Children's elaborated responses to yes-no questions in forensic interviews about sexual abuse

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Abstract

Children tend to answer yes-no questions with unelaborated "yes" and "no" responses, but the types of details likely omitted from unelaborated answers have not been explored. This study examined 379 4- to 12-year-olds' answers to yes-no questions in forensic interviews about CSA (N = 11,187), focusing on age differences in elaborated responses. As expected, older children elaborated more frequently than younger children. Our novel categorization of elaboration types revealed that although there were no age differences in children's use of nominal corrections (correcting a label), or in emphatic negations (giving forceful denials), older children were more likely to give narrative elaborations (providing additional narrative information), wh-elaborations (answering implicit wh- questions), and qualified elaborations (avoiding potentially misleading implications of unelaborated "yes" and "no" responses). The results suggest that children's developing understanding of the implied meaning of questions and responses helps to explain age differences in elaborative responses to yes-no questions.

Despite best practice recommendations emphasizing the use of open-ended requests for recall (Lamb et al., 2018), yes-no questions are common in forensic interviews and court trials involving child victims of sexual abuse (Andrews et al., 2016; Lamb et al., 2018; Stolzenberg & Lyon, 2014; Stolzenberg et al., 2020). One problem is that younger children tend to answer yes-no questions with unelaborated "yes" and "no" responses. Little research has examined the reasons underlying children's reticence, and the kinds of details likely omitted by children's unelaborated responses.

In this study, we examined how 4- to 12-year-old children respond to yes-no questions in forensic interviews, focusing on age differences in providing different types of elaborated responses. In what follows, we first review the research demonstrating that younger children tend to answer yes-no questions with an unelaborated "yes" or "no," that they fail to give "don't know" responses, and that they fail to signal their incomprehension. We then introduce a novel categorization of elaborated responses that distinguishes between "nominal corrections" and "emphatic negation" on the one hand, and "narrative elaboration," "wh-elaboration," and "qualified elaboration" on the other. After defining the categories, we hypothesize that the latter types of elaboration will exhibit age differences and suggest this could reflect children's developing awareness of the way in which yes-no questions implicitly request elaboration or in which unelaborated responses lead to unwanted inferences.

How do children answer yes-no questions?

Unelaborated responses. Observational research has found that children start to nod affirmatively and shake their head negatively in response to yes-no questions from 14-16 months (Kettner & Carpendale, 2013), and begin to verbally respond to yes-no questions at about 19 months of age (Choi, 1988; Fenson et al., 1994; Pea, 1980). As their vocabulary grows, children

initially expand on their answers (e.g., responding “yes, it’s a car” to “Is it a car?”), but then before their third birthday become proficient at providing elliptical “yes” or “yes, it is” responses (Thornton, 2010).

Research examining children from 3 to 17 years of age thus finds that younger children usually fail to elaborate on their yes-no responses, as demonstrated in experimental work (Stolzenberg et al., 2017), forensic interviews (Korkman et al., 2006; Szojka et al., 2023; Verkampt et al., 2019), and court trials (Stolzenberg et al., 2020). For example, examining transcripts of investigative interviews with child victims of sexual abuse and domestic violence, Verkampt et al. (2019) found that children over the age of 11 provided elaborated responses to yes-no questions twice as often (23%) as children aged three to seven years (10%). Younger children’s unelaborated “yes” and “no” responses to yes-no questions are an example of “formal reticence,” whereby they provide minimally sufficient responses to questions, given the form of the question (Stolzenberg & Lyon, 2017). Similarly, when asked forced-choice questions, which ask the respondent to choose between two proffered responses, younger children tend to choose without elaborating on their choice (Stolzenberg et al., 2020).

Few “don’t know” responses. Yes-no questions have high “response availability,” which refers to the ease with which one can generate a response (McWilliams et al., 2021). Formal reticence coupled with high response availability increases children’s tendency to guess, and correspondingly reduces the likelihood that they will give “don’t know” responses. In both experimental (Peterson & Grant, 2001; Poole & Lindsay, 2001; Rudy & Goodman, 1991) and observational work (Earhart et al., 2014; Korkman et al., 2006) children rarely answer “don’t know” to yes-no questions. For example, examining forensic interviews with 4- to 13-year-olds,

Earhart and colleagues (2014) found that only 4% of yes-no questions elicited a “don’t know” response.

