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19. Young children's competency to take the oath: Effects of task, maltreatment, and age.

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ORIGINAL ARTICLE

Young Children's Competency to Take the Oath: Effects of Task, Maltreatment, and Age

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Abstract This study examined maltreated and non-maltreated children's ($N = 183$) emerging understanding of "truth" and "lie," terms about which they are quizzed to qualify as competent to testify. Four- to six-year-old children were asked to accept or reject true and false (T/F) statements, label T/F statements as the "truth" or "a lie," label T/F statements as "good" or "bad," and label "truth" and "lie" as "good" or "bad." The youngest children were at ceiling in accepting/rejecting T/F statements. The labeling tasks revealed improvement with age and children performed similarly across the tasks. Most children were better able to evaluate "truth" than "lie." Maltreated children exhibited somewhat different response patterns, suggesting greater sensitivity to the immorality of lying.

Keywords Child witnesses · Child maltreatment · Competency examination · Moral development · Cognitive development

Since at least the late seventeenth century (*R. v. Arrowsmith*, 1678), child witnesses have been routinely asked about their understanding of the meaning and morality of lying to determine if they are competent to take the oath. In fact, until the 1970s, children were presumed incompetent, and their competency had to be demonstrated prior to their testimony being admitted. Although the lifting of formal competency requirements has led some commentators to assert that the competency requirement is dead (Bruck, Ceci, & Hembrooke, 1998; Goodman & Reed, 1986), its death has been exaggerated: In most states, witnesses still either take the oath or make some affirmation that they will tell the truth (Mueller & Kirkpatrick, 2003). This, in turn, leads many attorneys and judges to continue to inquire into children's understanding of truth and lies (Myers, 2005). Moreover, forensic investigators are often advised to ask competency questions in their pretrial interviews (Poole & Lamb, 1998), even in countries (such as the United Kingdom) where questions about the truth and lies are clearly not a prerequisite to testimony (Crown Prosecution Service, 2002). As a result, child witnesses are quite likely to confront questions about their understanding of the truth and lies and the importance of telling the truth. Their responses may be used as a prerequisite to allowing their testimony (in jurisdictions in which there are still competency to take the oath requirements) or as a means of evaluating their credibility (in jurisdictions in which oath-taking incompetency does not bar testimony).

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CHILDREN'S UNDERSTANDING OF TRUTH AND LIES: RESEARCH AND LEGAL RELEVANCE

Research on children's understanding of truth and lies has tended to focus on two issues. The first concerns whether greater understanding is associated with increased accuracy of children's reports. Several studies have found that children's eyewitness performance is not related to their understanding of truth and lies (Feben, 1985; Goodman, Aman, & Hirshman, 1987; London & Nunez, 2002; Pipe & Wilson, 1994; Talwar, Lee, Bala, & Lindsay, 2002). When

significant correlations do exist, they tend to be limited to children who are asked to promise to tell the "truth" or given instructions using the word "truth," suggesting that children need to comprehend the oath in order for it to be effective, rather than a general relation between honesty and conceptual understanding (Lyon & Dorado, 2008; Lyon, Malloy, Quas, & Talwar, 2008; Talwar, Lee, Bala, & Lindsay, 2004).

Limited relations between honesty and understanding of "truth" and "lie" might suggest that oath-taking competency should not be a prerequisite to children's testimony. However, courts are bound to follow legal rather than scientific authority. Recently, the United States Supreme Court has increased the significance of oath-taking competency requirements for child witnesses in criminal cases by expanding defendant's rights against the admissibility of hearsay from declarants who fail to testify at trial (*Crawford v. Washington*, 2004; *Davis v. Washington*, 2006). Children who fail to qualify as testimonially competent are rendered unavailable, which prohibits admission of their "testimonial" hearsay, including statements to the police and forensic interviewers (Raeder, 2007). This approach has led to the reversal of a number of convictions for crimes allegedly committed against children (e.g., *State v. Hooper*, 2007; *State v. Henderson*, 2007). The legal justification was not that the child's statements in those cases were inaccurate, but that the defendant's constitutional right to cross-examine the child was denied when the child failed to qualify. Hence, child witnesses' ability to qualify as competent to take the oath has taken on renewed legal importance.

