’t you? “You touched some of the toys, didn’t you?” “You opened some of the doors, didn’t you?”), and three regarding the confederate (“at lady took out some of the toys, didn’t she?” “She touched some of the toys, didn’t she?” “She opened some of the doors, didn’t she?”). Tag questions have been shown to be suggestive with 5- to 7-year-old children (Greenstock & Pipe, 1996). Moreover, since the tag questions always followed similar yes/no questions, they were akin to repeated questioning, which has also been shown to have suggestive effects on young children (Poole & White, 1991). Half of the children in each group answered the questions about their own actions first, and half answered the questions about the confederate first.

The tag questions were always asked after the yes/no questions. We did not counterbalance the order of these questions for two reasons. First, we wished to compare children’s performance on the yes/no questions in Study 1 to their performance on the yes/no questions in Study 2. Asking the yes/no questions first in Study 2 maximized the design’s comparability to Study 1, since only yes/no questions were asked in Study 1. Second, the interview was designed so that the least leading questions were asked first, analogous to other child witness research (Bruck, Ceci, Francoeur, & Barr, 1995) and to recommendations for forensic interviewing (Lamb et al., 2000).

Results

Preliminary analyses revealed no effects due to age (in years), gender, ethnicity (comparing Caucasians, African-Americans, and Latinos), or experimenter pair, and no interactions between age and the other factors; subsequent analyses were collapsed across these factors. Sixty-seven of the children passed the competency pretest (4 of 4 correct on the meaning task and 4 of 4 correct on the consequence task) and would likely qualify as competent to testify. Children who passed were, not surprisingly, somewhat older ($M = 80$ months, $SD = 9.8$) than children who did not pass [$M = 74$ months, $SD = 10.2$, $t(99) = 2.9$, $p = .005$], but the distributions of gender and ethnicity did not differ.

Yes/no questions

As in Study 1, each child was assigned two scores (from 0 to 3) corresponding to the number of questions regarding herself and the confederate to which she acknowledged playing with the toy house (looking behind the doors, touching the toys behind the doors, taking the toys out). Preliminary analyses showed that whether the child was asked about his or her own actions or the confederate's actions did not affect performance, and therefore the scores were collapsed across this factor.

A two-way ANOVA with condition and competency as between-subjects factors revealed a significant effect for condition, $F(2, 95) = 5.68$, $p = .005$, partial $\eta^2 = .107$, a significant effect for competency, $F(1, 95) = 6.78$, $p = .011$, partial $\eta^2 = .067$, and a significant interaction between condition and competency, $F(2, 95) = 4.84$, $p = .01$, partial $\eta^2 = .092$. Whereas oath-competent children virtually never responded affirmatively to yes/no questions across the three conditions (Control 0%; Oath 0%; Reassurance .7%; $M = .039$, $SD = .196$), and non-competent children similarly performed well in the control and oath conditions (Control 1.8%; $M = .11$, $SD = .33$; Oath 0%), children who failed the competency task and were in the reassurance group exhibited some tendency to false alarm (17%; $M = 1.00$, $SD = 2.12$). When given reassurance, non-competent children were more inclined than competent children to false alarm to yes/no questions, $t(23) = 2.35$, $p = .025$. Not surprisingly, since false alarms were so infrequent, there was no evidence that children were more likely to affirm less invasive actions, either with respect to themselves (Cochran's $Q = 1$, $p = .61$) or the confederate (Cochran's $Q = 0$).

Tag questions

Each child was assigned two scores (from 0 to 3) corresponding to the number of questions regarding herself and the confederate to which she acknowledged playing with the toy house (looking behind the doors, touching the toys behind the doors, taking the toys out). A three-way repeated measures ANOVA, with condition and competency as the between-subjects factors and question-topic (self vs. other) as the within-subjects factor revealed a significant effect for condition, $F(2, 95) = 11.60$, $p < .001$, partial $\eta^2 = .196$, a significant effect for competency, $F(1, 95) = 6.61$, $p = .012$, partial $\eta^2 = .065$, a significant effect for question-topic, $F(1, 95) = 9.00$, $p = .003$, partial $\eta^2 = .087$, and a significant interaction between condition and competency, $F(2, 95) = 5.59$, $p = .005$, partial $\eta^2 = .105$, and no other significant interactions. The effect for question-type was due to children false-alarming more often in response to questions about the confederate's actions ($M = .376$, $SD = .937$) than in response to questions about their own actions ($M = .178$, $SD = .639$).

