Eliciting Informative and Accurate Reports of Touching from Children

by

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## ABSTRACT

Many children who testify to alleged sexual abuse struggle to answer questions about touching, likely because attorneys and children may operate under different definitions of "touch." However, little is known about how children define touch, and the most productive question type for eliciting reports of touching has yet to be determined. In the present investigation, Study 1 examined (N = 64, 5 - 12 years of age) children's testimonies to identify the sources of misunderstanding when children report abusive touch in court. In light of the language difficulties observed in Study 1, specifically, that attorneys and children appeared to be operating under different definitions of touch, a laboratory study (Study 2) was conducted to examine (N = 95, 4 - 7 years of age) children's definition of touch, and how children reported touching in response to openended wh- questions, compared to close-ended yes/no questions. Body contact (i.e., manual and non-manual touch, compared to touching with an object) was most closely representative of children's definition of touch. Additionally, children reported touch more often, and provided more informative reports of touch, in response to whquestions, compared to yes/no questions. These findings demonstrated that children's definition of touch exists on a scale, and through asking specific, open-ended whquestions attorneys can elicit reports of touching from children even when definitional discrepancies are present.

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# INTRODUCTION

When children allege sexual abuse, their descriptions of what happened are critical to the case, as there is often a lack of physical evidence or witnesses to corroborate their claims (Bays & Chadwick, 1993; Myers et al., 1989; Stolzenberg & Lyon, 2014a). In prosecuted cases, both prosecuting and defense attorneys are likely to query children about what happened -- frequently asking about touching. For example, attorneys may ask about touching to determine: the plausibility of the child's claims, who perpetrated the touching, what method were used to accomplish touching (i.e., body part or object), what body parts were touched, and the nature of the touching (i.e., forceful; penetrative) (Guadagno, Hughes-Scholes, & Powell, 2013). In this manner, attorneys may use the word "touch" as an umbrella term to ask about abusive contact between the child and defendant.

The manner in which children answer questions about touch is important for two primary reasons. First, the way a child describes an abusive touch can speak to the plausibility of the child's allegations. The child must provide coherent and informative descriptions of the abusive touch, so their allegations are deemed plausible and the case can be properly pursued. Second, the details the child provides about the touch can determine the specific charges against the defendant. In the state of Arizona, the conviction of Sexual Conduct With a Minor (SCWM) can carry a life sentence if it is determined that penetrative touch occurred (Arizona v. Hollenback, 126 P.3d 159 (Ct. App. 2005). Thus, eliciting accurate and informative reports of touch is of high importance, and the failure to do so can lead to two notable consequences. First, children's allegations may be deemed implausible and legal actors may drop the case or

acquit the defendant. If the abusive touch actually did occur, the decision to drop the case or acquit can place the child and potential future victims in danger. Second, inaccurate accounts of penetrative touch can lead to improper sentencing, through over-sentencing a defendant to life in prison when they did not have penetrative contact with the child, and under-sentencing a defendant who did commit penetrative sexual conduct with the child.

Although eliciting accurate and informative reports are of high importance, attorneys often encounter challenges when eliciting reports of abusive touch. Specifically, children may struggle to describe what occurred, and miscommunications are likely if children and attorneys are operating under different definitions of touch (Bruck, 2009; Bruck & Landau, 2009; Hashima, Barton, & Stewart, 1988; Poole, Bruck, & Pipe, 2011; Quas & Schaaf, 2002). Additionally, the manner in which attorneys question children about touch is likely to have a huge effect on children's reports (Ahern, Stolzenberg, McWilliams & Lyon, 2016; Poole & Dickinson 2011; Quas & Schaaf, 2002; Quas, Stolzenberg & Lyon, 2018; Stolzenberg, McWilliams & Lyon, 2017a). These factors may cause inconsistencies and inaccuracies in children's reports of touch, as well as descriptions that are under-informative. As such, the present investigation aimed to improve communication between attorneys and children through three objectives: 1) identify where children are experiencing issues when reporting touch, 2) understand how children define touch, and 3) determine which questioning style elicits more productive reports of touch.

#### LITERATURE REVIEW

Researchers have explored the sources of children's difficulty when describing an abusive touch. Specifically, answering questions about the mechanics of abuse, which includes questions about body positioning, location of touching, nature of touching (i.e., forceful of penetrative), and body movement, is often difficult for children. When describing the mechanics of abuse, children experience cognitive and language limitations and in particular, struggle to answer questions about touching. Children may struggle to answer questions about touching because attorneys and children operate under different definitions of touch. However, little is known about how children define touch, where they make distinctions, and how their definitions change with age.