The continued vitality of the oath and oath-taking competency inquiries highlights the importance of the second issue on which research concerning children's understanding of truth and lies has focused, specifically, how children demonstrate that understanding. This research is of relevance to legal practice in two ways. For one, research on eliciting understanding can provide practical advice regarding the best methods for assessing competency. Second, findings regarding children's competency at different ages can guide the courts in determining when they should require children to demonstrate their understanding, rather than presume competency.

Under the law in most jurisdictions, children demonstrate oath-taking competency if they understand that "truth" refers to factual statements and that one ought to tell the truth (Lyon, 2000). Research has suggested that this basic understanding first appears during the preschool years. Children as young as 4 years exhibit above-chance performance on tasks requiring them to understand that "truth" refers to factual statements and "lies" to counterfactual statements (Bussey, 1992; Haugaard, Reppucci, Laird, & Nauful, 1991; Strichartz & Burton, 1990; Wimmer, Gruber, & Perner, 1984), as well as tasks requiring them to recognize that "truth" is more virtuous than "lies" (Bussey, 1992; Peterson, Peterson, & Seeto, 1983).

Although the sole study to test 3-year-olds found lack of understanding among children this young (Strichartz & Burton, 1990), the tasks in that study were complicated by considerations extraneous to oath-taking competency, including distinctions among lies, jokes, and mistakes. Indeed, such distinctions have been highlighted in much of the developmental research in this area, which has focused on conceptual development rather than legal application (Peterson, Peterson, & Seeto, 1983; Talwar & Lee, 2008; Strichartz & Burton, 1990; Wimmer, Gruber, & Perner, 1984, 1985). Recently, Lyon, Carrick, and Quas (2008), using simplified tasks that exclusively focused on the truth or falsity of statements, found that significant numbers of 3-year-olds were adept at labeling true and false (T/F) statements as "truth" or "lie" and "good" or "bad."

The fact that children's apparent competence depends on the way in which their competency is tested is of obvious importance to legal professionals seeking the most sensitive and appropriate ways to assess children's competency. Prior research has demonstrated that children's ability to recognize "truth" and "lies" far exceeds their ability to define the terms (Lyon & Saywitz, 1999; Pipe & Wilson, 1994). An underexplored question is whether children are more adept at understanding "truth" or "lie." That is, developmental research has typically focused on children's understanding of lying. Yet understanding of the meaning of "lie" is not a legal prerequisite to competency to take the oath. If a child can correctly label whether T/F statements are the "truth" and endorse the goodness of "truth," then he or she can competently promise to be truthful. Although prior research has not found differences in children's understanding of "truth" vs. "lie," (e.g., Haugaard et al., 1991), Lyon, Carrick, et al. (2008) found that 3- to 5-year-old children were better at using the word "truth" to assert or deny the factuality and goodness or badness of statements than they were at using the word "lie."

Still younger children may have an inarticulable understanding of true and false statements. They may have a concept of truth and falsity, and adhere to the belief that one ought to make true statements, but not be capable of labeling true and false statements as such. Lyon, Carrick, et al. (2008) showed that children as young as 2.5 years who failed to accurately label true and false (T/F) statements as "good" or "bad," and "truth" or "lie," nevertheless reliably rejected false statements and accepted true statements. This is consistent with research concerning children's ability to reject counterfactual statements, a skill demonstrated in children as young as 20 months (Hummer, Wimmer, & Antes, 1993; Pea, 1982).

If many young children have an inarticulable understanding of truth and falsity, this has implications for children's testimony. These children would appreciate the importance of speaking truthfully but be unable to comment prospectively on whether they would do so and thus be incapable of promising to tell the truth. They could be allowed to testify in jurisdictions where children can potentially testify unsworn, but are expected to have an understanding of the obligation to testify honestly (e.g., Florida, Fla. Evid. Code, 2007).