Although research has not found that younger children are more likely to guess in response to yes-no questions than older children (Earhart et al., 2014; Peterson & Grant, 2001), there are theoretical reasons to expect them to do so. Three-year-old children have a limited understanding of the sources and causes of knowledge and ignorance (Kloo & Rohwer, 2012). As such, they acknowledge a lack of knowledge only if a response is unavailable. If they are capable of generating a response, even if based on nothing more than pure speculation, they will claim to know (Kloo et al., 2017; Rohwer et al., 2012). Forced-choice questions also have high response availability, because the respondent must simply repeat one of the proffered choices. Accordingly, younger children rarely answer “don’t know” to forced-choice questions, and choose one of the options, even when neither choice is correct (Peterson & Grant, 2001; Rocha et al., 2013). In contrast, “don’t know” responses are more common in response to wh- questions (i.e., questions with “what”, “who”, “where”, “when” and “how”), because wh- questions require the child to generate the queried information (Waterman et al., 2004).

Few signs of incomprehension. Children are less likely to express incomprehension when asked yes-no questions, compared to wh- questions (Malloy et al., 2015). Instead, when asked incomprehensible yes-no questions, children preferentially answer “no” by four years of age (Fritzley & Lee, 2003; Fritzley et al., 2013). Furthermore, younger children are less likely to recognize that they lack understanding, making them less likely in general to express incomprehension (Henderson & Lyon, 2021).

Response biases. Children’s “no” bias in response to incomprehensible questions raises a different issue with yes-no questions, concerning the potential for such questions to elicit

response biases. Here, the picture is less clear: Some research has found a "yes" bias among preschool children (Mehrani & Peterson, 2018; Peterson & Grant, 2001; Peterson et al., 1999), though other studies have failed to do so (Brady et al., 1999; Greenhoot et al., 1999; Peterson & Briggs, 1997). Furthermore, children are inclined to answer "no" when asked about negative events, particularly when they may feel implicated (Lyon, 2014).

Types of elaborated responses to yes-no questions

Although formal reticence predicts unelaborated yes-no responses to yes-no questions, it does not explain why older children elaborate more often than younger children. Furthermore, although research has documented increasing rates of elaboration with age, it has not examined whether certain types of elaboration emerge earlier than others. Review of the literature reveals several different types of elaborated responses that may emerge at different ages, including nominal corrections, emphatic negations, narrative elaborations, wh- elaborations, and qualified elaborations.

Nominal corrections. Research on children's word learning demonstrates that at a very young age, children reject false labels for objects in response to yes-no questions and provide the correct label (Hummer et al., 1993; Pea, 1980, 1982). Hummer and colleagues (1993) found that 2.5-year-old children gave "no" responses elaborated with a corrective label (Q: "Is this a cat?" A: "No, a dog.") more often than unelaborated denials.

Emphatic negations. In the English language, emphatic response items (e.g., "no way!"; Brems & Van linden, 2018), absolute negators (e.g., "no, never!"; Lucas & Willis, 2012; Pullum & Huddleston, 2002) and boundary markers (e.g., "that's it"; Henderson et al., 2023) may be used to strengthen a "no" response. Although we are not aware of research examining the

development of emphatic negation, its use has been informally observed in experimental work with 3- to 4-year-olds (Woolley, 1990).

Narrative elaborations. Narrative elaborations refer to responses in which the child provides additional narrative information about the event being discussed. Younger children may be less inclined to produce narrative information for two reasons. First, with age children become increasingly adept at producing narrative reports of their experiences, in which they describe the context of events, and provide a sequential account of actions, observations, and subjective reactions (Fivush et al., 1995). Second, younger children are likely to have difficulty in producing narrative information in response to yes-no questions because of their general difficulty in recalling information. Yes-no questions tap recognition memory, in which one must merely determine whether information has been previously encountered. Wh- questions tap recall memory, in which one must generate information. Children exhibit large age differences in the productivity of their recall but small differences in the productivity of their recognition memory (Ceci & Bruck, 1993). In order to elaborate on a yes-no question and provide narrative information, the child has to generate that information, and thus utilize their recall memory.

Wh- elaborations. Some yes-no questions implicitly ask wh- questions. Most notable are "do you know" questions with a wh- word (e.g., "Do you know where it was?" which implies "Where was it?") and yes-no questions containing the polarity items "any" and "some" (e.g., "Was anyone there?" which implies "who was there?"; Kiefer, 1980; Yadugiri, 1986). Research has found age increases in children's tendency to elaborate in their response to both "do you know" questions that contain a wh- word (Evans et al., 2014), and yes-no "any" questions (Szojka et al., 2023). However, other yes-no questions also imply a wh- question (e.g., "Do you have a favorite toy?"), and children's wh- elaborations have not been examined more generally.

Qualified elaborations. Qualified elaborations refer to elaborated responses in which the child communicates that the correct answer is neither a simple "yes" or "no," or that it is both "yes" and "no." Qualified elaborations appear to be particularly complex, because they may reflect awareness that an unelaborated yes-no response is underinformative and has misleading implications.

