

Children's understanding of implied coaching questions: Does acquiescence influence perceptions of believability?

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ARTICLE INFO

Keywords:

Implied questioning
Coaching
Acquiescence
Polysemous implicature
Believability
Parental support

ABSTRACT

The present study examined whether children understood the implied meaning of coaching questions. Researchers read 9- to 12-year-olds ($N = 116$) vignettes depicting an adult transgression where a child protagonist disclosed to their mother (who was supportive or unsupportive), and then a police officer who asked three implied coaching questions (e.g., "Did the mom *practice* with the girl what to say?"). Participants answered the questions on behalf of the child protagonist and made assessments about whether the protagonist should be believed (i.e., assessing children's understanding that acquiescence implied coaching, and in turn the protagonist should not be believed). When the parent was unsupportive, children rarely affirmed coaching. When the parent was supportive, children's acquiescence decreased with age and increased in response to subtle questions. Children failed to understand the implied meaning, instead relying on parental support to inform their believability assessments. Implied coaching questions are problematic, especially when children first disclose to a supportive adult.

In investigations of child maltreatment, allegations of coaching threaten the credibility of a child's report. Of concern, children may unknowingly affirm coaching when in fact no coaching occurred. Researchers find that attorneys ask questions that subtly imply coaching (St. George et al., 2021), and children often fail to recognize the implied meaning of the question, affirming coaching when in fact no coaching occurred (Wylie, St. George, McWilliams, Evans, & Stolzenberg, 2022). For example, consider the question, "Did your mom help you remember?;" given the positive perceptions children may have of their mother and of how she can help (e.g., Britton & Britton, 1977; Kagan & Lemkin, 1960), they may fail to recognize that the question implies the mother may have influenced their report (Lyon & Stolzenberg, 2015). Such questions are referred to as polysemous implicatures; polysemous is defined as having multiple meanings behind statements (Klein & Murphy, 2001), while an implicature is a statement that implies meaning beyond the literal sense of the statement (Grice, 1975). Though researchers find that young children acquiesce often to polysemous implicatures about coaching following a single disclosure to their mother, when in fact no coaching occurred (Wylie et al., 2022), whether children understand the implied meaning of the question remains unknown. It is reasonable to assume that acquiescing to such implied

coaching questions negatively impacts believability as the child is implying coaching occurred. Therefore, children that acquiesce, with an understanding that the question implies coaching, should also recognize that the coached child should not be believed. Conversely, children may fail to realize the question implies coaching and as such acquiescence would not be related to believability. This was the purpose of the present study – to examine whether children are vulnerable to polysemous implicatures, using a more ecologically valid methodology where children are questioned following multiple disclosures. In addition, our goal was to examine the relationship between acquiescence and believability evaluations, to determine whether children understand that affirming coaching may influence the believability of a child's report.

Legitimate concerns exist over how others may influence children's reports, particularly in cases of child sexual abuse (Bruck et al., 2002; Stolzenberg & Lyon, 2014). Dissimilar to other forms of maltreatment, when children allege sexual abuse, their report becomes central to assessing whether the crime occurred because physical evidence is often lacking or non-existent (Bays & Chadwick, 1993; Cross & Whitcomb, 2017; Stolzenberg & Lyon, 2014), and there are virtually never eyewitnesses (Myers et al., 1989). However, children are susceptible to suggestion, both from those who aim to influence their reports and those

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<https://doi.org/10.1016/j.appdev.2022.101510>

Received 18 May 2022; Received in revised form 29 November 2022; Accepted 30 December 2022

Available online 11 January 2023

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who aim to establish what children are alleging. For example, defense attorneys may be particularly motivated to imply that children have been coached, as a method for suggesting that children have made false allegations (e.g., Zajac, Gross, & Hayne, 2003; Zajac & Hayne, 2003). Given children's susceptibility to courtroom questioning, the way children are questioned about prior suggestive influence is incredibly important.

Researchers find that questions about suggestive influence are common in investigations of abuse. Stolzenberg and Lyon (2014) found that attorneys overtly asked whether children's reports had been influenced by others (in 21% of cases for defense; 26% for prosecution). St. George et al. (2021) found that coaching questions occurred in subtler ways, where in an examination of 64 child sexual abuse testimonies, children were questioned regularly about suggestive influence (92% of sample asked at least once, resulting in a total of 601 lines of questioning), and of these lines of questioning, 67% subtly implied coaching. The problem with subtle questioning is that children may fail to recognize that the attorney is suggesting coaching occurred and in turn affirm the question even if coaching did not occur. For example, as previously explained, when asked the question "Did your mom help you remember?", children may fail to recognize that the question implies the mother may have influenced their report (Lyon & Stolzenberg, 2015). Instead, children's positive perceptions of their mother and how she can help (e.g., Britton & Britton, 1977; Kagan & Lemkin, 1960) may lead them to acquiesce to the question, and in turn suggest their report was the product of the mother's influence, when in fact it was not.