MALTREATED CHILDREN'S COMPETENCY: RESEARCH AND LEGAL RELEVANCE

Unfortunately, most prior research concerning truth and lie has tested predominantly Caucasian children (Haugaard et al., 1991), often from middle- and upper-middle class backgrounds (Bussey, 1992; Lyon, Carrick, et al., 2008). It is therefore unclear whether the aforementioned findings generalize to child witness populations, who are more diverse, both in terms of ethnic background and socioeconomic status (SES).

Of particular interest to this study, maltreated children, the predominant child witnesses in United States criminal courts (Goodman, Quas, Bulkley, & Shapiro, 1999), often vary from typically developing children on dimensions that have direct bearing to their understanding of "truth" and "lie." For example, maltreated children are often delayed in cognitive and language development (Kendall-Tackett & Eckenrode, 1996; Lyon & Saywitz, 1999; Trickett, McBride-Chang, & Putnam, 1994). Additionally, although maltreated and non-maltreated children make similar moral judgments when shown pictures of minor transgressions (Smetana et al., 1999; Toth, Cicchetti, Macfie, Rogosch, & Maughan, 2000), maltreated children are more inclined to predict that others will behave immorally and antisocially (Toth et al., 2000) and may have different attitudes about truth-telling and lying, since secrecy is often the norm in abusive homes (Bussey & Grimbeek, 1995). Thus, there is a clear need to examine, directly, maltreated children's capabilities when provided with developmentally appropriate measures of testimonial competency.

A few studies have examined maltreated children's understanding of the meaning and morality of truth-telling (Lyon & Dorado, 2008; Lyon & Saywitz, 1999; Lyon, Saywitz, Kaplan, & Dorado, 2001), but none has actually compared maltreated children to non-maltreated children. There are hints in the literature that maltreated children may exhibit different patterns of understanding truth and lies. Two studies (Lyon & Dorado, 2008; Lyon & Saywitz, 1999) found that maltreated children understood that liars would "get in trouble" better than they understood that children uttering T/F statements were telling "the truth" or "a lie," suggesting that they understood the moral connotations of "truth" and "lie" before they recognized that the words denote true and false statements. These children would pass competency tasks regarding the negative consequences of lying, and would eagerly assert that they would tell the truth, but would not in fact understand what the truth entailed. In contrast, studying a predominantly Caucasian and middle- to upper-middle class group of children, Lyon, Carrick, et al. (2008) found no differences in children's acquisition of the understanding that T/F statements are "truth"/"lie" or "good"/"bad" or that "truth" and "lies" are "good"/"bad."

Unfortunately, it is unclear whether the difference across studies is attributable to the children studied or the nature of the tasks. Maltreated children might uniquely understand the wrongfulness of lying better than the meaning of lying given a home environment rich in punitiveness but lacking in linguistic stimulation. Alternatively, parallel tasks (Lyon, Carrick, et al., 2008) might reveal uniformities in understanding the meaning and morality of "truth" and "lie." Direct comparison between maltreated and demographically similar non-maltreated children utilizing parallel tasks can determine whether maltreated children have a different understanding of truth and lies than non-maltreated children.

PRESENT STUDY

In this study, we examined maltreated and non-maltreated children's early understanding of the meaning and morality of T/F statements and "truth"/"lie." We utilized the same tasks as Lyon, Carrick, et al. (2008) and investigated whether maltreated children and a comparable group of non-maltreated children (similar in ethnicity and SES) exhibited similar patterns of understanding. The tasks assessed children's ability to accept or reject T/F statements (Task A), label T/F statements as "the truth" or "a lie" (Task B), label T/F statements as "good" or "bad" (Task C), and label the words "truth" and "lie" as "good" or "bad" (Task D). We first hypothesized that children would be more adept at accepting true statements and rejecting false statements than at labeling T/F statements as "truth," "lie," "good", or "bad" (Task A > B, C, and D), consistent with Lyon, Carrick, et al. (2008) and research showing an early capacity to reject false statements. Second, we predicted that children would perform equally well across the labeling tasks (Task B = C = D). However, we also tested an alternative hypothesis, based on the possibility raised in prior studies involving maltreated children (Lyon & Dorado, 2008; Lyon & Saywitz, 1999), that children might be better at labeling "truth"/"lie" and T/F statements as "good"/"bad" than at labeling T/F statements as "truth"/"lie" (Task B < C < D).