With respect to forced-choice questions, it is well understood that children tend to choose one of the proffered options when neither option is correct (Mehrani & Peterson, 2015; Rocha et al., 2013). However, very little research has examined children's tendency to give unelaborated "yes" and "no" responses to yes-no questions when neither "yes" nor "no" is correct. An exception is children's description of clothing placement. Research has shown that young children give unelaborated "yes" and "no" responses to yes-no questions about clothing placement when the clothes are in an intermediate position (Stolzenberg et al., 2017; Wylie et al. 2021b). However, in these situations (e.g., when pants are around the knees), unelaborated "yes" or "no" responses to "Are the pants on?" are underinformative. Furthermore, given Grice's (1975) Maxim of Quantity ("Make your contribution as informative as is required [for the current purposes of the exchange], p. 45) and Levinson's (2000) Q-heuristic ("What isn't said isn't", p. 31), unelaborated "yes" and "no" responses have misleading implications. When clothes are in an intermediate position, an unelaborated "yes" to "Are the pants on?" falsely implies that the pants are totally on, and an unelaborated "no" falsely implies that the pants are completely off.

Children's unelaborated "yes" and "no" responses to questions about clothing placement have obvious implications for questioning about sexual abuse (Stolzenberg & Lyon, 2017). Younger children's failure to qualify their "yes" and "no" responses is likely to be legally

significant in other respects as well. For example, older children may qualify their responses when they are describing an unsuccessful attempt of abuse (e.g., “No, but he tried”) or indicating that their actions were compelled by threats or force (e.g., “Yes, because he made me”). Furthermore, qualified responses may correct inaccurate presuppositions (e.g., Q: “Did you get any blood on your clothes?” A: “I wasn’t wearing any clothes.”). Unqualified responses will lack all of this information. Moreover, unqualified responses may lead to inconsistencies, which have been shown to occur more often when children are asked yes-no questions (Andrews et al., 2015). For example, a child might answer both “yes” and “no” to questions like “Were you mad?” when they experienced only mild anger, whereas an older child could consistently give qualified responses “yes, a little,” and “no, not very.”

Although developmental research has not examined the development of children’s qualified elaborations in response to yes-no questions, a considerable amount of attention has been paid to an analogous issue: children’s understanding of scalar implicature (Noveck, 2018). An example of scalar implicature is the interpretation of the word “some.” When one says “some,” one implies “not all,” though logically “some” includes “all.” Children as old as eleven years of age will respond affirmatively to statements that are logically true but underinformative (e.g., “some giraffes have long necks”; Noveck, 2001), though this tendency decreases with age (Horowitz et al., 2018). An adult response to a yes/no question such as “Do *some* giraffes have long necks?” will usually be qualified in order to avoid false implications. One might answer “yes,” thus answering logically, but add “in fact, *all* giraffes have long necks,” thus avoiding the implication that *only* some giraffes have long necks. Alternatively, one might answer “no”, thus answering pragmatically, but add “actually, *all* giraffes have long necks,” thus avoiding the implication that *no* giraffes have long necks.

There are parallels between children's underinformative response to questions containing scalar terms and their unqualified responses to yes-no questions. First, interviewers' questions may contain scalar terms (e.g., "sometimes"), and younger children's unelaborated responses may be misleading. For example, the literature on scalar implicatures suggests that younger children will answer "yes" to a question using the word "sometimes" when the correct answer is "all the time." Second, older children's elaborated responses may contain scalar terms (e.g., "sometimes") that avoid misinterpretation. For example, a child might respond "sometimes" to a question like "Does it hurt when he does that?", avoiding the implication of an unelaborated "yes" response that it always hurts. Children's limited understanding of scalar terms thus provides an example of the problem with unqualified responses to yes-no questions.

The present study

The purpose of this study was to examine age differences in 4- to 12-year-old children's responses to yes-no questions in forensic interviews about sexual abuse, focusing on elaborated responses. We coded for irrelevant responses, "don't know/don't remember" responses, and requests for clarification, and distinguished between unelaborated and elaborated "yes" and "no" responses. A novel coding scheme was developed to categorize children's elaborated responses as nominal corrections, emphatic negations, narrative elaborations, wh- elaborations, and qualified elaborations.

We made a number of predictions: 1) We expected to replicate prior findings that younger children would be less likely to give elaborated responses than older children, and that for all children, elaborated responses would be uncommon. We also anticipated that younger children would provide 2) more irrelevant responses (including a failure to respond), 3) fewer "don't know" responses, and 4) fewer requests for clarification than older children. Given the

mixed findings with respect to "yes" and "no" biases, we did not make any prediction with respect to age differences in response biases. Most novel was our examination of the types of elaborated responses. We anticipated that although younger children would give 5) nominal corrections and 6) emphatic negations at similar rates to older children, older children would provide 7) narrative elaborations, 8) wh- elaborations, and 9) qualified elaborations more often than younger children.