Given that the truth remains unknown in courtroom investigations, experimental work offers insight into children's performance when responding to implied coaching questions. To-date, only one study has examined children's understanding of polysemous implicatures following a single disclosure. Wylie et al. (2022) experimentally assessed 5- to 10-year-olds' acquiescence to polysemous implicature questions about coaching, when in fact no coaching occurred. Participants were exposed to vignettes that depicted a transgression between an adult and child, where the child disclosed the transgression to their mother who was in turn either supportive or unsupportive. Following each vignette participants were asked three polysemous implicature questions, including whether the mom *helped* their child remember, *practiced* what to say, and *told* their child what happened (ranging from more subtle to more explicit, respectively). Children acquiesced to the polysemous implicature questions 39% of the time, though with age children were less likely to acquiesce, even the older children (9- and 10-year-olds) were susceptible to more subtle implied questioning (e.g., *practiced* questions). Notably, parental support largely influenced children's responding, as children were more likely to affirm that coaching occurred when the parent was supportive, compared to unsupportive. The researchers conclude that children acquiesce to questions that subtly imply coaching when it did not occur, demonstrating a lack of ability to identify the implied meaning in the question, and further misinterpret parents' supportiveness as coaching.

Whereas Wylie et al. (2022) examined children's acquiescence to questions that imply coaching following a single disclosure, in a real-world setting child witnesses are likely to be subject to influence or coaching at multiple disclosure points. For example, in investigations of child abuse, children may be required to disclose their experiences to multiple adults (e.g., parent, teacher, police officer, forensic interviewer, lawyer). Malloy, Lyon, and Quas (2007) found that on average children experience four formal interviews, and at least two informal interviews, before going to trial. These multiple disclosure points offer many opportunities for suggestive influence which may in turn influence children's reports and believability in subsequent disclosures. Therefore, improving the external validity of the methodology used by Wylie et al. (2022), the current study examined children's responses to implied coaching questions following multiple disclosures.

It also remains unknown whether affirming implied coaching questions influences the believability of the child's report. It is possible that if

a child affirms coaching regardless of whether coaching truly occurred (as found by Wylie et al., 2022), the child may not be believed by the recipient of the disclosure (e.g., a disclosure recipient or police officer) and their case may not be further pursued. As a result, children may be left in a potentially vulnerable environment. Therefore, it is important to establish whether children that affirm polysemous implicatures, implying that another child was coached, recognize that acquiescence may influence the believability of that child's report. Ultimately, assessing the relationship between children's acquiescence to implied coaching questions and their own believability assessments provides insight into children's understanding of implied meanings and the impact that affirming coaching has on the believability of children's reports.

Though no study to date has examined whether suggestions of coaching influence believability evaluations, a small number of studies have examined coaching and credibility in the context of dishonesty. Children that are coached to lie or conceal information have been found to be perceived as less credible compared to non-coached truth tellers (e.g., O'Connor, Lyon, & Evans, 2019; Talwar, Lee, Bala, & Lindsay, 2006). However, in these studies coaching is confounded with dishonesty (i.e., those who were coached were also telling a lie whereas truth tellers were not coached). Furthermore, the participants who were rating the credibility of children's statements were not aware that coaching occurred and thus were not necessarily making judgements based on coaching. Given that coached lies were contrasted with truths, it is not clear whether these credibility evaluations were based on perceptions of coaching per se or rather based on the veracity of the statement. Therefore, the current study is the first to examine whether and how implied coaching influences perceptions of children's believability.

Current study

We examined 9- to 12-year-olds' acquiescence to polysemous implicatures about whether a child protagonist was coached following multiple disclosures, when in fact no coaching occurred, and the influence of acquiescence on children's perceptions of the child protagonist's believability. Participants were presented with vignettes depicting a transgression where a child protagonist first disclosed to their mother (who was either supportive or unsupportive), and then to a police officer who asked three implied questions about whether the mother coached the child's report in their previous disclosure. Participants were asked what the child protagonist should say in response to the three polysemous implicatures (i.e., did the mom *help* the child *remember*, *practice* what to say, or *tell* the child what to say). Additionally, we examined whether acquiescence to polysemous implicatures and parental support influenced participants' (1) own assessments of the child protagonists' believability (e.g., "Do you believe the [protagonist]?"), and (2) evaluation of the police officers' assessment of believability (e.g., "Should the police officer believe the [protagonist]?"). Given that children in Wylie et al. (2022; 5- to 10-year-olds) were not performing at ceiling, and the current study used a more complex task, we increase the age range of our participants. That is, whereas Wylie and colleagues examined acquiescence to implied coaching questions following a single disclosure to the child's mother, the current study examined acquiescence following multiple disclosures to the mother and then a police officer.

