

*University of Southern California Law
School*

Legal Studies Working Paper Series

Year 2018

Paper 277

**Adults' Perceptions of Children's
Referentially Ambiguous Responses**

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Abstract

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In press, *Psychology, Crime, & Law*

Word count: 4,045

Acknowledgements: Portions of this research were presented at the American Psychology-Law Society annual conference in Memphis TN. Preparation of this article was supported in part by National Institute of Child Health and Human Development Grant HD047290 and HD087685 awarded to the second author as well as the Social Sciences and Humanities Research Council of Canada awarded to the last author.

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Abstract

The present study examined adults' ($N = 295$) interpretations of child witnesses' referentially ambiguous "yes" and "no" responses to "Do You Know/Remember (DYK/R) if/whether" questions (e.g., "Do you know if it was blue?"). Participants were presented with transcripts from child sexual abuse cases modified based on question format (DYK/R vs. Direct) and child response type (Yes, No, I don't know) in a between subjects design. We assessed whether adults recognized that children's ambiguous responses were unclear, and if not, how they were interpreting children's responses compared to the control (Direct) conditions. More specifically, we assessed whether adults interpreted children's responses as answering the explicit (e.g., "No, I don't remember") or implicit (e.g., "No, it wasn't blue") question. Participants virtually never recognized ambiguous responses as unclear, and their interpretations were influenced by the attorney's question and child's response type. In sum, these results suggest that DYK/R questions often lead to misinterpretation, resulting in miscommunication.

Keywords: jury, child witness, response interpretation, referential ambiguity, testimony

Adults' Perceptions of Children's Referentially Ambiguous Responses

There is an extensive literature examining how jury members evaluate children's responses to age-inappropriate questions, and the effects of questioning children on case outcomes (Klemfuss, Quas, & Lyon, 2014; Mugno, Klemfuss, & Lyon, 2016; Ross, Jurden, Lindsay, & Keeney, 2003). However, limited research has examined jurors' interpretations of children's reports, particularly when children's responses are ambiguous. Ambiguity can be problematic as jury members are left to make their own interpretations of what children are intending to convey, thereby increasing the likelihood of miscommunications.

One type of question that can be problematic for children is a "Do you know..." or "Do you remember..." (DYK/R) question, such as "Do you remember where it happened?" DYK/R questions explicitly ask whether the child knows or remembers information, while implicitly requesting that information (Evans, Stolzenberg, & Lyon, 2017). Young children have been found to frequently give unelaborated "yes" responses to DYK/R questions. Unelaborated "yes" responses often exhibit a failure on the part of the child to identify the implicit request, a problem called "pragmatic failure" (Evans, Stolzenberg, Lee, & Lyon, 2014; Evans et al., 2017). When the implicit question is a wh- question (i.e., who, what, when, where, how), pragmatic failure is a minor inconvenience, because the questioner can follow up the yes response with the wh- question. For example, if the child responds "yes" to "Do you know where it happened?" the questioner can easily follow up with "where did it happen?"

The possibility of pragmatic failure, however, creates a referential ambiguity problem if children are asked DYK/R if/whether questions that explicitly asks a yes/no question about whether the child knows or remembers the information while also implicitly asking a yes/no question about that information (e.g., "Do you remember if it was blue?"). In essence, this form

of question is asking two different yes/no questions within a single request for information. When children provide an unelaborated “yes” or “no” answer, it is unclear as to whether the child is answering the implicit or explicit yes/no question (henceforth referred to as *referentially ambiguous*). For example, an unelaborated “yes” response to a DYK/R if/whether question (e.g., “Do you remember if it was blue?”) could mean “Yes, I remember” (response to the explicit request) or “Yes, it was blue” (response to the implicit request). Similarly, an unelaborated “no” response to a DYK/R if/whether question could mean “No, I don’t remember” (response to the explicit request) or “No, it was not blue” (response to the implicit request).