In order to tease apart the interaction between condition and competency and to allow examination of the competent children in isolation, we tested for condition differences separately for the competent and non-competent children. Children's false alarm rates were generally low, with the exception of non-competent children in the reassurance condition, who answered "yes" 45% of the time. A one-way ANOVA with condition as the between subjects factor on non-competent children's scores found a significant effect due to condition, $F(2, 31) = 7.80$, $p = .002$, partial $\eta^2 = .335$. Post-hoc comparisons using the Bonferroni correction showed that reassurance (45%; $M = 2.67$, $SD = 2.78$) was significantly different than control (4%; $M = .22$, $SD = .44$, $p = .007$) and the oath (5%; $M = .31$, $p = .003$), which did not differ from each other ($p = 1.0$). In contrast, a one-way ANOVA with condition as the between subjects factor on competent children's scores found no significant effect due to condition, $F(2, 64) = 1.56$, $p = .21$, partial $\eta^2 = .047$. Children's false alarm rates were 11% or less in all three groups (Control 2%; $M = .12$, $SD = .60$; Oath 5%; $M = .31$, $SD = .79$; Reassurance 11%; $M = .65$, $SD = 1.52$).

Children showed a greater tendency to claim that they had looked (9%) at the toys than that they had touched (5%) or taken them out (4%, Cochran's $Q = 8.4$, $p = .02$), although their claims regarding the confederate's actions were not significantly different across the actions (looked 24%, touched 20%, and took out 18%, Cochran's $Q = 4.7$, $p = .10$).

Children's performance on the oath-taking competency questions across Studies 1 and 2

Because we used the same Oath-Taking Competency Task in both Studies 1 and 2, we were able to combine the results from both studies to examine age differences in children's performance. Based on prior research (Lyon & Saywitz, 1999), we predicted that there would be clear age improvements in performance, but that even 5-year-olds would show good understanding of the meaning and consequence of truth-telling using this task. Moreover, we predicted that children would perform better on the "consequence" stories (in which children identify a child who "tells a lie" as one who will "get in trouble") than on the "meaning" stories (in which children recognize the relation between accuracy and "truth" or "lie"), suggesting that children know that "lies" are wrong before they fully understand what they are.

Across the two studies, we had complete information on 267 children (and partial information on two children, whose exact scores were lost due to transcription error). There were 43 5-year-olds, 114 6-year-olds, and 112 7-year-olds; 136 girls and 133 boys; 65 Caucasians, 114 African-Americans, and 73 Latinos (17 other).

Preliminary analyses showed no effect due to gender but an effect due to ethnicity, so gender was excluded and ethnicity included in subsequent analyses. A three-way repeated measures ANOVA with age and ethnicity (Caucasian, African-American, and Latino) as between-subjects factors and task (meaning vs. consequence) as a within-subjects factor found significant main effects due to age, $F(2, 241) = 8.96, p < .001$, partial $\eta^2 = .069$, task $F(1, 241) = 11.76, p = .001$, partial $\eta^2 = .047$, and ethnicity, $F(2, 241) = 4.19, p = .016$, partial $\eta^2 = .034$, and an interaction between age and task, $F(2, 241) = 7.02, p = .001$, partial $\eta^2 = .055$. Post-hoc tests using the Bonferroni correction showed that 5-year-olds performed worse than 6- and 7-year-olds ($p < .001$), whose performance did not differ ($p = 1$), and that Latinos performed worse than Caucasians ($p = .035$), with no other ethnic differences (Caucasians vs. African-Americans, $p = .251$; Latinos vs. African-Americans, $p = .819$).

We explored the interaction between age and task by comparing meaning and consequence stories at each age. Whereas 5- and 6-year-olds performed worse on the meaning stories than on the consequence stories [5-year-olds $t(42) = 3.1, p = .003$; 6-year-olds $t(111) = 2.1, p = .038$] the 7-year-olds performed equally well on both types of stories ($t(111) = 1.1, p = .26$). 5-year-olds were 80% correct on the meaning stories ($M = 3.21, SD = .94$) and 93% correct on the consequence stories ($M = 3.7, SD = .77$). 6-year-olds were 93% correct on the meaning stories ($M = 3.73, SD = .71$), and 97% correct on the consequence stories ($M = 3.88, SD = .45$). 7-year-olds were 97% correct on the meaning stories ($M = 3.79, SD = .51$), and 95% correct on the consequence stories ($M = 3.79, SD = .51$).