In line with findings from Wylie et al. (2022), it was predicted that children would be more likely to affirm implied coaching questions when the mother was supportive compared to unsupportive, and when the questions more subtly suggested coaching. Additionally, we expected that with age, children would be less likely to affirm implied coaching questions, when no coaching occurred.

To assess children's understanding of the implied meaning of coaching questions, we assessed the influence of affirming implied coaching questions on participants' believability evaluations of the child protagonist. Given that participants knew the ground truth about the transgression in each vignette, we expected participants to always

believe the child's disclosure regardless of acquiescence. However, given that the police officer in the story did not know the ground truth, we expected participants to rely on acquiescence to determine whether the police officer should believe the child. Specifically, if children understood the implied meaning of the coaching questions, we would expect participants with higher rates of acquiescence to questions that imply coaching to say that the police officer should not believe the child. However, it is possible that children did not recognize the implied meaning of the questions and as such were not aware that acquiescence implies the child was coached. In turn, children may not have relied on acquiescence to inform their assessments of the child's believability. For example, children may acquiesce to the implied coaching questions and then say the child protagonist should be believed, suggesting that the child does not truly believe the protagonist was coached and did not use this information to inform their believability assessments.

Given that children may not rely on acquiescence to inform their believability assessments, we also explored whether parental support may have influenced assessments of believability. Though we did not make specific predictions about the influence of support on believability evaluation, given that participants knew the ground truth about the parents' supportiveness, we thought participants may rely on the parents' evaluations of the child to form their own believability assessments (i.e., if the parent believes the child, I should too). It is possible that participants would provide more positive believability evaluations (i.e., affirm believing the protagonist) when the parent was supportive (expressing belief in the child; "I believe you..."), compared to when the parent was unsupportive (expressing disbelief; "I don't believe you..."). Parental support may not only influence the child's own perceptions of believability but also the child's perceptions of whether the police officer should believe.

Method

Participants

One-hundred and sixteen children ($M_{age} = 11$ years, 1 month, $SD = 14$ months, 40% males) participated in this study, including 55 children ages 9 to 10 years old ($M_{age} = 10$ years, 4 months, $SD = 8$ months, 40% males), and 61 children ages 11 to 12 years old ($M_{age} = 11$ years, 5 months, $SD = 6$ months, 39% males). An additional 13 participants were excluded for not completing the tasks ($M_{age} = 10$ years, 3 months, $SD = 11$ months, 62% males). GPower 3.1.9.4 was used to calculate the necessary sample size for a between subjects repeated measures ANOVA and determined an appropriate sample of 110 was sufficient to detect a moderate effect size of 0.20 ($\alpha = 0.05$, Power = 0.80). Participants were recruited from a database of families within the community interested in participating in research studies. This study was approved by the University ethics board. Written consent was obtained by all parents and verbal assent from all children.

Materials and procedure

All participants were tested individually online via a Microsoft Teams video call. First, in line with protocol from Wylie et al. (2022), children were presented with 4 vignettes, animated in Powerpoint, where a male adult committed a transgression involving vandalism/theft towards a child protagonist. Following the adult transgression, the child protagonist told their mom what happened. In half of the vignettes, the mom was either supportive (the Mom said: "I believe you. You need to tell a policeman. I want you to tell him the truth.") or unsupportive (the Mom said: "I don't believe you. Don't tell anyone else about that. Don't tell lies."), with order of support counterbalanced between participants (supportive first or unsupportive first, alternating thereafter). Throughout each vignette, children were asked two memory check questions about the child's disclosure and the mom's support, which all participants passed. The child protagonist then told a police officer what

happened, and the police officer asked the protagonist three polysemous implicature questions about whether the mother coached the child's report in their previous disclosure, including (1) Did your mom *help* you remember what happened? (2) Did your mom *practice* with you what to say? (3) Did your mom *tell* you what happened? Following each polysemous implicature question, child participants were asked "What should the boy/girl say?" The order of the polysemous implicature questions were counterbalanced between participants, and the gender of the child protagonist was matched to the gender of the child participant. Finally, child participants were asked to make two believability judgments about whether the child protagonists' report should be believed by the police officer and whether the participant believed the disclosure ("Should the police officer believe the boy?" "Do you believe the boy?").

The proportion of participants' affirmative (i.e., yes) responses were calculated for each polysemous implicature question type (*help*, *remember*, *practice*, *tell*), and each believability assessment (police believe, you believe) by dividing the number of affirmative responses by the total number of questions, separately for supportive ($n = 2$) and unsupportive ($n = 2$) parents.