There is some evidence that adults often fail to recognize children’s referentially ambiguous responses (Matthews, Lieven, & Tomasello, 2007). When an interpretation is readily made about the meaning of an ambiguous response, this forecloses consideration of alternative explanations (Keysar, Barr, & Horton, 1998). With respect to DYK/R if/whether questions in particular, adults may assume that children are answering the explicit or the implicit request, and thus fail to consider the alternative interpretation. Evans and colleagues (2017) examined 158 court transcripts from child sexual abuse trials (4- to 9-year-olds) and found that when children gave unelaborated “yes” and “no” responses to DYK/R if/whether questions, attorneys attempted to clarify those responses only 28% of the time. Importantly, when children clarified their responses, they indicated that they were answering the explicit question 45% of the time, and the implicit question 55% of the time. Thus, children were attempting to answer the explicit and implicit portion of the question almost equally often. Given that children lack a consistent pattern for how they are answering DYK/R if/whether questions when they provide referentially ambiguous responses, and these responses are not regularly followed-up for clarification by attorneys, it is critical to understand how adults interpret children’s ambiguous responses.

The present investigation examined whether adults recognized that children's unelaborated "yes" and "no" responses are referentially ambiguous and, when they failed to identify these responses as ambiguous, how they interpreted the response (i.e., as answering the implicit or explicit request). All participants read modified court transcripts of child witnesses' testimonies, manipulated according to six transcript conditions. In the three DYK/R conditions, the target questions were asked in the form of "Do You Know/Remember if/whether". The three DYK/R conditions were manipulated so that children provided only "Yes", "No", or "I don't know (IDK)" responses. As a control comparison to the DYK/R conditions, three Direct conditions were created where children were asked the target questions in the form of direct questions. The three Direct conditions were also manipulated so that children provided only "Yes", "No", or "IDK" responses. Thus, the six conditions included: DYK-Yes, DYK -No, DYK-IDK, Direct-Yes, Direct-No, Direct-IDK. In the Direct conditions, as well as the DYK-IDK condition, the child clearly answered the interviewer's request. In contrast, in the DYK-Yes and DYK-No conditions, the child's response was referentially ambiguous. In sum, these conditions were manipulated to assess participants' interpretations of the child's responses to the target questions.

Given that adults often fail to recognize the ambiguity of children's responses (Evans et al., 2017; Matthews et al., 2007), it was predicted that participants would rarely identify children's unelaborated "yes" and "no" responses to DYK/R if/whether questions as ambiguous (i.e., unclear). Further, when participants do fail to identify these responses, it was expected that they would be significantly more likely to interpret the child's response as answering the implicit question compared to the explicit question, because the ultimate goal of DYK/R questions is an answer to the implicit question (Clark, 1979). That is, when participants fail to identify the

ambiguity of the response, they may assume children are adhering to the pragmatics of the question and answering the implicit request.

The Direct question conditions served three purposes. First, they assessed whether participants were able to recall a child's response when the child clearly answered the interviewer's question. Given that children's responses to direct questions clearly answer the question, it was expected that participants would be able to accurately recall children's responses the majority of the time, thus serving as a memory control. Second, the Direct conditions served as a baseline comparison to the DYK conditions. While Direct questions are a clear request for information, DYK/R questions ask both whether the child knows the information and requests for that information. If participants recognized the ambiguity of the DYK/R questions, then they should interpret the Direct questions as eliciting clear answers more often than the DYK/R questions. Last, the Direct questions allowed a clearer test of how adults interpreted children's ambiguous responses. For example, comparing a "yes" response to a Direct question and a DYK/R question assesses whether adults are treating the "yes" response as equivalent answers.

Method

Participants

Three hundred and four adults were recruited from an online participant pool (Amazon Mechanical Turk; MTurk). Mturk was utilized to obtain a community represented sample, including only those who were of jury eligible age (18 years or older). All participants were randomly assigned to one of six experimental conditions: DYK-Yes ($N = 52$), DYK-No ($N = 50$), DYK-IDK ($N = 50$), Direct-Yes ($N = 51$), Direct-No ($N = 51$), or Direct-IDK ($N = 50$). Nine participants were excluded for not completing the survey. Therefore, our final sample consisted of 295 participants between 18 and 70 years of age ($M_{\text{age}} = 33.36$, $SD = 9.22$, 173 males); DYK-