In order to determine the number of children showing good understanding of the meaning and consequences of lying, we calculated the number of children who performed at ceiling on the tasks. There is approximately a 6% probability that a child will answer four of four meaning or consequence questions correctly by chance (with a 50% chance of answering correctly on any single trial), and a .4% probability that a child will answer all eight questions correctly by chance. About half of the 5-year-olds were at ceiling on the meaning task (53%), compared to over 80% of the older children (6-year-olds, 83%; 7-year-olds, 91%). Over 80% of all three age groups were at ceiling on the consequence stories (5-year-olds 81%; 6-year-olds 92%; and 7-year-olds 84%). About half of the 5-year-olds were at ceiling on both tasks (47%), compared to 80% of the older children. The consistently good performance on the consequence task suggests that it is largely the meaning task that discriminates between children qualifying as competent and those as not competent.

The results were consistent with our predictions that there would be age-related improvements in performance and that the younger children would exhibit better understanding on the consequence than on the meaning tasks, suggesting that they learn that telling a “lie” gets one in trouble before they are aware of the basic meaning of a “lie” as an inaccurate statement.

Lyon and Saywitz (1999) also emphasized how different methods of assessing competency can lead to widely discrepant results because of task difficulties. We found evidence for one previously unnoticed difficulty. In the oath condition, the experimenter asked children “do you promise that you will tell me the truth” and “do you promise that you won’t tell me any lies.” Although all children responded affirmatively when asked to promise to tell the truth, 32% (15 of 47) responded negatively when asked to promise not to tell any lies (either with a shake of the head or a “no”). These children were then asked “will you tell me any lies?” and all responded negatively. We suspect that children were confused by the question “do you promise that you won’t tell any lies?” and intended their “no” to mean “I won’t tell any lies.” The difficulties of the question are of practical importance, because children are often asked in court for a promise that they won’t tell lies (e.g., *Barton v. State*, 1997; *State v. Hall*, 1997).

Discussion

Study 2 was designed to determine if the methods found to increase true disclosures in Study 1 would increase false alarms if a transgression had not occurred. There was no evidence that the oath had any negative effects, even when combined with suggestive questions and asked of children who failed to pass a competency task. Hence, there was no evidence that the positive effects of the oath on disclosure could be attributed to acquiescence. With respect to reassurance, there was some evidence of acquiescence among the children who failed the competency task, with respect to yes/no questions, and even more clearly with respect to suggestive questions.

As in Study 1, children were more likely to implicate the confederate than themselves, albeit only in response to the tag questions. Interestingly, when they false alarmed with respect to their own actions, they exhibited the same pattern as in Study 1: they were more inclined to state that they had simply looked at the toys, rather than acknowledge more invasive actions. They made no such discrimination with respect to false claims about the confederate.

General discussion

Taken together, the two studies suggest that a child-friendly version of the oath increases testimonially competent maltreated children’s true disclosures without increasing false disclosures. Even when the oath was combined with suggestive questions and used with children who would most likely fail to qualify as competent to take the oath, it had no negative effects on accuracy. Among children competent to take the oath, reassurance in these studies also exhibited positive effects on disclosure without increasing false allegations. However, when used with oath-incompetent children, and especially when combined with suggestive questions, reassurance appeared to increase acquiescence and thus the risk of false alarms.

Both studies found some evidence that children were more likely to acknowledge transgressions by a confederate than by themselves, and that when they admitted self-transgressions, they were more likely to admit only less invasive actions.

This supports the notion that children's disclosures are based on their judgments regarding the consequences to themselves of disclosure. The oath and reassurance may alter children's assessments of consequences; the oath may highlight the negative consequences of lying whereas reassurance could reduce the perceived negative effects of disclosure. Future research might further test this theory by inquiring directly about children's expectations regarding the consequences of disclosure.

The form that reassurance takes may affect its tendency to increase acquiescence rather than accurate disclosure. In these studies, the interviewer explicitly mentioned play with the toy and noted that "lots" of children did so. The fact that children who failed the competency task false alarmed to reassurance suggests that their limited understanding of the meaning of "truth" may have made the admonishment that "I'll be really really happy if you tell me the truth" ineffective. Future research should test for possible differences between specific reassurance (in which the target activity is mentioned) and general reassurance, which could assure children that they will not be punished for disclosing without mentioning a specific activity. The trick will be to pitch reassurance at just the right level of specificity—so that a child who has transgressed will understand what the interviewer is getting at, and a child who has not transgressed will not view the reassurance as an invitation to acquiesce.