Finally, children completed the Peabody Picture Vocabulary Test (PPVT; receptive vocabulary) using the NIH Toolbox as a measure of children's language ability (Gershon et al., 2013).

Results

Preliminary analyses

There were no order effects for polysemous implicature question type on the proportion of children's "yes" responses to the questions, $F(5,86) = 0.472$, $p = .796$, $\eta^2 = 0.027$. However, support order did significantly influence children's acquiescence, $F(1,86) = 0.694$, $p = .010$, $\eta^2 = 0.075$, and so it was retained in the model. Furthermore, children's age-corrected PPVT scores were not a significant predictor of acquiescence when included in the full model, $F(1,86) = 0.644$, $p = .424$, $\eta^2 = 0.007$, therefore this measure was excluded to present the most parsimonious model.

Affirmation of polysemous implicatures

Overall, across all polysemous implicature questions, children provided affirmative responses 18% of the time.¹ A 2 (Age: 9- to 10-year-olds, 11- to 12-year-olds) by 2 (parental support: supportive, unsupportive) by 2 (support order: supportive first, unsupportive first) by 3 (question type: *help*, *remember*, *practice*, *tell*) mixed ANOVA was performed on the proportion of children's affirmative responses to polysemous implicature questions, with age group and support order as between-subject variables. Mauchly's Test of Sphericity indicated that the assumption of sphericity had been violated for question type, $\chi^2(2) = 27.48$, $p < .001$, and the interaction between support and question type, $\chi^2(2) = 6.31$, $p = .043$, thus Greenhouse-Geisser correction was used for the repeated-measures effect of question type ($\epsilon = 0.82$), and the interaction between support and question type ($\epsilon = 0.95$). The rate of children's affirmative responses were found to differ by parental support, $F(1,112) = 91.05$, $p < .001$, $\eta^2 = 0.05$, support order, $F(1,112) = 8.13$, $p = .005$, $\eta^2 = 0.07$, and question type, $F(1.64,183.72) = 20.89$, $p < .001$, $\eta^2 = 0.16$. These main effects were qualified by two-way interactions between parental-support and age, $F(1,112) = 5.32$, $p = .023$, $\eta^2 = 0.05$, parental support and question type, $F(1.90,11.85) = 11.57$, $p < .001$, $\eta^2 = 0.09$, and parental support and support order, $F(1,112) =$

¹ We also compare children's affirmative responses to Help Remember, Practice, and Tell questions to chance (see supplemental materials), however, the findings are not particularly informative as children are always significantly below chance and we were particularly interested in *how often* children acquiesce because it is falsely implying coaching.

5.99, $p = .016$, $\eta^2 = 0.05$. There were no other significant effects or interactions, $ps > 0.05$.

Parental support and age

First, we were interested in whether with age, children were less likely to acquiesce to polysemous implicatures (see Fig. 1). Pairwise comparisons revealed that, when the parent was supportive, 9- to 10-year-olds ($M = 0.38$, $SD = 0.28$) were significantly more likely to affirm the implied coaching question, compared to 11- to 12-year-olds ($M = 0.26$, $SD = 0.29$), $p = .036$. When the parent was unsupportive, there was no significant difference in affirmative responses for 9- to 10-year-olds ($M = 0.03$, $SD = 0.11$) and 11- to 12-year-olds ($M = 0.05$, $SD = 0.11$), $p = .298$, suggesting that under conditions when a parent is supportive, with age children are less likely to assent to questions that imply coaching.

Parental support and question type

We were also interested in whether children were less likely to affirm more subtly suggestive questions (see Fig. 2). When the parent was supportive, children were significantly more likely to affirm *practice* ($M = 0.44$, $SD = 0.30$) and *help remember* questions ($M = 0.33$, $SD = 0.27$), compared *tell* ($M = 0.19$, $SD = 0.25$), $ps < .001$ (no significant difference between *practice* and *help remember*, $p = .092$). When the parent was unsupportive, children were significantly more likely to affirm *practice* ($M = 0.08$, $SD = 0.15$), compared to *help remember* ($M = 0.02$, $SD = 0.06$) and *tell* questions ($M = 0.03$, $SD = 0.09$), $ps \leq 0.03$ (no significant difference between *help remember* and *tell*, $p > .999$), suggesting that when a parent is supportive, children are most susceptible to more subtle questioning (e.g., *practice* questions), whereas when a parent is unsupportive, children rarely affirm implied questions (though they too are most susceptible to more subtle questioning).