# **Children's Cognitive Limitations**

When describing an abusive interaction, children may experience difficulty due to cognitive limitations. Specifically, children may provide inconsistent reports of the mechanics of abuse due to repeated interviewing and changes in their memories. Following multiple interviews about an abuse incident, children may become confused across interviews and incorporate details suggested in those interviews into their target memory of the abuse incident (La Rooy, Lamb, & Pipe, 2009). This is especially likely if the child was questioned repeatedly using a suggestive questioning style, experienced long delays between the abuse incident, interviews, and the testimony, and was asked to describe more peripheral details about the touching incident (Andrews & Lamb, 2014; Goodman & Quas, 2008). Due to both their developing cognition and the process of reporting abuse, children may provide details during testimony that are inconsistent with previous reports of what occurred.

Children also experience cognitive limitations when asked to recall and describe the mechanics of abuse, as studies have demonstrated that children have difficulty recalling a touch when the touch is embedded within a sequence of actions (Bruck & Landau, 2009; Poole & Dickinson, 2011). It is easy to imagine the challenge this may present for descriptions of the mechanics of abuse, as abusive touches are dynamic and often embedded within a complex sequence of actions. To illustrate, an abusive touch may be embedded within a sequence of otherwise innocuous actions, such as wrestling or receiving a piggy-back ride. Alternatively, if an abusive touch is penetrative in nature, the sequence of actions may include the actions that typically occur during sexual intercourse. If the abuse is not a static event, recalling and describing the exact details of the sequence of actions surrounding an abusive touch may be quite difficult.

Furthermore, describing penetrative touch may present a particular challenge for children, as the actions that typically occur during penetrative sexual encounters are often unfamiliar to children outside of the abuse context (Teoh et al., 2014). Although children are expected to have received some level of sex education (i.e., learning about sexual body parts and their functions), even older children often do not understand what actions occur during sexual intercourse (Gordon, Schroeder, & Abrams, 1990). Because of this, when recalling penetrative touch children are required to recall exact details, and cannot fill in the gaps in their memory with prior knowledge of what occurs during sexual intercourse. Since judgements based on situational memory (i.e., valid inferences from a relevant knowledge schema) are more easily accessed than precise memory, this lack of prior knowledge about penetrative sexual encounters is a deficit that children must overcome when recalling the abuse incident (Christiaansen, 1980; Conway, Cohen, & Stanhope, 1991; Goldsmith et al., 2005; Kintsch et al. 1990; Kintsch et al., 1975; Koriat, Levy-Sadot, Edry, & de Marcas, 2003; Stanhope, Cohen, & Conway, 1993). In this way, gaps in children's memory and knowledge schema when describing the mechanics of abuse presents a cognitive limitation that may lead to inconsistent and under-informative reports.

When children are asked to describe the mechanics of abuse, they must recall and describe a series of complex, unfamiliar actions that occurred months, or sometimes years, prior. This is often quite difficult for children. First, children must overcome changes in their memories and resist the influence of repeated interviews. Second, children must recall a complex sequence of actions. Third, some children must recall the unfamiliar actions surrounding penetrative abuse and cannot call upon a relevant knowledge schema to make situational inferences about the details that they do not remember.

Although developing cognition can hinder children's ability to describe an abusive touch, attorney questioning style can help guide children's memories and facilitate informative reports. For example, attorney questions can provide children with additional, specific cues and scaffolding (i.e., Q: "Okay. We were talking about the night of your sister's birthday party. You were in your room, and he walked in and closed the door. What happened right after he walked in and closed the door?") (Walker & Warren, 1995).

Through scaffolding, attorneys can help cue the child's memory and facilitate accurate and informative reports. However, due to the unfamiliar and complex nature of sexually abusive actions an issue remains: children may not have the language to describe what occurred. Given children's limited language for describing sexually abusive actions, attorneys attempt to facilitate reports of the mechanics of abuse through using simple, developmentally appropriate language. For example, attorneys may use the word "touch" as an umbrella term to refer to various forms of sexually abusive actions. This, however, can further exacerbate the misunderstanding. Although "touch" may seem linguistically simple and developmentally appropriate, in practice it is a vague term because attorneys and children often communicate while unknowingly operating under different definitions of touch.

## **Children's Language Limitations**

When attorneys attempt to elicit reports of the mechanics of abuse through asking about "touch," some children may struggle because their definition of touch is different from that of the attorney. Children often have an under-inclusive definition of touch (Poole et al., 2011). To facilitate better understanding between attorney and child, attorneys must clearly communicate what definition of touch they are operating under. This task is made easier if children's definition of touch is established, as attorneys can be privy to when and how they must provide additional clarification. To illustrate, if children only consider manual touch (e.g. touch with the hand) to be touch, attorneys might wish to add additional anchoring to questions about touch done with the mouth (i.e., Q: "When did he touch you *with his mouth*?").