Method

Sample

We examined transcripts of 379 forensic interviews with children (75% female) aged 4 to 12 years (M = 7.45, SD = 2.62) alleging sexual abuse. Four-year-olds were the youngest children routinely interviewed in child sexual abuse cases at the selected Child Advocacy Centers, and 12 years was chosen as the upper age limit because children aged 10 and above have been shown to elaborate more often to yes-no questions, generally (Verkampt et al., 2019), and in response to questions that implicitly request elaborated responses (Stolzenberg & Lyon, 2017, Szojka et al., 2023). Transcripts were excluded if the interview was conducted in Spanish. The interviews were conducted between 2004 and 2013 by trained forensic interviewers at five Child Advocacy Centers in California. Cases were referred to the Child Advocacy Centers by law enforcement or Child Protective Services for possible prosecution and dependency intervention. Most of the interviewers received California Forensic Interview Training, which provides interviewers with the 10-Step Protocol (Lyon, 2014), a revision of the original NICHD Protocol. The interviews were transcribed and anonymized for training purposes, either with the consent of the parents/guardians or, when the children were under the jurisdiction of the dependency court, the

court. The use of archived interviews for research purposes was approved by the University of Southern California Institutional Review Board as exempt (45 CFR Section 46.014(d)(4)(ii).)

Coding

All yes/no questions were extracted from a larger data file coded for question type for prior research (Szojka et al., 2023). In preparation for data analysis for the present study, all question-answer pairs coded for prior research were checked. Coding errors were corrected, resulting in the re-coding of approximately 1% of yes-no questions and answers. We excluded questions where we could not be certain that the response was elicited by a yes-no question, such as compound questions (e.g., “Where did he touch you? On your leg?”; n = 926) in which the child could be answering the wh- question, as well as facilitators (e.g., “Really?”, “Yeah?”, etc.; n = 451) and questions echoing the child’s previous response (n = 983), which are designed to encourage the child to continue the narrative rather than posing a yes-no question. Indirect wh-questions with an embedded wh-word (e.g., “Do you know where he went?” / “Did he tell you what to say?”, n = 390) were also excluded, because they explicitly mentioned the wh- word, and thus could be construed as wh- questions.

The 11,187 yes-no questions asked by interviewers were coded for whether children responded with irrelevant information (or failed to respond), gave a “don’t know” response, requested clarification, or gave an unelaborated affirmation, unelaborated denial, or elaborated response. Head nods were coded as affirmations, and headshakes were coded as denials. The remaining response types (uncertain response, conflicting response) were coded as “other.” Response types were exclusive, and the elaborated response category took precedence over other categories (e.g., “I don’t know cause I didn’t hear what he said” was coded as elaborated). Elaborated responses were further coded as a) nominal corrections, which corrected a label (e.g.,

Q: “Did Ryan show you this picture?” A: “No, my mom did.”); b) emphatic negations (e.g., Q: “Not touched you there?” A: “He never touched me there”); c) narrative elaborations (e.g., Q: “Kristy's sister came out?” A: “Yeah and then he started pretending like he was sleeping on his bed.”); d) wh- elaborations, which were defined as responses that answer an implicit wh-question (e.g., Q: “Was anyone there?” A: “Yes, my mom and my brother.”); or e) qualified elaborations, which were defined as responses that alter the meaning of a “yes” or “no” response to avoid potentially misleading implications resulting from fully affirming or denying the question (e.g., Q: “Did he make anybody take their clothes off?” A: “He was trying to, but we said no.” Q: “Was it on your panties?” A: “No cause like he pulled down my underwear.”)

Interrater reliability

For the initial coding, coders were trained to achieve high reliability (Kappa equal to or greater than .80) on identifying yes-no questions, and for coding children’s responses as irrelevant, “I don’t know / remember,” a request for clarification, other, affirmation, or denial. Coding, general feedback (without reference to specific question-answer pairs), and recoding occurred until coders achieved reliability on a sample of 1000 question-answer pairs and an additional sample of 400 lines specifically chosen to include questions and responses that are particularly difficult to code. Coders also received individualized feedback on a practice transcript before they began coding the study sample. To test the reliability of novel elaboration codes, a random selection of 20% of question-answer pairs across 20% of transcripts were independently re-coded. All Kappas for novel codes were .80 or greater, including the identification of elaborated responses (K = .90) and elaboration subtypes; nominal corrections (K = .88), emphatic negations (K = .90), narrative elaborations (K = .90), wh-elaborations (K = .88), and qualified elaborations (K = .88).

Analysis plan

Descriptive statistics were calculated to examine the frequency of each response type. Analyses were conducted using generalized linear mixed effect models (GLMMs). GLMMs combine the properties of linear mixed models (which incorporate random effects) and generalized linear models (which handle non-normal data) and are preferable to traditional analysis of variance (ANOVA) models because they have fewer assumptions, handle binary response variables, and maximize power while simultaneously estimating between-subject variance (Bates et al., 2015).