Third, we hypothesized that children would be better at (a) assessing whether statements were the "truth" than whether they were a "lie" (Task B) and (b) assessing whether "truth" was good/bad than whether "lie" was good/bad (Task D) (Lyon, Carrick, et al., 2008).

METHOD

Participants

Participants included 183 maltreated and non-maltreated children, ages 4–6 years (M = 5 years 3 months, range = 4 years 0 months to 7 years 0 months), with approximately equal numbers of boys (49%, N = 90) and girls (51%, N = 93). The sample was ethnically diverse: 59% Latino (N = 108), 24% African-American (N = 44), 10% Caucasian (N = 18), and 7% Asian, biracial, other, or unknown (N = 13).

The maltreated sample (N = 94) consisted of children substantiated as suffering from child neglect and/or physical or sexual abuse who had been removed from the custody of their parents or guardians. Children gave their assent to participate, and consent was obtained from the Presiding Judge of Juvenile Court and the Children's Law Center, which represents children in dependency proceedings. Children were not eligible if they were awaiting an adjudication hearing or a contested disposition hearing on the date of testing (because they might be asked to testify), if interpreter services were provided to their family and they were clearly incapable of communicating with the researchers in English, or if their attorney had objected to their participation.

In addition to being ethnically diverse, maltreated children in this court population are of disproportionately low SES (Lyon & Saywitz, 1999). Hence, we recruited the non-maltreated sample (N = 89) from schools serving predominantly low-income ethnic minority families in neighborhoods comparable to those from which most maltreated children were removed. Most of the non-maltreated participants attended schools in which over 90% of the children were receiving free or reduced price meals (Ed-data, 2008), a common proxy for economic disadvantage (e.g., Goolsbee & Guryan, 2006). Children who were not in the custody of one or both parents were excluded from the non-maltreated sample because of the potential that they had been removed from their parent's care due to maltreatment.

The maltreated and non-maltreated children were comparable in gender composition, χ^2 (1) = .132, p = .72. The maltreated children were, on average, several months older (M = 5 years 6 months, SD = 10.7) than the non-maltreated children (M = 5 years 1 month, SD = 8.2), t (181) = 3.8, $p < .001$, d = .56, but this difference was due to a larger number of older maltreated children in the sample. Hence, when divided into younger (N = 90) and older (N = 93) groups using a median split (younger including children 5 years 3 months and younger, older including children 5 years 4 months and older), the younger maltreated children were comparable in age to the younger non-maltreated children, t (88) = .45, p = .66, d = .10 (both groups M = 4 years 9 months), whereas the older maltreated children were older than the older non-maltreated children, t (91) = 2.8, p = .006, d = .59 (maltreated M = 6 years 1 month, non-maltreated M = 5 years 9 months). A smaller percentage of the maltreated children was Latino (51%, N = 48) than the non-maltreated children (67%, N = 60), χ^2 (1) = 5.05, p = .03, but there were comparable proportions of Caucasians (maltreated: 12%, N = 11; non-maltreated: 8%, N = 7, χ^2 (1) = .76, p = .38) and African-Americans (maltreated: 29%, N = 27; non-maltreated: 19%, N = 17, χ^2 (1) = 2.32, p = .13). To account for the differences between the two samples, we included age and ethnicity (Latino vs. non-Latino) in subsequent analyses, and Latinos and non-Latinos were weighted equally.

Materials and Procedure

Children's understanding was assessed via four tasks: acceptance/rejection of T/F statements (Task A), truth/lie labeling of T/F statements (Task B), good/bad labeling of T/F statements (Task C), and good/bad labeling of "truth"/"lie" (Task D). Each task consisted of eight yes/no questions, so that each child answered a total of 32 questions, with the number of questions about "truth" or "lie," "good" or "bad," true statements or false statements, being equal within tasks. (Because of a transcription error, some of the children were given an additional "lie" story on the B task. We corrected for this error by calculating proportion correct scores.) The order in which the tasks were administered was counterbalanced using a Latin square design.