Only one existing study, by Hashima, Barton, and Stewart (1988), has directly tested how 3- and 4-year-old children define touch. This study asked the children to sort photos of manual touch, non-manual touch, and touch done with a washcloth into a "touch" or "no touch" pile. Their findings showed that children typically did not consider non-manual touch (in this study, touching done with the mouth) to be touch, but correctly reported touch when it was done with the hand and with a washcloth held in the hand. Hashima and colleagues stated that upon asking children to elaborate on why they sorted the non-manual touch photos in the "no touch" pile, children gave explanations like "it's kissing, not touching." Thus, these researchers argue that children consider manual and non-manual touch to be mutually exclusive.

Furthermore, children's explanations in Hashima and colleague's (1988) study, as to why they categorized the touch pictures in the way that they did, indicated that children's understanding of touch may be positively valenced (i.e., "it's touch because they're playing;" "it's not touch because they're being mean"). Hashima and colleagues speculate that valenced definitions of touch may be due to adults teaching children that touch should be "something gentle and not aggressive" (p. 689). This may mean that in the context of abuse allegations, children may deny that an act involved touching if they perceived it to be negative.

Despite the findings of Hashima and colleagues (1988), however, more recent studies have continued to speculate and disagree on how children define touch and where they make distinctions. For example, Quas and Schaaf (2002) speculate that children may deny touch if a more specific label for the action is available, such as kissing or hugging. Other researchers have offered a different explanation for this observed pattern and speculate that children consider touching to be an action distinct from other "normal" actions, such as kissing and hugging (Bruck, 2009; Bruck & Landau, 2009; Poole et al., 2011). These speculative definitions, however, were not directly tested in the abovementioned studies. Rather, these definitions were derived from observations as to how

children were answering questions about an experienced or falsely-suggested touch encounter. Given the current state of disagreement, it is evident that more research is needed to test and expand the findings of Hashima and colleagues' (1988) study.

A central purpose of the present investigation was to advance the current knowledge on children's definition of touching, through testing and expanding the findings of Hashima and colleagues (1988). Specifically, the study by Hashima and colleagues found that preschool children confirmed touch when it was done with the hand and with a washcloth held in the hand, but denied touch when it was done with the mouth. Additionally, they speculated that children's definition of touch may include valenced distinctions. The current investigation examined whether these findings can be replicated and expanded to children beyond preschool age. Through doing so, the present investigation sought to provide a more nuanced understanding of children's definition of touch. Understanding how children define touch can improve the way attorneys ask questions, as they may need to provide additional clarity when asking questions about touching to ensure the child understands what is being queried about.

# **Effects of Attorney Questioning**

Attorneys have developed various questioning strategies to elicit accurate and informative descriptions of abuse from children who are unable to spontaneously provide these descriptions. Unfortunately, past solutions have been imperfect, and attorneys must often make a choice between informativeness and accuracy. Specifically, the use of anatomical dolls, drawings, and leading questions have been found to increase the frequency of reporting abuse (Ahern, Stolzenberg, McWilliams & Lyon, 2016; Quas et al., 2018; Saywitz, Goodman, Nicholas, & Moan, 1991; Steward et al., 1996;

Stolzenberg, McWilliams & Lyon, 2017a). However, dolls, drawings, and leading questions also increase the frequency of false reports (Bruck, Ceci, & Francouer, 2000; Bruck, Ceci, Francouer, & Renick, 1995; Poole & Dickinson, 2011). At present, an optimal strategy, that would facilitate informative reports of abuse without increasing false reports, has yet to be determined.

The use of anatomical dolls and drawings initially appeared to be a promising avenue, as these tools aimed to make describing the abuse easier and less traumatic for children (Groth, 1984; Morgan, 1995). However, findings on the efficacy of these tools were mixed, depending on whether informativeness or accuracy was the outcome of interest. On the one hand, the dolls increased informativeness, as children who otherwise omitted reports of touch were more likely to report touch when questioned with anatomical dolls and drawings (Saywitz et al., 1991; Steward et al., 1996). On the other hand, however, the use of anatomical dolls and drawings also increased the likelihood of false reports (Bruck, et al., 1995; Bruck, Ceci, & Francouer, 2000). Due to the risk of false reports, attorneys have widely ceased using these tools, instead opting for leading questions when they need to elicit specific details from the child.