Yes ($N = 52$, $M_{\text{age}} = 34.58$, $SD = 9.58$), DYK-No ($N = 48$, $M_{\text{age}} = 32.25$, $SD = 10.08$), DYK-IDK ($N = 49$, $M_{\text{age}} = 35.02$, $SD = 9.25$), Direct-Yes ($N = 49$, $M_{\text{age}} = 34.53$, $SD = 9.75$), Direct-No ($N = 50$, $M_{\text{age}} = 31.70$, $SD = 8.67$), or Direct-IDK ($N = 47$, $M_{\text{age}} = 32.15$, $SD = 7.64$). Half (50%) of the participants completed university, 27% completed college or an apprenticeship, 16% completed some post-secondary education, 6% completed a graduate degree (Masters, PhD, MD, J.D. or LL.M.), and 1% completed high school as their highest form of education. The majority of participants were born in the United States (93%, $N = 273$), with a minority of other countries represented, including India (5%, $N = 14$), Canada (<1%, $N = 2$), United Kingdom (1%, $N = 3$), Philippines (<1%, $N = 1$), and Haiti (<1%, $N = 1$). Consent was obtained prior to completing the survey, and upon completion of the study all participants were fully debriefed and received \$3.65 USD for their participation.

Measures

Transcripts. Two transcripts were selected from a larger database of child sexual abuse court transcripts utilized in a previous study (Evans, Stolzenberg, & Lyon, 2017). This larger database, pursuant to the California Public Record Act, included trial transcripts for 235 of the 309 child sexual abuse cases that went to trial in Los Angeles county between January 2, 1997 to November 20, 2001. The two transcripts were selected to include the youngest age group when referentially ambiguity occurs most frequently (Evans et al., 2017), and for being under 20 pages in length (a reasonable length for participants to read). Child 1's transcript included a 7-year-old female witness, the accused was known to the child (friend's father), and the case resulted in an acquittal. Child 2's transcript included a 6-year-old female witness, the accused was known to the child (a neighbor), and the case resulted in a conviction. Only the direct, cross, re-direct, and re-cross examinations of the child's testimony were included. Any competency exam questions

or discussion with the court were removed from the transcripts. The transcripts were then manipulated to create six question/response type conditions (DYK-Yes, DYK-No, DYK-IDK, Direct-Yes, Direct-No, Direct-IDK). On average, every 8th question-answer pair was manipulated within the transcripts according to the condition they represented. These manipulated question-answer pairs became the target details in the current study.

The six conditions were manipulated as follows. In the three DYK/R conditions, the target questions were asked in the form of Do You Know/Remember if/whether questions (e.g., Do you know if he was home?). The three DYK/R conditions varied depending on children's responses to the questions: "Yes", "No", or "IDK". In the three Direct conditions, only the implicit component of the Do You Know/Remember if/whether question was asked in the form of a direct question (e.g., Was he home?). The three Direct conditions also varied depending on children's responses to the questions: "Yes", "No", or "IDK".

Questionnaire. To avoid participants knowing that we were specifically assessing their interpretation of children's responses to DYK/R if/whether questions, participants were told that the questionnaire was assessing their memory for the child's report. Participants were asked to recall what the child said in response to the attorney's question. Given that children provided unelaborated responses to DYK/R questions, this allowed us to assess how participants were interpreting children's referentially ambiguous responses. For each target detail, participants had the option of selecting one of five responses in the form of "According to *the child*..." (1) the event detail did occur ("yes" interpretation; e.g., ...Joanna was at the swimming pool with her), (2) the event detail did not occur ("no" interpretation; e.g., ...Joanna was NOT at the swimming pool with her), (3) the child didn't know if the event occurred ("IDK" interpretation; e.g., ...she didn't know if Joanna was at the swimming pool with her), (4) it was unclear what *the child* said

(“unclear” interpretation), and (5) prefer not to answer. Proportion scores were calculated for the number of “yes”, “no”, “IDK”, “unclear”, and “prefer not to answer” interpretations by dividing the total number of each type of interpretation by the total number of questions ($n = 21$).

Procedure

Participants completed the survey online via Mturk. Participants were given a maximum of two hours to complete the study once the survey was opened ($M = 45.27$ minutes to complete). Participants were randomly assigned to one of the six conditions: DYK-Yes, DYK-No, DYK-IDK, Direct-Yes, Direct-No, Direct-IDK. All participants read through the two transcripts with the order of presentation counterbalanced across participants. After reading each transcript, participants completed the questionnaire. Upon completion of the study, participants were provided with an online debriefing form outlining the purpose of the study and were compensated for their time.

Results

Preliminary analyses indicated that there were no significant differences in the pattern of results for Child 1 and Child 2, thus scores were collapsed across child.