A by-subject random effect was included for each child to account for differences in individual response characteristics, and children's age (continuous) was included as a fixed effect. Binary dependent variables included 1) elaborated and unelaborated responses, 2) irrelevant responses (including a failure to respond), 3) "don't know" responses, and 4) requests for clarification. Elaborated responses were then further examined with the binary dependent variables 1) nominal corrections, 2) emphatic negations, 3) narrative elaborations, 4) wh-elaborations, and 5) qualified elaborations. Analyses were performed using the glmer function in the R package lme4 with the bobiqa optimizer (Bates et al., 2015) and model fitting was computed using the anova function in the R stats package (R Core Team, 2013). Although age was added to the models as a continuous variable, means are reported for younger (4 to 7 years of age) and older children (8 to 12 years) to illustrate age differences. The results from the best-fit models are reported alongside the unstandardized fixed effects estimates (*B*), standard errors of the estimates (*SE*) and estimates of significance (*Z* and *p* values).

Results

Children provided unelaborated “yes” or “no” answers to 65% (n = 7,297) of yes-no questions and elaborated in response to 23% (n = 2,597). As predicted (Hypothesis 1), younger children were significantly less likely to give elaborated responses (18%) than older children (28%; B = .13, SE = .02, Z = 8.18, p < .001). Eight percent (n = 858) of yes-no questions elicited irrelevant responses, including a failure to respond. As predicted (Hypothesis 2), younger children were twice as likely to provide an irrelevant response (10%) as older children (5%, B = .15, SE = .02, Z = 6.58, p < .001). The overall rate of “don’t know” responses was 2% (n = 197). As predicted (Hypothesis 3), younger children were half as likely (1%) to give “don’t know” responses as older children (2%, B = .17, SE = .04, Z = 3.89, p < .001). However, requests for clarification (2%, n = 183) were equally infrequent in younger children’s (2%) and older children’s (2%) responses, contrary to our prediction of age differences (Hypothesis 4). The remaining 0.6% (n = 70) of responses were categorized as “other,” which included conflicting or uncertain responses. There were no discernible age effects among “other” responses. Table 1 summarizes the frequencies of response types to yes-no questions.

Response bias

With respect to children’s potential bias to answer “yes” or “no,” unelaborated “yes” (32%, n = 3,556) and unelaborated “no” responses (33%, n = 3,723) were comparably frequent. Examining children’s unelaborated “yes” and “no” responses, younger children were significantly more likely to say “yes” (50%) than older children (47%; B = .04, SE = .02, Z = 2.53, p = .01), though the difference was small.

Types of elaboration

We then examined the different types of elaborated responses. Table 2 shows the average age of children providing each of the different types of elaboration. As can be seen, the average

ages for nominal corrections and emphatic negations were the lowest, whereas the average ages for the wh- elaborations, narrative elaborations, and qualified elaborations were the highest. Three percent of all responses (n = 381) were nominal corrections. There was no significant difference in the use of nominal corrections between younger children (3%) and older children (3%), consistent with hypothesis 5. Similarly, two percent of all responses (n = 269) were emphatic negation, again with no significant difference between younger children (2%) and older children (3%), consistent with hypothesis 6.

Narrative elaborations comprised 5% (n = 512) of all responses, with older children providing one and a half times more narrative elaborations (6%) than younger children (4%, B = .14, SE = .03, Z = 5.05, p < .001), consistent with Hypothesis 7. Eight percent of all responses (n = 849) were wh- elaborations, with older children providing one and a half times more wh-elaborations (9%) than younger children (6%, B = .10, SE = .02, Z = 5.63, p < .001), consistent with Hypothesis 8. Six percent of all responses were qualified elaborations (n = 659), with older children providing more than twice as many qualified elaborations (8%) as younger children (3%; B = .21, SE = .02, Z = 8.33, p < .001), consistent with Hypothesis 9.

Anecdotal examination of qualified elaborations. We identified several ways in which children's qualified elaborations avoided potentially misleading implications arising from unelaborated "yes" or "no" responses. Qualified elaborations often avoided underestimation of the severity of the alleged abuse. For example, a 9-year-old's qualified "yes" response described clothing removal, clarifying the sexual nature of the perpetrator's acts (Q: "His hands, ok. And when he took a picture of your private, did you have any clothes on?" A: "Yeah, I had my pajamas. But then he pushed, then he pulled them down."). Similarly, a qualified elaboration provided by an 8-year-old confirmed that the perpetrator's clothing was removed, even if the

child did not see him without clothing (Q: “Have you seen Uncle S with all his clothes off?” A: “No, but he did have them off, but I was closing my eyes.”). Children also used qualified elaborations to describe intermediate clothing placement, such as in the reports of two 10-year-olds (Q: “And was his private outside of his underwear?” A: “He went like that. He pulled his underwear to the side.”; Q: “Did you have a shirt on?” A: “[headnod] A long one but he put it up.”).