In order to elicit specific details about the mechanics of abuse, judges often allow highly focused, leading questions during direct examinations of children (Myers, 2010). Leading questions are typically forbidden in court, as they hinder the witness's ability to explain what happened in their own words and instead allow attorneys to argue their own interpretation of the case to the jury (Mueller, Kirkpatrick, & Richter, 2018). However,

leading questions are typically allowed when questioning children, as they are often necessary to elicit "the precise physiological details of sexual assault" (United States v. Grassrope, 2003; p. 869).

Leading questions may take the form of close-ended questions, which only request a single word or detail (i.e., Q: "Did he touch you?" A: "Yes;" Q: "When he touched you, were your pants on or off?" A: "Off"). Studies have found that closedended yes/no questions can increase children's truthful reporting of adult transgressions (Ahern, Stolzenberg, McWilliams & Lyon, 2016; Quas, Stolzenberg & Lyon, 2018; Stolzenberg, McWilliams & Lyon, 2017a). Similarly, a study by Saywitz and colleagues (1991) found that the majority of children who experienced a vaginal or anal examination reported genital contact only when directly asked. Despite increasing disclosures, however, research has well-established the dangers associated with asking leading, closed-ended questions.

It is recommended that investigative interviewers avoid asking closed-ended questions because they can elicit inaccurate answers from children. In response to closed-ended questions, children will often either ascent, descent, or select one of the options provided in the question, even if neither of the options are accurate (i.e., Q: "Were your pants on or off?" A: "On;" when in reality the child's pants were pulled down around their ankles; Stolzenberg, McWilliams, & Lyon, 2017a, 2017b). Furthermore, children are unlikely to spontaneously describe touching when asked closed-ended questions. For example, in Teoh and colleagues' (2014) study, children used the word "touch" more frequently in response to open-ended recall prompts (i.e., "What happened?" A: "He touched me;"), compared to closed-ended recognition prompts (i.e., "Did he touch you?"

A: "Yes;"). Children may also provide inaccurate reports of touching in response to closed-ended questions. For example, in Quas and Schaaf's (2002) study, some children spontaneously described a touch in response to open-ended recall questions but answered "no" to yes/no questions. Similarly, Poole and Dickinson (2011) found that the children who were misled by interviewers reported more false information about an experienced touch as the interviewer's questions became more specific.

To avoid the issues associated with closed-ended questions, researchers recommend that attorneys ask open-ended questions whenever possible (Lamb et al., 2018; Lyon 2005). In general, the accuracy rates of children's answers are typically higher in response to open-ended questions, compared to closed-ended questions (Lamb et al., 2007; Lamb et al., 2018; Stolzenberg, McWilliams, & Lyon, 2017a; Stolzenberg, McWilliams, & Lyon, 2017b). For querying about touch specifically, open-ended questions are less likely than closed-ended questions to lead to false reports (Saywitz et al., 1991).

Despite the accuracy of details elicited by open-ended questions, attorneys are trained to maintain control of their witness and ask efficient questions, and for this reason, questions that are truly open-ended (i.e., invitations like "Tell me everything that happened) are rarely asked (Andrews, Lamb, Lyon, 2015; Stolzenberg, Morse, Haverkate, Garcia-Johnson, 2020). Some open-ended questions are less efficient because they are vague, and in response to these questions, children may fail to respond, or provide information that is not forensically important, and may require additional cues from the attorney (Andrews, Ahern, Stolzenberg, & Lyon, 2016; Lamb et al., 2018; Malloy, Katz, Lamb, & Mugno, 2015; Saywitz, 1987). To illustrate, in Poole and Dickson's (2011) study, children participated in science demonstrations and for some children, an innocuous touch occurred during the science demonstration. They found that children's responses to open-ended questions typically focused on the science activities rather than touching. However, more children reported touch when interviewers asked increasingly specific questions. Since truly open-ended questions may be inefficient and thus are rarely asked, an assessment of the types of questions that most efficiently elicit reports of touch is needed. It is likely that questions that are open-ended but more focused, such as wh- prompts, will be a more efficient option (Ahern, Andrews, Stolzenberg, & Lyon, 2018; Andrew et al., 2016; Stolzenberg & Lyon, 2017).

Given their current, limited strategies, attorneys often must decide what is most important when asking children questions about an abusive touch. On the one hand, there is a risk of inaccuracy with leading closed-ended questions, as children may falsely report touch or provide minimally-sufficient but inaccurate information in response to these prompts. On the other hand, attorneys may fail to elicit important details in response to open-ended questions (Lamb et al., 2018; Poole & Dickson, 2011; Saywitz et al., 1991). The present investigation aimed to help attorneys navigate this balance and facilitate informative reports through assessing the overall productivity of children's reports of touching in response to closed-ended, compared to open-ended, questions.