Interpretations

To assess participants' interpretations of children's responses, a repeated measures ANOVA was performed with Condition (DYK-Yes, DYK-No, DYK-IDK, Direct-Yes, Direct-No, Direct-IDK) as the between-subjects variable and the proportion Response Interpretation scores (unclear, yes, no, IDK) as the dependent variables. There was a significant main effect of interpretations, $F(4, 1152) = 625.88, p < .001, \eta_p^2 = .685$, and no significant main effect of condition, $F(5, 288) = .68, p = .639, \eta_p^2 = .012$. The significant main effect of interpretations was qualified by a significant interaction, $F(20, 1152) = 116.62, p < .001, \eta_p^2 = .669$. Simple effects

tests were used to investigate conditions separately for the proportion of unclear, yes, no, and IDK interpretations.

Unclear interpretations. First, for the unclear interpretations, we were interested in whether participants were significantly more likely to interpret children's responses as unclear in the two referentially ambiguous conditions (DYK-Yes and DYK-No) compared to the conditions where children's responses were not ambiguous (DYK-IDK, Direct-Yes, Direct-No, Direct-IDK). There were no significant differences across conditions, $ps > .05$, suggesting that the rate of identifying children's responses as unclear in the DYK/R question conditions was not significantly different than in any of the direct question conditions. Importantly, participants correctly interpreted children's referentially ambiguous responses (yes/no) as unclear less than 10% of the time (see Table 1, *Unclear* column).

Yes interpretations. Next, for the yes interpretations, we were interested in how often participants interpreted children's responses as affirming the event occurred (i.e., a "yes" response) across conditions. Results revealed that participants in the Direct-Yes ($M = .82$, $SD = .18$) and DYK-Yes ($M = .84$, $SD = .16$) conditions interpreted the children's responses as affirming that the event had occurred significantly more often than all other conditions ($ps < .001$). However, there was no significant difference between the Direct-Yes and DYK-Yes conditions, $p > .05$ (see Table 1, *Yes* column). Additionally, participants in the DYK-IDK ($M = .39$, $SD = .21$) condition were significantly more likely to interpret the response as "yes" compared to participants in the Direct-No ($M = .26$, $SD = .14$) condition, $p < .001$.

No interpretations. For the no interpretations, we were interested in how often participants interpreted children's responses as "no" responses across conditions. Results revealed that participants in the Direct-No ($M = .64$, $SD = .19$) and DYK-No ($M = .34$, $SD = .20$)

conditions interpreted the children's responses as denying that the event had occurred significantly more often than all other condition ($ps < .001$). Additionally, participants in the Direct-No condition were significantly more likely to interpret the response as "no" compared to the DYK-No condition, $p < .001$ (see Table 1, No column).

IDK interpretations. Finally, for the IDK interpretations, we were interested in how often participants interpreted children's responses as an "IDK" response across conditions. Results revealed that participants in the Direct-IDK ($M = .44$, $SD = .22$) and DYK-IDK ($M = .43$, $SD = .24$) conditions interpreted the children's responses as saying IDK significantly more often than the DYK-No condition ($M = .26$, $SD = .20$, $p < .001$). The Direct-IDK and DYK-IDK did not significantly differ, $p > .05$. However, participants in all three of these conditions (Direct-IDK, DYK-IDK, and DYK-No) interpreted children's responses as IDK significantly more often than in the Direct-No, Direct-Yes, and DYK-Yes conditions, $ps < .001$ (see Table 1, IDK column).

Interpretations of children referentially ambiguous "Yes" responses. Next, we assessed whether participants had a preferential bias towards interpreting children's referentially ambiguous "yes" responses as either answering the explicit ("I know") or implicit ("It happened") portion of the question. Specifically, we examined whether participants in the DYK-Yes condition were significantly more likely to interpret children's responses as "yes" or "unclear". A paired samples t-test revealed that participants were significantly more likely to interpret children's responses as "yes" ($M = .84$, $SD = .14$) compared to "unclear" ($M = .06$, $SD = .08$), $t(51) = 27.82$, $p < .001$. These findings suggest that participants had a preference for interpreting children's ambiguous Yes responses as answering the implicit question.