Qualified elaborations also described unsuccessful attempts of abuse in contexts where an unelaborated denial would imply that no abuse occurred, such as in the case of a 9-year-old (Q: “Ok now did he make you do the sex thing with him?” A: “He tried, but me and M said, 'no,' straight out.”). Similarly, in a case involving an 11-year-old, an unelaborated “no” would have failed to indicate that she has witnessed the abuse of her older sister (Q: “Did you see anything that day at the motel? A: “No, but there was another day I saw something.”). In some cases, qualified elaborations also provided context for delayed disclosures, potentially preempting credibility-challenging questions focusing on delays in disclosing. For example, a 9-year-old explained why he did not disclose touching by his stepfather to his mother in response to a yes-no question (Q: “Ok. And did you ever think about telling your mom about the touching?” A: “Well I did but I never wanted to leave. I didn't want to leave my stepsister.”).

As noted in the introduction, the developmental research most pertinent to our exploration of qualified elaboration has focused on children’s understanding and use of scalar terms, such as “some” (Noveck, 2018). Children’s qualified elaborations often avoided underinformative affirmations of scalar terms, such as a response by a 10-year-old (Q: “Now do you stay over at, sometime, with A?” A: “Every week.”). An unelaborated “yes” would have falsely implied that the child’s visits were irregular. Similarly, children often provided scalar

responses when an unelaborated “yes” or “no” would have suggested all or nothing. For example, when asked “And would he talk to you when he did that?”, an 8-year-old answered “sometimes.” Younger children occasionally used vague scalars, such as “a little bit” in the answers of a 6-year-old and a 5-year-old (Q: “Did your mommy see his [body]?” A: “A little bit.”; Q: “Have you seen any pictures or movies with people that have clothes off?” A: “Well, a little bit.”) or “not really” in the answers of a 4-year-old and a 7-year-old (Q: “Do you live with your dad too?” A: “No, not really.”; Q: “Did you tell anyone about that?” A: “Not really.”).

Discussion

This study examined 4- to 12-year-old children’s responses to yes-no questions in forensic interviews to assess the extent to which children elaborated on their responses. We also explored potential age differences in the types of elaborated responses, based on hypothesized complexity. As predicted (Hypothesis 1), younger children elaborated less frequently than older children, and unelaborated yes-no answers were the most common response among all children. Furthermore, we found that younger children provided more irrelevant responses (Hypothesis 2) and fewer “don’t know” responses than older children (Hypothesis 3); however, we did not find age differences in the frequency of clarification-seeking responses (Hypothesis 4). Both “don’t know” responses and requests for clarification were rare overall. With respect to a potential “yes” bias, younger children were more likely to answer “yes” than older children, though the overall rates of unelaborated “yes” and “no” responses were close to equal.

Our primary interest was in understanding the ways in which children elaborate their responses. Consistent with our hypotheses, our novel examination of elaboration types revealed that whereas younger children gave nominal corrections (Hypothesis 5) and emphatic negations (Hypothesis 6) at similar rates as older children, younger children were less likely to provide

narrative elaborations (Hypothesis 7), wh- elaborations (Hypothesis 8), and qualified elaborations (Hypothesis 9). In what follows, we discuss the findings in light of prior research and suggest future directions.

Unelaborated "yes" and "no" responses

The predominance of unelaborated "yes" and "no" responses is consistent with formal reticence, which describes children's tendency to provide minimally sufficient responses to questions, given the form of the question (Stolzenberg & Lyon, 2017). Because yes-no questions can be answered with simple "yes" and "no" responses, reticent responders will do so. Furthermore, given the ease with which one can say "yes" or "no," or even simply nod or shake one's head, "yes" and "no" responses have high response availability, making it easy to guess, and minimizing "don't know" and clarification-seeking responses (McWilliams et al., 2021). Younger children are sure to remember less and understand less than older children, and therefore have more reason to signal their ignorance or incomprehension. Nevertheless, they were *less* likely to give "don't know" responses than older children, and no more likely to seek clarification, which likely reflects both the ease of guessing and limits on children's insight into their knowledge and understanding (Henderson & Lyon, 2021; Kloo et al., 2017).

Response biases

As we noted in the introduction, the evidence for a "yes" bias among younger children is mixed, and children often exhibit a "no" bias in response to questions about unpleasant topics and in response to questions they don't understand. Hence, we made no prediction regarding age differences in children's tendency to answer "yes." We found that younger children answered "yes" slightly more often than older children (50% vs. 47%).