For Tasks A, B, and C, each trial depicted a target object and a story child with a talk bubble containing the target object (four trials) or a different object (four trials). The experimenter first pointed to the target object and asked the participant, "What is this?" and accepted the participant's label. The experimenter then said, pointing to the story child, "This boy (or girl) looks at the [participant's label] and says 'It's a [object in talk bubble].'" For example, in a story in which the target object was a cat and the talk bubble object was a dog, the experimenter would say, "This boy looks at the cat and says 'It's a dog.'"

The specific questions then asked of the participant varied across tasks. In Task A, the experimenter pointed at the target object and asked "Is this a [object in talk bubble]?" In Task B, the experimenter asked the participant

"Did the boy/girl tell the truth?" or "Did the boy/girl tell a lie?" In Task C, the experimenter asked the participant "Did the boy/girl say something good?" or "Did the boy/girl say something bad?"

For Task D, each trial only depicted a story child. The experimenter told the participant the name of the story child (to reduce the monotony of the stories), and said that the story child either "told the truth" or "told a lie," then asked "Did s/he say something good?" or "Did s/he say something bad?"

Children received a "1" for each correct response, a "0" for each incorrect response, and a ".5" for "don't know" or incomprehensible responses (so that a failure to answer "yes" or "no" would constitute chance responding). Only .3% of children's responses were "I don't know" or non-responsive, and either excluding these responses or coding them as incorrect had no effect on any analyses.

RESULTS

Preliminary analyses revealed that children's performance was not significantly related to gender but that Latino children performed less well than other ethnicities (with no differences between Caucasians and African-Americans). Subsequent analyses excluded gender. Additionally, children's performance did not vary depending on the order of questions or tasks, ruling out fatigue or practice effects.

We first tested our first two hypotheses, which concerned overall task differences: that (1) children would be more proficient at accepting true and rejecting false statements (Task A) than at labeling true and false statements as such (Tasks B, C, and D) and (2) children's performance on the labeling tasks (B, C, and D) would not differ. We conducted a repeated measures analysis of variance (ANOVA) on children's proportion accuracy with task (Tasks A vs. B vs. C vs. D) as a within-subjects factor and age group (younger vs. older), maltreatment status, and Latino ethnicity as between-subjects factors.

Significant main effects emerged due to task, F (3, 525) = 90.08, $p < .001$, $\eta_p^2 = .34$; age, F (1, 175) = 23.20, $p < .001$, $\eta_p^2 = .12$; and ethnicity, F (1, 175) = 10.92, $p = .001$, $\eta_p^2 = .059$. Significant interactions also emerged between task and age, F (3, 525) = 9.00, $p < .001$, $\eta_p^2 = .049$; task and maltreatment, F (3, 525) = 2.76, $p = .04$, $\eta_p^2 = .016$; and task, age, and maltreatment, F (3, 525) = 2.84, $p = .037$, $\eta_p^2 = .016$.

The significant main effects of age and ethnicity were due to the fact that overall, older children ($M = .87$) outperformed younger children ($M = .79$) and non-Latino children ($M = .87$) outperformed Latino children ($M = .80$). Inspection of the means (Table 1) revealed that performance on Task A (acceptance/rejection of true and false statements) was higher than the other tasks, which differed little except among the younger maltreated children.

To tease apart the meaning of the three-way interaction, we conducted individual tests on task differences among young maltreated, young-non-maltreated, old-maltreated, and old-non-maltreated children (using the Bonferroni correction). Analyses revealed that, for all but the younger maltreated children, performance on Tasks B, C and D were comparable. The younger maltreated children, however, exhibited the pattern B < C < D, F (3, 171) = 18.18, $p < .001$, $\eta_p^2 = .242$. In other words, these children exhibited better understanding of the wrongfulness of "truth" and "lie" than the meaning or wrongfulness of true and false statements.

To further explore the extent to which children's performance was similar across the labeling tasks, we examined whether children who were at ceiling on one task (8/8 correct) were also likely to be at ceiling on another labeling task, separately analyzing the young maltreated children because they alone showed task differences. For the young maltreated children, the conditional probabilities were highly variable, ranging from 20% to 71%. The lowest percentage was the likelihood that children would score at ceiling on Task B, given that they scored at ceiling on Task D, reflecting the better performance on Task D among this group. For the rest of the participants, however, the conditional probabilities ranged from 69% to 84%, exhibiting a great deal of uniformity across the tasks.