Interpretation of referentially ambiguous “No” responses. We then assessed whether participants had a preferential bias towards interpreting children’s referentially ambiguous “no” responses as either answering the explicit (“I don’t know”) or implicit (“No, it did not happen”) portion of the question, or whether they interpreted children’s responses as unclear. A One-way ANOVA was run on the proportion of participants’ interpretations (No, IDK, Unclear). Results revealed a main effect of response interpretation, $F(2,94) = 28.27, p < .001, \eta_p^2 = .376$. Post-hoc (*Bonferroni*) comparisons revealed that participants interpreted the children’s responses as being “unclear” ($M = .07, SD = .11$) significantly less often than interpreting the children’s responses as saying “no” ($M = .34, SD = .18$) or “IDK” ($M = .26, SD = .18$), $ps < .001$. There was no significant difference between No and IDK interpretations ($p = .251$), suggesting that participants did not consistently interpret children’s ambiguous No responses as answering the explicit or implicit portion of the question.

Discussion

The present study examined adults’ interpretations of children’s referentially ambiguous responses to DYK/R if/whether questions. Specifically, we examined whether adults were able to recognize the ambiguity in children’s responses, and if not, we assessed how they interpreted these ambiguous responses. Overall, results revealed that adults failed to recognize that children’s responses were ambiguous, and their interpretations varied based on question and answer type.

While previous studies have suggested that adults may fail to identify the ambiguity in children’s unelaborated “yes” or “no” responses to DYK/R if/whether questions (Evans et al., 2017), this was the first study to directly test adults’ interpretation of referentially ambiguous responses. In line with our prediction, participants identified children’s ambiguous “yes” and

“no” responses as unclear less than 10% of the time, a rate that was not significantly different than any of the Direct question conditions (where children’s responses were clearly answering the question). This suggests that participants failed to identify children’s referentially ambiguous responses as unclear. These findings are consistent with past research stating that adults generally lack an awareness of the ambiguity in children’s responses (Matthews et al., 2007). This lack of awareness of ambiguity in children’s responses may result in miscommunications between adults and children as adults often fail to follow-up on referentially ambiguous responses to clarify the child’s answer (e.g., Evans et al., 2017). Given the potential for miscommunications, future studies should examine how easily participants can be alerted to the referential ambiguity in children’s responses. It is possible that if an attorney clarifies an ambiguous response, participants will be more aware of the lack of clarity in children’s future ambiguous responses and avoid misinterpreting children’s intended meaning. Notably, the sample of participants in this study were particularly well educated. Future studies should examine a more variable sample in order to generalize the current pattern of results.

Interpretations of ambiguous “yes” responses

Given that participants failed to recognize children’s referentially ambiguous responses as unclear, and previous studies have shown that adults rarely attempt to clarify children’s referentially ambiguous responses, we were interested in examining how participants interpreted children’s ambiguous “yes” and “no” responses. First, to assess whether participants were interpreting children’s referentially ambiguous “yes” responses as answering the implicit request for information, we compared participants’ “yes” interpretations in the Direct-Yes condition (where the responses clearly answering the request for information) to the DYK-Yes condition. Results revealed that participants interpreted children’s “yes” responses as affirming the request

for information equally often in the DYK-Yes (ambiguous) and Direct-Yes (clear) conditions. These findings suggest that participants were failing to differentiate ambiguous and clear “yes” responses, treating them both as answering the request for information.

The majority of participants did fail to identify children’s ambiguous responses as unclear, thus, we were interested in whether participants had a preferential bias for interpreting these responses as answering the explicit or implicit question. That is, participants may interpret children’s “yes” responses as answering the explicit question (Yes, I know). Conversely, participants may interpret these responses as answering the implicit question (Yes, it happened). In support of our hypothesis, results revealed that participants had a preferential bias for interpreting children’s responses as answering the implicit question (84% of the time). This is problematic as past research has found that when following up on children’s ambiguous responses, children had attempted to answer the implicit and explicit question equally often (Evans et al., 2017). Therefore, adults’ inclination towards interpreting children ambiguous “yes” responses as answering the implicit question could lead to inaccurate interpretations of children’s reports.

Interpretations of ambiguous “no” responses

Next, we assessed participants’ interpretations of children’s referentially ambiguous “no” responses. To assess whether participants were interpreting these “no” responses as answering the implicit request for information, we compared participants’ “no” interpretations in the Direct-No condition (where responses clearly answer the request for information) to the DYK-No condition. Results revealed that participants interpreted children’s “no” responses as disconfirming the requested information significantly more often in the Direct-No (clear) condition compared to the DYK-No (ambiguous) condition. These findings suggest that

participants recognized that “no” responses to direct questions more clearly deny the occurrence of an event (answering the implicit question) compared to referentially ambiguous “no” responses.