At first glance, since the percentages of "yes" responses for both age groups are close to 50%, the results also appear to provide little evidence of either a "yes" or a "no" bias. However, because we don't know ground truth (i.e., we cannot verify children's experiences), we don't know what percentage of yes-no questions *should* have been answered "yes," and we must interpret the results cautiously. If most (over 50%) of yes-no questions should have been answered "yes," then children are exhibiting a "no" bias, and if less than 50% of yes-no questions should have been answered "yes," then children are exhibiting a "yes" bias.

Elaborated responses

To examine the factors underlying younger children's reticence and explore the developmental trajectory of elaborated responses, we created a novel categorization of elaborations, distinguishing among nominal correction, emphatic negation, narrative elaboration, wh-type elaboration and qualified elaboration. We found no age differences in children's use of nominal corrections and emphatic negation, consistent with our predictions. In prior research, even very young children frequently corrected incorrect labels in yes-no questions (e.g., "Is this a car?") by providing an elaborative response in which they gave the correct label (Pea, 1980, 1982; Hummer et al., 1983). Research has not examined the emergence of emphatic negations (e.g., Q: "Have you seen any pictures of a grown man's penis?" A: "No. Never ever."), but because they reinforce rather than qualify a yes-no response, we anticipated that they would emerge early.

The lack of age differences in nominal corrections and in emphatic negations leaves open the explanation for greater elaboration among older children. Consistent with our predictions, we found that older children were more likely to elaborate in three ways. First, they were more likely to provide narrative elaborations, in which they continued the narrative and spontaneously

provided additional details. This may reflect their superior narrative skills (Fivush et al., 1995), and more generally their superior recall ability (Ceci & Bruck, 1993), enabling them to generate information rather than merely recognize details. Older children may also be more aware of conversational norms that compel speakers to continue the narrative and enrich their responses to yes-no questions with unprompted descriptive details (Steensig & Heinemann, 2013). Second, older children were more likely to provide wh- elaborations, in which they answered an implied wh- question (e.g., Q: "And are there rules at your dad's house?" A: "No running, no playing with the dog that much, only outside"). This is consistent with prior research finding age differences in children's elaboration in response to indirect "Do you remember" and "Do you know" wh- questions (Evans et al., 2014; 2017) and yes-no any/some questions (Szojka et al., 2023). Older children may be more likely to recognize that yes-no questions implicitly request additional information.

Third, we found the most substantial age differences in children's use of qualified elaborations, which express that the correct answer is neither a simple "yes" or "no," or both "yes" and "no." Older children were more than twice as likely as younger children to qualify their responses to yes-no questions, and the average age at which children provided qualified elaborations was a year older than the average age of nominal corrections. Qualified elaborations are complex, because they require the child to reject highly available "yes" and "no" answers and generate an alternative response. Younger children may fail to recognize the potentially false or misleading implications of their unelaborated yes-no answers. Younger children may endorse underinformative "yes" and "no" responses in the same way that they endorse weaker scalar terms (e.g., "some") when stronger terms (e.g., "all") apply (Horowitz et al., 2018; Noveck,

2001). That is, they fail to recognize that "some" implies "only some" and that "yes" or "no" implies an unqualified "yes" or "no."

Limitations and future research

Using data from the field enabled us to examine children's actual responses to yes-no questions in forensic interviews about sexual abuse, increasing ecological validity. However, we were unable to determine whether children's answers were accurate. As noted above, this limits our interpretation of "yes" biases and "no" biases. Furthermore, we don't know what percentage of children's unelaborated responses omitted legally relevant information. For example, we can't tell how often children's "no" responses to whether various acts occurred concealed attempts at performing those acts. Experimental work has demonstrated the underinformativeness of children's responses to yes-no questions about intermediate clothing placement (when the clothes are neither totally on nor totally off) (Stolzenberg et al., 2017; Wylie et al., 2021b), and future work could similarly test children's failure to elaborate when other kinds of yes-no questions are asked. For example, do children routinely fail to mention attempts when asked yes-no questions about actions, and does this tendency change with age? Moreover, when do children acquire an understanding that unqualified responses lead to incorrect inferences, and is this related to their greater tendency to elaborate?

We also can't say how children's unelaborated responses were interpreted by the interviewers, or how they would be interpreted by jurors or other legal decision-makers listening to children's reports. Research has shown that adults fail to recognize ambiguities in children's unelaborated responses to "Do you know" and "Do you remember" yes-no questions (e.g., "Do you remember if it was dark?", for which a "no" response could mean "I don't remember" or "it

wasn't dark") (Wylie et al., 2019, 2021a). Future research can determine if adults similarly draw incorrect inferences when children fail to qualify their yes-no responses.

Implications for practice

The results highlight the dangers of yes-no questions in forensic interviews, and the advantages of replacing them whenever possible with wh- questions (also known as directives) and invitations, broad open-ended requests for recall (Lamb et al., 2018). Wh- questions reduce children's tendency to guess (Waterman et al., 2004) and increase their productivity (Lamb et al., 2018). Among children five years of age and older, invitations are superior to directives (Hershkowitz et al., 2012).