Parental support and support order

Given that we found an order effect, we explored the influence of support order on children's affirmative responses, separately for parental support. Children were significantly more likely to affirm the question when the parent was supportive, if participants received an unsupportive parent first ($M = 0.40$, $SD = 0.29$) compared to if they received a supportive parent first ($M = 0.24$, $SD = 0.29$), $p = .005$. There was no significant difference in children's affirmative responses when the parent was unsupportive, regardless of if they got an unsupportive ($M = 0.05$, $SD = 0.11$) or supportive parent first ($M = 0.04$, $SD = 0.11$), $p = .680$.

Believability assessments and affirmation of polysemous implicatures

Overall, children often affirmed that they believed the protagonist ($M = 0.94$, $SD = 0.14$), and that the police officer should believe the protagonist ($M = 0.88$, $SD = 0.21$). Of note, age was not significantly related to children's believability evaluations in any of the following

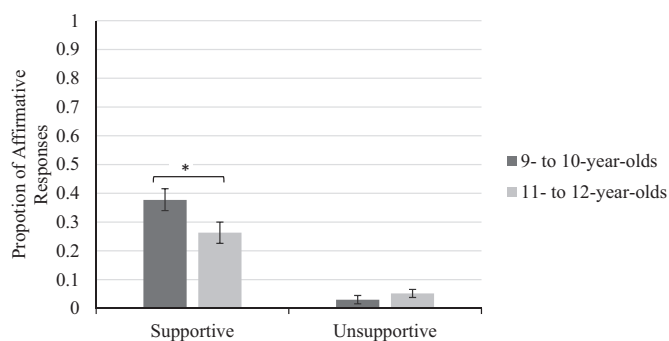


Fig. 1. Parental Support X Age, for the proportion of children's affirmative responses.

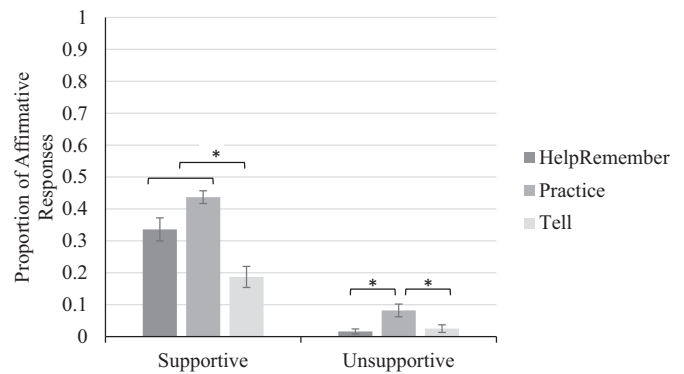


Fig. 2. Parental Support X Question Type, for proportion of children's affirmative responses.

analyses (e.g., own believability evaluations, $r = -0.049$, $p = .600$; police believability evaluations, $r = -0.015$, $p = .875$), and so was removed to create the most parsimonious models.

Two regressions were conducted with proportion of affirmative responses to *help remember*, *practice*, and *tell* questions as the predictors, and own and police believability evaluations as the outcome variables. Consistent with our predictions, the overall model for own evaluations was not significant, $R^2 = 0.006$, $F(3,112) = 0.23$, $p = .875$, suggesting that children's affirmative responses to polysemous questions did not predict their own evaluations of child believability, possibly because children knew the ground truth about the transgression and believed the child regardless of affirming implied coaching. However, contrary to our predictions, the overall model for police evaluations was also not significant, $R^2 = 0.012$, $F(3,112) = 0.47$, $p = .706$, suggesting that children may be relying on their own knowledge of the ground truth rather than the police officers knowledge, and/or they are not aware of the implied meaning of the questions and that affirmative responses implies coaching which may impact the believability of the child's report.

Believability assessments and parental support

Given that participants did not rely on affirmative responses to polysemous implicature questions to inform their evaluations of child believability, it is possible that they instead relied on parental support. A 2 (parental support: supportive, unsupportive) by 2 (evaluator: self, police) mixed ANOVA was performed on the proportion of children's affirmative responses indicating the protagonist was believed by the participant or should be believed by the police officer. Whether the protagonist was believed differed as a function of parental support, $F(1,115) = 12.83$, $p < .001$, $\eta^2 = 0.10$, and evaluator, $F(1,115) = 14.81$, $p < .001$, $\eta^2 = 0.11$, qualified by a parental support by evaluator interaction, $F(1,115) = 9.67$, $p = .002$, $\eta^2 = 0.08$.

Parental support. We examined the influence of parental support on children's believability evaluations followed by police officer's believability evaluations. In line with our predictions, children were significantly more likely to believe the protagonist when the parent was supportive ($M = 0.97$, $SD = 0.13$), compared to when the parent was unsupportive ($M = 0.92$, $SD = 0.21$), $p = .041$. Children were also significantly more likely to indicate that the police officer should believe the child protagonist when the parent was supportive ($M = 0.94$, $SD = 0.18$), compared to when the parent was unsupportive ($M = 0.82$, $SD = 0.34$), $p < .001$, suggesting that children rely on whether the parent perceives the claim as legitimate in making believability evaluations for themselves and others.