In summary, consistent with our predictions, Task A, which required children to reject or accept T/F statements, was substantially easier than the three labeling tasks. Our

Table 1 Mean proportion correct on tasks by maltreatment status and age

Task	Maltreated		Non-Maltreated	
	Younger	Older	Younger	Older
A: Accept/reject T/F statements	.92 (.15)	.97 (.10)	.97 (.10)	.93 (.17)
B: Label T/F statements as "truth"/"lie"	.60 (.26)	.85 (.23)	.59 (.22)	.72 (.27)
C: Label T/F statements as "good"/"bad"	.66 (.22)	.83 (.22)	.59 (.22)	.71 (.23)
D: Label "truth"/"lie" as "good"/"bad"	.73 (.22)	.78 (.22)	.60 (.20)	.74 (.23)

Standard deviations are in parentheses

Table 2 Proportion correct using "truth" and "lie" in B and D tasks, by maltreatment status and age

Task	Maltreated		Non-Maltreated	
	Younger	Older	Younger	Older
B: Label T/F statements as "truth"	.58 (.32)	.83 (.28)	.65 (.27)	.75 (.30)
B: Label T/F statements as "lie"	.63 (.27)	.84 (.25)	.53 (.28)	.69 (.34)
D: Label "truth" as "good"/"bad"	.83 (.21)	.85 (.20)	.71 (.29)	.85 (.20)
D: Label "lie" as "good"/"bad"	.63 (.37)	.72 (.31)	.48 (.31)	.64 (.35)

Standard deviations are in parentheses

prediction that children would perform similarly on the labeling tasks (Tasks B, C, and D) was supported, except among the younger maltreated children, who performed better on the tasks in which they evaluated the goodness/badness of truth-telling (Tasks C and D) than on the task in which they identified true and false statements as "truth" and "lie" (Task B). The ethnic differences showed that Latino children performed somewhat worse than non-Latino children, but these differences did not interact with any of the tasks or other factors.

We next tested our third hypothesis, which was that children would exhibit better performance on the "truth" trials than the "lie" trials (a) in Task B, in which children labeled true and false statements as "truth" or "lie," and (b) in Task D, in which children labeled "truth" and "lie" as "good" or "bad" (see Table 2). First, we conducted an ANOVA on children's Task B performance with "truth" vs. "lie" as a within-subjects factor and age, maltreatment status, and ethnicity as between-subjects factors. The effect due to term ("truth" vs. "lie") was nonsignificant, F (1, 175) = 1.76, $p = .19$, $\eta_p^2 = .010$, but the effects due to age, F (1, 175) = 28.00, $p < .001$, $\eta_p^2 = .138$; ethnicity, F (1, 175) = 12.77, $p < .001$, $\eta_p^2 = .068$; and the interaction between term and maltreatment status, F (1, 175) = 8.33, $p = .004$, $\eta_p^2 = .045$ were all significant. The age and ethnicity effects reflect generally better performance on Task B among older and non-Latino children, described above. The interaction reflected the fact that, although the non-maltreated children exhibited better performance on "truth" ($M = .74$) than on "lie" ($M = .64$), this pattern was not observed among the maltreated children ("truth" $M = .71$, "lie" $M = 74$). Stated another way, whereas the maltreated and non-maltreated children performed equally well on "truth," F (1, 175) = .66, $p = .42$, $\eta_p^2 = .004$, the maltreated children were better than the non-maltreated children at interpreting "lie," F (1, 175) = 5.76, $p < .001$, $\eta_p^2 = .032$.