Participants failed to identify children’s referentially ambiguous “no” responses as unclear, thus, we then investigated whether participants had a preferential bias for interpreting children’s responses as answering the explicit or implicit question. It is possible to interpret children’s “no” responses as answering the explicit (No, I don’t know) or implicit (No, it didn’t happen) question. Contrary to our predictions, results revealed that participants did not have a preferential bias for interpreting children’s responses as answering the implicit question (34% of the time) or explicit question (26% of the time). This is problematic because the denial of an event (if answering the implicit question) versus the denial of knowing about the event (if answering the explicit question) could lead to drastically different conclusions. It is interesting to note that just as adults are equally likely to interpret children’s ambiguous “no” responses as answering the explicit and implicit question, past research suggests that children are equally likely to answer the explicit and implicit portion of a DYK/R if/whether question (Evans et al., 2017). However, it remains unclear why adults’ have a preferential bias when interpreting children’s referentially ambiguous “yes” responses, and lack of bias when interpreting their referentially ambiguous “no” responses. Future studies are needed to examine the underlying factors associated with adults’ preferential bias when making interpreting children’s referentially ambiguous responses.

An interesting and surprising finding was that participants made errors 13% of the time when misremembering children’s response as disconfirming that the event occurred, and affirming errors 32% of the time. This suggests that participants may have held a bias towards

misremembering the child as affirming the event occurred, rather than denying. It is possible that simply hearing the details in the questions asked by the attorney may have biased participants towards believing the event occurred. This is analogous to the “statement bias,” whereby adults are biased to recall questions as statements (Padelaere & Dewitte, 2006; Wegner, Wenzlaff, Kerker, & Beattie, 1981). This could be problematic because misremembering children’s responses as affirming an event can contaminate children’s reports, leading to false information that can potentially influence trial outcomes.

Conclusion

Overall, findings from this study suggest that, similar to attorneys (see Evans et al., 2017), potential jurors do not recognize children’s ambiguous “yes” and “no” responses to DYK/R if/whether questions as being unclear. This is problematic as jurors are left to make their own interpretations of what children are intending to convey. Therefore, results from this study can provide insight to legal professionals (e.g., judges, attorneys, expert witnesses) on how to advise jury members when interpreting children’s ambiguous responses and how to question child witnesses. Given that previous studies suggest that children do not consistently answer DYK/R if/whether questions in a particular pattern (Evans et al., 2017), and participants varied on their interpretations of children’s referentially ambiguous responses, the results of this study suggest caution should be used when asking children “DYK/R if/whether” questions in a forensic context, as misinterpretations of children’s responses can lead to miscommunication.

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Table 1.

Means (and standard deviations) for response interpretations as a function of condition

	Unclear	Yes	Interpretations No	IDK	Prefer not to answer
DYK-Yes	.06 _{a#} (.10)	.84 _{a+} (.16)	.09 _c (.09)	.11 _c (.06)	.01 _a (.03)
DYK-No	.07 _a (.11)	.33 _b (.16)	.34 _{a+} (.20)	.26 _{b+} (.20)	.01 _a (.09)
DYK-IDK	.06 _a (.08)	.39 _b (.21)	.12 _c (.11)	.43 _a (.24)	.01 _a (.20)
Direct-Yes	.06 _a (.13)	.82 _a (.18)	.10 _c (.09)	.03 _c (.07)	.02 _a (.07)
Direct-No	.06 _a (.09)	.26 _b (.14)	.64 _b (.19)	.05 _c (.10)	.01 _a (.04)
Direct-IDK	.07 _a (.12)	.32 _b (.17)	.16 _c (.14)	.44 _a (.22)	.02 _a (.14)

Note. Proportion scores were calculated out of the total number of question-answer pairs across the two transcripts (n = 21). Significant differences across conditions (within columns) are represented by letter subscripts that do not match, non-significant differences are represented by matching letter subscripts. For comparisons made within conditions (DYK-Yes and DYK-No conditions), significant differences are represented by subscript symbols (+#) that do not match, non-significant differences are represented by matching symbols.