Discussion

The goal of the current study was to assess children's acquiescence to

implied coaching questions following multiple disclosures, and its influence on evaluations of the child's believability. Overall, we found that children do acquiesce to implied coaching questions, and this is largely influenced by whether parents offered support. When the parent was unsupportive, children rarely affirmed coaching, whereas when the parent was supportive, children's acquiescence decreased with age and increased in response to more subtle questions. Furthermore, whereas acquiescence to implied coaching questions did not influence believability evaluations, parental support led to higher believability evaluations.

Acquiescence

Overall, children acquiesced to polysemous implicature coaching questions 18% of the time. Although this rate was lower than what was found by Wylie et al. (2022), who found that children ages 5 to 10 years acquiesced 39% of the time, this was likely because of the older age group used in this study (9 to 12 years). In fact, the 9- and 10-year-olds performed similarly in our study (supportive, 40% acquiescence; unsupportive, 11% acquiescence) compared to results found by Wylie and colleagues (supportive, 38% acquiescence; unsupportive, 3% acquiescence). These findings demonstrate that even older children (9 to 12 years) are affirming questions with implied meanings, which suggests that the mother coached the child when in fact no coaching occurred, although these rates may decrease into late childhood and early adolescence. This relatively high rate of acquiescence, even for 11- and 12-year-olds, is problematic within investigative contexts (e.g., child disclosures, courtroom questioning) where children are questioned about their experiences. For example, St. George et al. (2021) found that when children were asked about suggestive influence, 67% of attorneys' questions subtly implied coaching. Children's acquiescence to implied coaching questions, when no coaching occurred, may discredit a child's report, and leave them in a vulnerable situation. This is particularly problematic when children are being questioned about events, such as abuse, given that children's testimony is central to the investigation and coaching would undermine their reports and potentially discredit the case. Given that it is not uncommon for child witnesses to be questioned about coaching (e.g., St. George et al., 2021), the subtlety of questions should be taken into consideration; those interviewing children should ask more overt questions about coaching to minimize false acquiescence and miscommunications.

Although this study confirms young children's acquiescence to implied coaching questions, it is worth noting that across all 12 questions a "yes" response always suggests children believed coaching occurred, when in fact it did not. This repeated questioning methodology *could* lead to response biases if children changed their responses simply to vary their responses. However, in the current study children's acquiescence varied as a function of support and polysemous implicature, demonstrating that children were sensitive to the manipulations and forming beliefs about whether coaching occurred. In the future, researchers might examine children's acquiescence to implied coaching question when coaching did in fact occur, as a more sensitive measure of children's understanding of implied coaching questions (i.e., if coaching did occur and acquiesce to implied coaching questions is low, children may be failing to understand the implied meaning of the question). In doing so, researchers should also manipulate the veracity of the child protagonists' disclosure. Whereas in the current study children always truthfully disclosed the transgression, false reports may influence children's acquiescence to implied coaching questions.

Parental support, age, and question type

In line with findings from Wylie et al. (2022), children's acquiescence was largely influenced by parental support, age, and polysemous implicature question type. When the parent was supportive, children were less likely to affirm coaching with age, as 9- and 10-year-olds more

often acquiesced to all polysemous implicatures (approximately 38% of the time) compared to 11- and 12-year-olds (approximately 26% of the time). Given that children likely have positive perceptions of a parent and how they can help (Britton & Britton, 1977; Kagan & Lemkin, 1960), the mother's supportiveness was likely interpreted as aiding the child, leading the younger children (9 and 10 years) in particular to acquiescence to the polysemous implicature questions implying coaching. This is problematic, given that during investigations children are likely to interact with supportive adults, leading children to affirm coaching when coaching did not occur. Additionally, when the parent was supportive, children were more likely to affirm coaching when asked more subtle polysemous implicature questions (when asked about the mother *practicing* with the child what to say, acquiesced 30% of the time), compared to more overt questions (when asked about the mother explicitly *telling* the child what to say, only acquiesced 19% of the time). In contrast, when the parent was unsupportive, children rarely acquiesced to the implied coaching questions, though they too were most susceptible to more subtle questioning (when asked about *practicing*, acquiesced 8% of the time; when asked about explicitly *telling*, acquiesced 3% of the time). Altogether, these findings suggest that with age children become less influenced by a parent's support, though all age groups were susceptible to more subtle threats of implied meaning.