## PRESENT INVESTIGATION

The present investigation aimed to identify where children are having issues with reporting touch, how they define touch, and productive questioning styles for eliciting information about touching. To do so, Study 1 examined the misunderstandings that occurred when children described the mechanics of sexual abuse in criminal trials, focusing particularly on issues with reporting touch. In light of the language issues around touching observed in Study 1, Study 2 tested how children define touch. Additionally, Study 2 tested whether open-ended wh- prompts or closed-ended yes/no prompts elicited more productive reports of touch.

Although numerous studies have speculated about how children may define touch, only one published study in the current body of literature (Hashima et al., 1988) has tested children's definition of touch in a laboratory setting. This study's findings have yet to be replicated or assessed in children older than 4 years old, and the present study aims to do so. This effort to expand the current knowledge on how children report and define "ouch contributes to what is known about children's language development, as well as their competencies to serve as victims and witnesses in the criminal justice system. Furthermore, this investigation examined how question type affects children's ability to report touch and as such, practical recommendations for attorneys and other investigative interviewers may be yielded from the findings of the present investigation.

## **STUDY 1**

Study 1 was an analysis of the misunderstandings that occurred when children were asked to describe the mechanics of sexual abuse in court, with a particular interest in issues around touching. Once we identified instances of misunderstanding between attorney and child, we qualitatively examined the overarching themes that contributed to these misunderstandings. The aim of this analysis was to identify whether and how frequently issues around touching occurred, and the sources of these issues.

Specific questions this study aimed to answer were: 1) When a misunderstanding occurred between an attorney and child, was the issue due to the attorney's questioning

style, the child's misinterpretation, or both?; and 2) What were the sources of misunderstanding around touching? We hypothesized that imprecise language would lead to misunderstanding around touching.

# METHODOLOGY

The following protocol was approved by the Internal Review Board (IRB) at Arizona State University. With the cooperation of Maricopa County attorneys' office, we obtained a sample of 398 victims represented across 252 cases of child sexual abuse (CSA) occurring between January 2005 through December 2015 in Maricopa County. We worked with the county attorney's office to receive a list of all eligible cases and then contacted the court reporters directly. Cases were eligible if they involved at least a single charge of: Sexual Conduct with a Minor (A.R.S. 13-1405), Child Molestation (A. R. S. 13-1410), or Sex Abuse (A. R. S. 13-1404). We contacted and paid court reporters to share transcripts of completed cases; 73 court reporters were contacted and 47 responded (64% response rate). We received 214 complete victim's testimonies across 142 cases (some cases included multiple victims); the remaining court reporters were nonresponsive. Of these 214 testimonies, 134 were minors at testimony (across 101 cases;  $M_{\text{victim per case}} = 1.33$ ,  $SD_{\text{victim per case}} = .65$ ), whereas the remaining transcripts involved young adults testifying about alleged victimization during their childhood. For the purposes of the present investigation, we examined 63 testimonies involving minors 12 years old or younger (eliminating those cases involving teenagers). The decision to focus on younger children was due to the developmental nature of this investigation; we believed language issues and difficulties with describing the mechanics of abuse would likely be strongest among the youngest victims.

# Sample

The children ranged in age from 5 to 12 years old (M = 9.44, SD = 1.97) and only 11% of our sample involved male victims. Defendants (94% male) were the child's parent or caregiver 29% of the time, another family member 33% of the time, a family friend or other familiar adult (e.g. coaches, babysitters, neighbors) 6% of the time, a stranger 8% of the time, and categorized as 'other' in 29% of cases. Children alleged penetration or attempted intercourse in 25% of cases, oral copulation or genital contact in an additional 10% of cases, and less severe abuse in 52% of cases (fondling, exhibitionism, etc.). About half of the children in our sample (52%) alleged repeated abuse. Ninety percent of cases resulted in a conviction of at least one charge.

# **Systematic Coding**

Two coders reliably identified all instances of question-answer pairs that examined the mechanics of abuse. Questions were considered eligible if they referred to the nature of touching or abuse interactions, including any question about body positioning, touching, body movement, clothing placement/removal, or the perpetrator or child's actions during abusive episodes.