Second, we conducted a similar ANOVA on children's Task D performance with "truth" vs. "lie" as a within-subjects factor and age, maltreatment status, and ethnicity as between-subjects factors. The effect due to term ("truth" vs. "lie") was significant, F (1, 175) = 42.26, $p < .001$, $\eta_p^2 = .195$, reflecting the fact that performance on "truth" was superior to "lie." There were no other main effects or two-way interactions, but there was a significant three-way interaction among term, maltreatment, and ethnicity, which appeared to reflect the fact that the term difference was not significant among the maltreated non-Latino children, although the means were in the same direction ("truth" $M = .82$, "lie" $M = .66$).[1]

In summary, maltreated children were better at labeling "truth" as good/not bad than "lie" as bad/not good and non-maltreated children were better at identifying whether true/false statements were the "truth" than whether they were a "lie." Maltreated children's different pattern of results suggested that their performance did not benefit as much when asked about "truth" vs. "lie."

DISCUSSION

The purpose of this study was to examine testimonial competence in the population of children who are most likely to be questioned about their understanding of the truth and lie—maltreated children. Several significant findings emerged, all of which have important implications for how children's oath-taking competency should be assessed in legal contexts.

Accepting/Rejecting vs. Labeling T/F Statements

Consistent with our first hypothesis, we found clear evidence that maltreated and comparable non-maltreated children are better able to appropriately accept and reject T/F statements (Task A) than to label those statements (Tasks B, C, and D). Stated another way, children distinguish between true and false statements at a younger age than they are able to articulate this understanding through the labeling of T/F statements as either "truth"/"lie" or "good"/"bad." Our results are consistent with other findings showing that

[1] All of the significant findings were confirmed via non-parametric tests, averting possible difficulties with the non-normality of the proportion score distributions.

children become adept over time at consciously accessing and speaking about concepts (Dienes & Perner, 1999; Karmiloff-Smith, 1992), and reflect the emergence of a metalinguistic understanding of truth and falsity.

In practical terms, this means that many children will accept true propositions and reject false propositions even though they are incapable of articulating their understanding of the truth, lies, or falsehoods. *State v. Superior Court* (1986), an Arizona appellate court case, illustrates the distinction between an ability to reject false statements and an ability to label false statements as such. The prosecuting attorney attempted to qualify a 3-year-old to testify. In response to the question, "if I said…this is a black crayon, would that be right?" the child responded "But it's red" (p. 287). Hence, the child successfully contradicted a false statement with a true statement, even though she failed to demonstrate an ability to label the statement itself as "wrong." The court held the child competent to testify, noting that "while she did not grasp abstract concepts, she readily pointed out errors of fact in various questions" (id.).

In jurisdictions in which children are not required to take the oath, but in which the courts insist upon an understanding of the importance of telling the truth, child witnesses could potentially qualify through tests of their proclivity to accept true statements and reject false statements. However, if some form of an oath is required, many children who reliably accept true statements and reject false statements will nevertheless be incapable of promising to "tell the truth" because they lack an understanding of the kinds of statements to which "the truth" refers.

Labeling Tasks and Maltreatment Differences

Consistent with our second hypothesis, we found that children performed similarly across the labeling tasks (B, C, and D), except for the younger maltreated children, who evinced better understanding that false statements and lies are "bad" (Tasks C and D, respectively) than that false statements are "lies" (Task B). Maltreated children may first learn that "lies" are punished and only later understand that "lies" uniquely apply to false statements. This difference was not evident among non-maltreated children (nor older maltreated children). Nor did Lyon, Carrick, et al. (2008) find such differences using comparable tasks with predominantly upper-middle class Caucasian children. The young maltreated children's performance is consistent with findings from prior research on maltreated children's understanding of "truth" and "lie" (Lyon & Dorado, 2008; Lyon & Saywitz, 1999), which also suggested that young maltreated children have a better understanding of the negative connotation of "lie" than its denotation (Lyon & Dorado, 2008). Unlike prior research on maltreated children, however, the tasks used here were parallel, thus controlling for possible extraneous differences in task difficulty.

The significance of distinguishing between children's understanding of the wrongfulness of lying and of the meaning of lying has practical implications for qualifying children to take the oath. A child may appear competent when asked if it is good or bad to tell lies but fail to understand what a "lie" is. That child will endorse telling the truth when asked to promise to do so. However, whether the child feels obligated to testify truthfully will depend on the child's understanding of a general obligation to speak truthfully rather than the child's recognition of what the promise entails.