Our findings provide a novel reason to avoid yes-no questions: younger children will give unqualified and therefore misleading responses. Our examination of qualified elaborations demonstrates the risk of omitting legally relevant details when children fail to elaborate, including details about attempted abuse, clothing placement, and reasons for non-disclosure. Furthermore, children's failure to give qualified responses, and the false inferences that adults make from unqualified responses, provides a novel explanation for inconsistencies in children's reports. For example, if children fail to qualify "yes" responses with "sometimes" and "no" responses with "not always," then responses that are logically consistent ("yes, sometimes" is consistent with "no, not always") will appear contradictory.

Interviewers may attempt to alleviate the problem of unelaborated responses by pairing "yes" responses to yes-no questions with wh- questions or invitations, an approach recommended by the NICHD structured protocol (Lamb et al., 2018). For example, children's failure to provide wh- elaborations can be cured by explicitly stating the wh- question (e.g., "Did anything happen that day?"/"Yes"/"What happened?"). Similarly, children's failure to provide

narrative elaborations could be overcome by following up with the invitation “Tell me more about that,” or, wh- questions for children under five who struggle with invitations (Hershkowitz et al., 2012). However, unlike unelaborated responses to wh- elaborations and narrative elaborations, when children fail to give qualified elaborations, interviewers are unlikely to recognize that their answers are uninformative. When children’s responses omit qualified elaborations, they provide little or no indication that details are missing, let alone what type of details have been omitted. For instance, it is not clear whether or how an interviewer should follow up a “no” response to the question “Were your pants off?’, despite the fact that the unelaborated “no” response could mask attempted removal (“No, but he tried to take them off”), partial removal (“He pulled them down to my knees”) or resistance (“No, because I pulled them back up”). Furthermore, field research shows that forensic interviewers do not consistently pair yes-no questions with open prompts (Wolfman et al., 2016), even when children’s unelaborated responses are overtly underinformative, as when they give unelaborated affirmations to questions such as “Do you remember where it was?” (Evans et al., 2017). Once they initiate yes-no questioning, it appears difficult for interviewers to return to more open-ended questioning.

Other potential solutions present their own problems. Interviewers might ask a series of yes-no questions in order to identify qualified responses. For example, in order to elicit information about attempted abuse, one could ask both whether the suspect committed some act and whether they tried to do so. However, strings of yes-no questions risk eliciting thoughtless responding, which increases the risk of both false “yes” and “no” responses. Another possible solution is to resort to forced-choice questions with a “something else” option. For example, one could substitute “Were your clothes on?/Were your clothes off?” with “Were you clothes on or off or something else?”. However, research has found that young children exhibit a tendency to

choose one of the clear-cut choices, or simply respond “something else,” rather than provide an elaborative response (Stolzenberg et al., 2017; Wylie et al. 2021b). In many if not most cases, it appears preferable to avoid both yes-no and open-choice questions altogether. In the case of clothing placement, for example, “where” questions appear superior (i.e., “Where were your clothes?”; Stolzenberg & Lyon, 2017; Stolzenberg et al., 2017; Wylie et al., 2021b).

Conclusion

In conclusion, 4- to 12-year-olds predominantly answered yes-no questions in forensic interviews with unelaborated “yes” and “no” responses, rarely giving “don’t know” or “don’t understand” responses or asking for clarification. Older children elaborated more than younger children, but only for some types of elaborations. Our novel categorization of elaboration types revealed that nominal corrections and emphatic negations occurred at comparable rates among age groups, whereas older children were more likely to respond with narrative elaborations, wh-elaborations, and qualified elaborations. The age-related difference in elaboration types appeared to reflect children’s developing ability to infer implicit meaning in questions and responses. Conversely, when children give unelaborated responses to yes-no questions, this not only risks the omission of forensically relevant details but can mislead adults because of the inferences they draw from unqualified responses.

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Tables

Table 1. Frequencies of response types to yes-no questions.

Response type		Frequency
Unelaborated “yes”		32%
Unelaborated “no”		33%
Elaborated response		23%
	Nominal correction	3%
	Emphatic negation	2%
	Narrative elaboration	5%
	Wh- elaboration	8%
	Qualified elaboration	6%
Irrelevant or no response		8%
“Don’t know / remember”		2%
Request for clarification		2%
Other		0.6%

Table 2. Mean ages of elaboration types.

Response type	M_{age}	*SD*
Nominal correction	7.84	2.61
Emphatic negation	8.10	2.61
Narrative elaboration	8.45	2.59
Wh-type elaboration	8.32	2.57
Qualified elaboration	8.89	2.29