Once a question was identified as pertaining to body mechanics, two coders assessed reliably whether each question and answer pair had explicit misunderstanding. To assess reliability, two coders were trained on the coding guide. Both coders independently coded the entire sample, and their codes were compared to each other. Initial reliability assessments achieved a minimum reliability of  $\kappa = .80$  on all primary variables. However, once all transcripts were coded all disagreements were resolved to ensure 100% reliability. We interpreted a misunderstanding whenever the child expressed confusion (i.e., "I don't get what you mean"), provided inconsistent details (i.e., Q: "Do you remember what you were wearing?" A: "No." Q: "Were you wearing pants?" A: "Yes, they were brown capris"), provided a clearly inappropriate level of detail (i.e. Q: "What were you wearing when he touched you?" A: "Clothes"), or failed to provide clear and informative answers after repeated questioning (i.e.: Q: "When you say he raped you, what do you mean?" A: "He did adult stuff to me." Q: "When you say adult stuff, can you tell me what that means?" A: "He did nasty stuff to me"). For the current thesis, we were particularly interested in the prevalence of misunderstanding around touch. Additionally, if issues around touch were prevalent, we were interested in what these issues looked like in practice.

#### RESULTS

Across the 63 transcripts examined, 1,391 questions (7% of all attorney questions, N = 20,189) pertained to body mechanics. One-hundred and thirty-one instances of clear and explicit misunderstanding were identified. At least one misunderstanding occurred in 45 of the 63 transcripts (71%) examined. Transcripts in which misunderstanding occurred contained an average of 3 misunderstandings, with the occurrence rate ranging from 1 to 10 misunderstandings. We observed that when children struggled to answer questions about the mechanics of abuse, they often experienced issues around touching. Specifically, 18% of all misunderstandings identified (N = 131) were at least partially due to difficulty with touch. All examples of misunderstanding around touching that occurred across 63 transcripts are shown in Appendix A.

Both attorney questioning style and children's misinterpretations contributed to misunderstandings around touching, and consistent with our hypothesis, imprecise language was common. For example, attorneys used imprecise language to ask about the touch actor and touch recipient, touch incident, and nature of the touching (i.e., Q: "Was there a time when someone touched you *somewhere you didn't like*?"). In these instances, children often misinterpreted what was being queried about and provided answers that were under-informative or inconsistent. Misunderstandings were not mutually exclusive, in that a single instance of misunderstanding between attorney and child might have contained more than one identifiable issue (i.e., Q: "Do you remember a time when a man touched you on your private area?" A: "No;" the use of "a man" and "private area" were imprecise, and the child had difficulty answering the "touch" question, denying that touch occurred; Arizona v. Silva-Acosta, 2009).

We observed several potential sources of children's difficulty with responding to questions about touch. In approximately half of the misunderstanding around touch, language issues appeared to be the source of difficulty. For example, some children denied a touch occurred when the touch was done with a different body part than what they believed the attorney was querying about. To illustrate, in the testimony of an 11-year-old female, touching done with the mouth did not appear to be within the child's concept of touch. When the prosecutor asked about touch done with "anything besides the hand" in general terms, the child denied the touch occurred (i.e., Q: "Did he ever touch you with -- your middle part with anything besides his hand?" A: "No"). The child only answered in the affirmative after the attorney specified, touch *with his mouth* (i.e, Q: "Did he ever touch you with his -- his mouth?" A: "Yes;" Arizona v. Simmons, 2007).

Additionally, in the testimony of a 6-year-old girl, the child denies manual touch when the attorney asks about touch done with "a different part of his body" (i.e., Q: "Was there ever a time that your Bad Dad touched your colita with a different part of his body?" A: "No." Q: "Did your Bad Dad ever touch your colita with this hand?" A: "Yes;" Arizona v. Morales Rosales, 2007). In this instance, the child seems to believe the attorney is *not* querying about touch done with the hand, and as a result, denies the touch occurred until the attorney clarifies. Furthermore, in the testimony of an 11-year-old female, the child made a distinction between touch done with the hand and touch done with the finger, whereas the attorney did not make this distinction. These incompatible distinctions induced miscommunication (i.e., Q: "And as he was touching you, did anything else happen with his hand." A: "No." Q: "What about his fingers?" A: "He put them inside of me;" Arizona v. Simmons, 2007). Note here that the attorneys in all instances described above asked yes/no questions that contained vague language, such as "ever touch," "anything besides his hand," and "anything else happen." This style of vague, closedended questioning, which included polarity terms (e.g. any, ever), may have further hindered the children's ability to report touch.