Interestingly, we found an unexpected influence of support order. If participants received an unsupportive parent first then they were then more likely to affirm coaching when the parent was supportive (acquiesce to supportive parent 40% of the time), compared to if they received the supportive parent first (acquiesce to supportive parents 24% of the time). These findings suggest that receiving an unsupportive parent first may have contextualized the supportive parent's behavior as more positive, thus increasing acquiescence when participants next witnessed a supportive parent (i.e., sensitive to the positive shift in the vignette). Importantly, even when participants received a supportive parent first, they were still more likely to affirm coaching when the parent was supportive (acquiescence 24% of the time) compared to when the parent was unsupportive (acquiescence 4% of the time), suggesting it is not only the positive shift in vignettes that is driving our effect of support, but the support itself.

Believability

Given that affirming coaching suggests the children's reports were the product of influence, we explored whether affirming implied coaching questions negatively influenced the believability of the child. In line with our predictions, acquiescence did not influence participants' own evaluations of the child's believability, as they were witness to the transgression and had no reason to not believe the child's disclosure. However, given that the police officer was not present during the transgression, it was expected that participants would rely on the children's disclosure (i.e., whether they affirmed coaching when the police officer asked implied coaching questions) to evaluate whether the police officer should believe the child. Contrary to our predictions, acquiescence did not influence participants' evaluations of whether the police officer should believe the child. Notably, participants were not explicitly told that the police officer did not know the ground truth about the transgression. It is possible that children did not infer this information (it was somewhat ambiguous) and instead relied on their own knowledge of the ground truth (i.e., the transgression happened so the child should be believed) when making their judgements. Importantly, our findings suggest that children, even older children (11 and 12 years), may be unaware that acquiescence implies coaching and therefore have little reason to rely on acquiescence when forming impressions about the believability of the child protagonist.

Although children were not relying on acquiescence to implied coaching questions to inform their evaluations of the child's believability, parental support did influence their believability evaluations. Children were more likely to believe the child and indicate that the

police officer should believe the child when the parent was supportive (expressing belief in the child; “I believe you. You need to tell a policeman...”), compared to unsupportive (expressing disbelief; “I don’t believe you. Don’t tell lies...”). These findings demonstrate an understanding that not only children themselves, but also subsequent disclosure recipients (e.g., police in our study) may question the child’s report, when another trusted adult (e.g., parent in our study) previously disbelieved the child’s report. Again, participants were not explicitly told that the police officer did not know the ground truth about parental support in the initial disclosure. In fact, in this paradigm the police officers’ questions about their prior disclosure to their mother (e.g., asking if she helped the child remember what happened) suggests that the police officer had some knowledge about the prior disclosure. Perhaps children assume the police officer knew whether the parent was supportive and aligned their evaluations of whether the police officer should believe with the parents’ supportiveness. This is sensible, as in a real case, police may be likely to talk to a child’s parent before talking to the child themselves. Researchers should examine potential cognitive mechanisms related to children’s believability evaluations (e.g., theory-of-mind understanding, which may be required to understand the knowledge state of the parent, police officer, and protagonist). Follow-up studies could also ask the child participant about what they think the police officer knows, as a check for children’s understanding of the officer’s knowledge state. Another suggestion is to place the child participants themselves into the vignette rather than having them rationalize about the child protagonists’ responses, thus potentially reducing theory-of-mind demands.

Conclusions

Altogether, the findings from the current study confirm that children, even older children up to at least 12 years of age, sometimes acquiesce to implied coaching questions when coaching did not occur, though children were more susceptible to questions that more subtly imply coaching (when asked about the mother *practicing* with the child what to say, compared to explicitly *telling*). Parental support largely influenced acquiescence, as children were more likely to affirm coaching when parents offered support, even though no coaching occurred. This is concerning given that children often disclose to trusted adults who are in turn supportive, leading children to affirm questions that imply coaching when no coaching occurred. Most notably, children did not rely on acquiescence to inform believability assessments, suggesting that children may not realize the subtle implications of implied coaching questions. Instead, children relied on parental support to inform believability assessments, aligning their own and other disclosure recipients’ (e.g., police) believability evaluations with that of other trusted adults (e.g., when parents don’t believe, neither will the child or the police officer). Overall, our findings suggest that polysemous implicatures about coaching are problematic, even in late childhood, and should be avoided when questioning children about their witnessed experiences.

Declaration of Competing Interest

None.

Data availability

Data will be made available on request.

Acknowledgements

This work was supported by the National Science Foundation

[FP00016765]. The National Science Foundation had no involvement in the study design, the collection, analysis, and interpretation of the data, in the writing of the report, and in the decision to submit the article for publication.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.appdev.2022.101510>.