Understanding of 'Truth" vs. "Lie"

A third significant finding was that children sometimes appeared to understand "truth" better than "lie." Specifically, children were more adept at stating whether true and false statements were the "truth" than whether they were "lies" (Task B) and more adept at asserting that the "truth" is "good' and "not bad" than at labeling "lie" as "not good" and "bad" (Task D). These findings were more consistent among the non-maltreated children. Similar differences were found when the same tasks were used with a group of predominantly upper-middle-class Caucasian children (Lyon, Carrick, et al., 2008).

The reasons why children often performed better on "truth" than on "lie" questions are unclear. With respect to labeling of true and false statements as "truth" and "lie" (Task B), better performance on "truth" might reflect uncertainty whether the false statements were indeed "lies," since those statements could have been mistakes or pretense. However, this is unlikely because research examining children's understanding of distinctions between lies and mistakes (Siegal & Peterson, 1996, 1998) or pretense (Taylor, Lussier, & Maring, 2003; cf. Dias & Harris, 1990) has shown that children presume that false statements are lies and tend to require strong contextual cues before inferring otherwise. Moreover, this would not explain why children would be worse at evaluating statements explicitly referred to as "lies" than statements referred to as "truth" (Task D).

Children's better performance on "truth" may reflect a positivity bias, whereby children are reluctant to apply negative labels to the actions of others (Lyon, Carrick, et al., 2008). Maltreated children, in contrast, have been found to have negative expectations of others' behavior (Toth et al., 2000), and this might explain why they were less likely than non-maltreated children to respond differentially to "truth" and "lie." Future research can attempt to uncover the underlying reasons for these differences.

Regardless of the mechanisms, children's better performance on "truth" than on "lie" has clear practical significance: as discussed in the introduction, oath-taking competency does not require an understanding of the word "lie." For one, a child who understands "truth" but not "lie" can successfully identify statements as the truth or not, and can promise to "tell the truth." Hence, attorneys questioning children who appear to have difficulty with the word "lie" may exclusively ask questions about "truth." Indeed, the latest version of the NICHD structured protocol for forensic interviewing only includes a discussion of "truth" with the child (Lamb, Orbach, Hershkowitz, Esplin, & Horowitz, 2007).

Validity of Competency Assessments

The differences in performance across tasks highlight the fact that whether a particular child witness appears competent or incompetent will vary depending upon the skills of the individual questioning the child, who is likely to be an attorney or a judge with limited understanding of child development. Furthermore, prior research with maltreated children has demonstrated that children's performance on questions about "truth" and "lie" is related to their verbal development (Lyon & Saywitz, 1999), and although we did not assess children's verbal abilities, the fact that Latino children's performance suffered overall suggests that vocabulary played a part in this study as well. Although, as noted above, the competency questions have some ability to identify children who are capable of understanding the oath and therefore more likely to be influenced by the oath (Lyon, Malloy, et al., 2008; Talwar et al., 2004), strict competency requirements are likely to exclude many children who have some understanding but find it difficult to demonstrate their comprehension (Lyon, Malloy, et al., 2008). One possible solution is for jurisdictions that choose to keep the competency requirements to endorse standardized methods for accurate assessment.

In conclusion, this study, the first to examine maltreated and non-maltreated children's oath-taking competency, demonstrated that the way in which children are questioned about their understanding of the truth and lies plays a major role in their apparent understanding. Even the youngest children reliably reject false statements and thus distinguish between truth and falsity. Hence, in jurisdictions in which children can testify unsworn, yet are expected to appreciate truthfulness, they may be qualified by being asked to accept or reject true and false statements rather than to label statements as such. Children's explicit understanding of "truth" and "lie" may be both under- and overestimated. Children may understand the wrongfulness of lying but not understand what lying is. Oath-taking competency is not adequately assessed merely by ascertaining whether the child understands that it is wrong to lie. Children may understand "truth" but not understand "lie." Questioners attempting to qualify children should begin with questions about what is true or not true. Questioning children about their oath-taking requires attention to subtle differences across tasks that may make the difference in whether a child is allowed to testify.

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