Attorneys and children also appeared to have different understandings of whether touch included both surface contact and penetration. To illustrate, in the testimony of a 12-year-old female, the child seemed to consider penetrative touch to be "touch," but the attorney did not. As a result of their incompatible definitions, the attorney asked about "something else" other than touch, and the child believed the attorney was asking about an action other than the perpetrator touching and penetrating the child's vagina (i.e., Q: "Okay. And did something else happen with your vagina that day when you were on the floor --" A: "No." Q: "-- When he touched your vagina?" A: "Well, no, not really"). Note here that the attorney asked a yes/no question and included the imprecise phrasing "something happen with your vagina" to ask about penetrative touch, which likely further confused the child. Upon asking more specific yes/no questions with the additional cue "his finger," the attorney was able to elicit the information they were looking for (i.e., Q: "Okay. You had said something to the detective about his finger, you remember that?" A: "Yes, his fingers were in my vagina;" Arizona v. Romero, 2005).

Finally, when attorneys asked about touch, they were sometimes asking exclusively about abusive touch, but the child answered by reporting both innocuous and abusive contact. We observed this in the testimony of a 7-year-old male (e.g., Q: "Did anyone else touch you while you were at that house?" A: "No." Q: "Did [Your Sister]?" A: "Sometimes, yeah." Q: "And when we're talking about touching you, we're talking about bad touching, right?" A: "Yeah." Q: "Did she ever touch you in a bad way?" A: "I don't remember, but she did touch us;" Arizona v. Acosta, 2006). Contrastingly, in some instances, attorneys may ask about any form of bodily contact, but the child believes the attorney is only asking about sexual touch. When the implications are unclear, miscommunications may occur.

## DISCUSSION

Through content analysis of trial transcripts, we identified issues with reporting touch that were often due to language issues. Consistent with prior studies, children in this study often appeared to have a restrictive and under-inclusive definition of touch (Hashima et al., 1988; Poole et al., 2011). Notably, we observed that some children failed to report touch when the touch was done with a different body part than what they believed the attorney was querying about. Some children failed to report touch when the touch was done with the mouth. However, although Hashima and colleagues (1988) found that children are likely to endorse touch when it is manual, we found that some children failed to report touch when asked about manual touch. Study 2 further assessed these observations through testing how children report touch in response to vignettes depicting touch done with the hand, other body parts, and other objects, and no touch control vignettes.

Furthermore, Study 1 revealed that children's abilities to accurately report and describe touch were at times hindered through the way attorneys phrased their questions. Consistent with the prior studies that have highlighted the dangers of close-ended prompts (e.g., Poole & Dickinson, 2011; Quas & Schaaf, 2002), yes/no questions led to inconsistent responses. Additionally, we observed that vague questions led children to misinterpret attorney questions. This is consistent with several studies that have shown children struggle to answer questions that are not specific, and due to this, fail to proffer the details the attorney is looking for (Andrews, Ahern, Stolzenberg, & Lyon, 2016; Lamb et al., 2018; Malloy, Katz, Lamb, & Mugno, 2015; Saywitz, 1987). In light of these findings, Study 2 also examined how children report touch in response to relatively vague, open-ended questions (i.e., "What's happening in this picture?"), compared to specific, closed-ended (i.e., "Are the boy and the girl touching?").

### STUDY 2

Study 1 revealed that misunderstandings during trial occurred when attorneys and children operated under different definitions of touch. Most important for the current investigation, Study 1 revealed that children may fail to report touch when they believe the questioner is asking about a specific form of touch. In light of these findings, Study 2 was designed to test how children define touch and where they make distinctions.

In addition to the findings of Study 1, the findings of Hashima and colleagues' (1988) laboratory study on children's definition of touch informed the stimuli in Study 2. The study by Hashima and colleagues (1988) examined whether preschool children had a narrower definition of touch than adults, considering only manual touch (e.g. with the hand) to be touch. They found that children reported touch when it was done with the hand or the hand covered by a washcloth. These findings indicate that, in addition to manual touch, children consider touch done with an object held in the hand to be touch. This finding, however, has yet to be replicated. For this reason, we included a "touch with object" condition in Study 2. If children frequently reported touch in response to the "touch with object" vignettes, this would indicate that touch accomplished via an object held in the hand is included within children's touch framework. Furthermore, Hashima and colleagues found that children did not consider non-manual touch to be touch, but only examined touch done with the mouth. The current investigation expanded this finding by testing vignettes of non-manual touch done with the mouth, foot, elbow, arm, and knee.

Upon asking children why they categorized the touch vignettes in the way they did, Hashima and colleagues (1988) noted that some children's definition of touch appeared to be positively valenced. However, this was a qualitative observation and has not yet been directly tested. As such, this study also examined whether children provided positively or negatively valenced descriptions of touch (i.e., "it's hitting, not touching"). Lastly, this study was also interested in whether children made distinctions in agency (i.e., if a boy's hand is outstretched touching a girl's shoulder, "the boy is touching the girl but the girl is not touching the boy").