References

- Bays, J., & Chadwick, D. (1993). Medical diagnosis of the sexually abused child. *Child Abuse and Neglect: The International Journal*, 17(1), 91–110. [https://doi.org/10.1016/0145-2134\(93\)9001-S](https://doi.org/10.1016/0145-2134(93)9001-S)
- Britton, J. H., & Britton, J. O. (1977). Children’s perceptions of their parents: A comparison of finish and American children. *Journal of Marriage and Family*, 33(1), 214–218. <https://www.jstor.org/stable/350168>.
- Bruck, M., Ceci, S. J., & Hembrooke, H. (2002). The nature of children’s true and false narratives. *Developmental Review*, 22, 520–554. [https://doi.org/10.1016/S0273-2297\(02\)0006-0](https://doi.org/10.1016/S0273-2297(02)0006-0)
- Cross, T. P., & Whitcomb, D. (2017). The practice of prosecuting child maltreatment: Results of an online survey of prosecutors. *Child Abuse & Neglect*, 69, 20–28. <https://doi.org/10.1016/j.chiabu.2017.04.007>
- Gershon, R. C., Wagster, M. V., Hendrie, H. C., Fox, N. A., Cook, K. F., & Nowinski, C. J. (2013). NIH toolbox for assessment of neurological and behavioral function. *Neurology*, 80(11 Supplement 3), S2–S6. <https://doi.org/10.1212/WNL.0b013e3182872e5f>
- Grice, H. P. (1975). Logic and conversation. In P. Cole, & J. J. Morgan (Eds.), *Vol. 3: Speech Acts. Syntax and semantics*. Academic Press.
- Kagan, J., & Lemkin, J. (1960). The child’s differential perception of parental attributes. *Journal of Abnormal and Social Psychology*, 61(3), 440–447. <https://doi.org/10.1037/h0041387>
- Klein, D. E., & Murphy, G. L. (2001). The representation of polysemous words. *Journal of Memory and Language*, 45(2), 259–282. <https://doi.org/10.1006/jmla.2001.2779>
- Lyon, T. D., & Stolzenberg, S. N. (2015). Children’s memory for conversations about sexual abuse: Legal and psychological implications. *Roger Williams University Law Review*, 19, 411–450.
- Malloy, L. C., Lyon, T. D., & Quas, J. A. (2007). Filial dependency and recantation of child sexual abuse allegations. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(2), 162–170. <https://doi.org/10.1097/01.chi.0000246067.77953.f7>
- Myers, J. E., Bays, J., Becker, J., Berliner, L., Corwin, D. L., & Saywitz, K. J. (1989). Expert testimony in child sexual abuse litigation. *Nebraska Law Review*, 68(1), 1–145.
- O’Connor, A. M., Lyon, T. D., & Evans, A. D. (2019). Younger and older adults’ lie-detection and credibility judgments of children’s coached reports. *Psychology, Crime & Law*, 25(9), 925–944. <https://doi.org/10.1080/1068316X.2019.1597092>
- St. George, S., Sullivan, C., Wylie, B. E., McWilliams, K., Evans, A. D., & Stolzenberg, S. N. (2021). Did your mom help you remember?: An examination of attorneys’ subtle questioning about suggestive influence to children testifying about child sexual abuse. *Journal of Interpersonal Violence*, 37(15–16), 1–26. <https://doi.org/10.1177/08862605211006369>
- Stolzenberg, S. N., & Lyon, T. D. (2014). How attorneys question children about the dynamics of sexual abuse and disclosure in criminal trials. *Psychology, Public Policy, and Law*, 20(1), 19–30. <https://doi.org/10.1037/a0035000>
- Talwar, V., Lee, K., Bala, N., & Lindsay, R. C. L. (2006). Adults’ judgments of children’s coached reports. *Law and Human Behavior*, 30(5), 561–570. <https://doi.org/10.1007/s10979-006-9038-8>
- Wylie, B. E., St. George, S., McWilliams, K., Evans, A. D., & Stolzenberg, S. N. (2022). Children’s acquiescence to polysemous implicature questions implying coaching: The role of parental support. *Journal of Applied Developmental Psychology*, 78. <https://doi.org/10.1016/j.appdev.2021.101370>
- Zajac, R., Gross, J., & Hayne, H. (2003). Asked and answered: Questioning children in the courtroom. *Psychiatry, Psychology and Law*, 10(1), 199–209. <https://doi.org/10.1375/pplt.2003.10.1.199>
- Zajac, R., & Hayne, H. (2003). I don’t think that’s what really happened: The effect of cross-examination on the accuracy of children’s reports. *Journal of Experimental Psychology. Applied*, 9(3), 187–195. <https://doi.org/10.1037/1076-898X.9.3.187>

Further reading

- Bruck, M., & Ceci, S. J. (2009). Reliability of child witnesses’ reports. In J. L. Skeem, K. S. Douglas, & S. O. Lilienfeld (Eds.), *Psychological science in the courtroom: Consensus and controversy* (pp. 149–171). New York: Guilford.