The fact that oath-competent children reacted differently to truth induction than non-oath competent children when no transgression had occurred may support some assessment of children's understanding of the truth and lies, at least if the oath will be administered or if reassurance will include references to the "truth" (as it did in this research). It seems reasonable to assume that a child who has good understanding of the meaning and morality of truth telling will be more conducive to truth induction. One might suspect that the relation is simply attributable to age, because older children are both less acquiescent than younger children and more likely to qualify as oath-competent. However, we found that including age as a factor did not affect the results, suggesting that the competency task is tapping something more specific. It still might be the case that the competency task is testing for a more general competency that is related to acquiescence, such as verbal ability. Future research can more closely examine the correlates of oath-taking competency. It should be noted that from a legal perspective, the fact that oath-taking competency may tap some underlying competency is less important than whether oath-taking competency predicts greater efficacy of the oath.

Our finding that oath-competent children performed differently than incompetent children may appear inconsistent with prior research examining the correlates of honesty in children. A number of researchers have argued that children's understanding of the meaning and morality of lying is not related to accuracy (Feben, 1985; Goodman, Aman, & Hirschman, 1987; London & Nunez, 2002; Pipe & Wilson, 1994; Talwar et al., 2002). However, there are several important differences between prior research and the studies reported here. First, in several of the studies, children had no motive to lie, and the measure of accuracy focused on memory and not deliberate errors (Feben, 1985; Goodman et al., 1987). Second, some of the research had limited power to detect a relation between understanding and honesty, either because of limited variability in understanding (London & Nunez, 2002), or because honesty was measured with a small number of questions (Pipe & Wilson, 1994; Talwar et al., 2002).

Finally, research examining the correlation between oath-taking competency and honesty only indirectly addresses the most common legal perspective, which is that the competency inquiry is not designed to distinguish truth-tellers from liars per se, but to distinguish those who understand an oath from those who don't. For courts who require some form of oath from all witnesses, it is the oath that is designed to induce truth. In tests more consistent with the legal motivation underlying competency tests and the oath, Talwar and her colleagues have found both that a promise to tell the truth increases honesty (Talwar et al., 2002, 2004), and that among children who were given the oath, understanding of truth and lies did indeed correlate with honesty (Talwar et al., 2004).

Several directions for future research are indicated. One is the effects of truth induction on coached false reports. A common defense in child sexual abuse cases is that an adult has coached the child to make a false claim (Brennan, 1994). Whereas the research here addresses whether truth induction itself encourages false allegations, an important question is whether truth induction might decrease false allegations when the child has been encouraged to lie. Second, future research should directly assess whether the effects of truth induction on disclosure is mediated by children's assessment of the costs and benefits of disclosure, in part by inquiring into children's expectations of the consequences of disclosure when various forms of truth induction are used. Third, research should directly compare maltreated and non-maltreated children, in order to determine if truth induction has differential effects depending on a child's maltreatment history, or if the relation between oath-taking competency and honesty is different for the two groups. Here, our goal was to analyze the behavior of children more representative of child witnesses in court than most prior research, rather than to attempt a direct comparison between maltreated and non-maltreated children. Fourth, research should assess the effects of truth induction on more diverse samples of children with respect to age and ethnicity. Our research focused on an age group that prior research has suggested are most amenable to truth induction; both younger and older children may respond differently. Furthermore, the diverse ethnicities in our samples were comparable to those appearing in court, but necessarily limited our power to detect ethnic differences.

Finally, the ultimate test of truth induction must take place in the field. Here, for ethical reasons, the inducement for secrecy and the transgression were relatively minor. When children are questioned in legal contexts, the inducements to secrecy, the transgressions in question, and sometimes the inducements to disclose are likely to be much more serious. Both the transgressors and adults questioning the child are likely familiar with and often close to the child, which will surely affect inducements both to conceal and to disclose wrongdoing. Our view is that before truth induction is tested in actual

forensic interviews, it is important to establish positive effects on accuracy in the lab, since increased disclosures in the field could reflect either true positives or false allegations. The findings reported here suggest that truth induction may have real promise for enhancing the accuracy of children's reports.

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