The decision to include additional valence and agency variables was largely due to our overarching goal of gaining a more specific and nuanced understanding of how children define touch. This understanding is crucial if attorneys are to ask the most specific, well-formulated questions possible. To illustrate, an attorney may ask about an abusive episode during which the victim touched the defendant. If that attorney asks, "Did *he* touch *you*?" but the child believes touching is positively valenced and makes distinctions in agency, the child is likely to respond "no." If the attorney is unaware of the distinctions the child is making, and consequently does not ask follow-up questions to address these distinctions (i.e., "Okay, I'm talking about touching in a bad way;" "Did you touch him?"), this denial of an abusive act may remain uncorrected.

Additionally, Study 1 revealed that the manner in which attorneys phrase their questions influenced children's reports of touch, and both vague phrasing and yes/no questions were problematic. As such, Study 2 examined whether vague, open-ended questions (i.e., "What's happening in this picture?") or specific, closed-ended questions (i.e., "Is the boy touching the girl?") elicited more productive reports of touch.

The hypotheses were as follows: 1) Yes/no questions will elicit more reports of touching than wh- questions; 2) Yes/no questions will elicit more incorrect reports of touching; 3) Wh- questions will elicit more body mechanics information than yes/no questions; 4) Children will frequently make distinctions in agency, and the way questions are asked will influence the way children describe agency; 5) frequency of answers that convey positive and negative valence will increase with age; 6) Children will distinguish

between different kinds of touching, whereby children may be less likely to perceive touch with an object as touching, compared to more obvious forms of touching (e.g. manual and non-manual touching).

# METHODOLOGY

The following protocol was approved by the Internal Review Board (IRB) at Arizona State University.

# Sample

We first conducted a power analysis for a mixed, non-repeated measures ANOVA with an estimated medium effect size and F = 0.25. The ideal sample size yielded from this analysis was N = 104. Participants included N = 95 4- to 7-year-old children (M = 5.42, SD = 1.08, 54% female).<sup>1</sup> The sample was relatively ethnically diverse (70% Caucasian; 20% Hispanic; 4% African American; 4% Indian; and 2% or less Arabian, Asian, Indonesian, Portuguese, Serbian, Slovakian, Taiwanese, and Turkish) and predominantly middle to upper class (42% had an annual income of \$100,000 or more; 11% \$75,000 - \$99,999; 10% \$40,000 - \$59,999; 9% \$20,000 - \$39,999; and 7% \$15,000 or less). Children predominantly learned English first (87% of children) and 91% of children spoke English at home. All participants were patrons of a local children's museum.

## **Materials and Procedure**

Interviewers set up an exhibit at a local children's museum where children could participate in the experiment if they and their families expressed interest. Once they

<sup>&</sup>lt;sup>1</sup> The sample is slightly under-powered. All data collection in the field was first slowed, then halted due to public health concerns and national closures.

expressed interest, the interviewer gave a brief description of the study to the child (i.e., "I'm a scientist and I want to know what kids think about the word touch. What will happen is I will show you pictures and ask you questions about the pictures. It will take about 5 minutes") and confirmed with the child that they would like to participate. The interviewer then informed the child that they could stop at any time if the child no longer wanted to participate. Next, the interviewer asked the child's guardian to sign a consent form and complete a sheet with demographic information. Parents were also invited to take an information sheet with them, which included a description of the study and contact information for the principal investigator should they have further questions or concerns.

The interviewer showed the child a presentation of 24 vignettes, with each vignette showing a boy and a girl interacting, and in some instances, touching (6 touch with the hand vignettes, 6 touch with another body part vignettes, 6 touch with object vignettes, and 6 no touch control vignettes). The order of presentation for each vignette was fully counterbalanced. At the presentation of each vignette, the interviewer started by pointing to each figure in the vignette and stating, "this is the boy, and this is the girl." After each vignette, children were asked questions about the nature of touching. These questions varied based on the condition each child was assigned to.

Children were randomly assigned, between-subjects, to a question condition. Children in the wh- question condition (N = 49) were asked, "What's happening in this picture?"

Children in the yes/no condition (N = 46) were asked 3 questions per vignette: 1) "Is the boy touching the girl;" 2) "Is the girl touching the boy?;" 3) "Are the boy and the girl touching?" The entire procedure lasted approximately 3.5 to 5 minutes, depending on how quickly the child answered and the level of elaboration provided in their answers. Each interview was video recorded, and all video recordings were kept in a secure location.

# **Transcription and Coding**

Statements by the child and interviewer were transcribed and coded by trained research assistants. Children's answers were coded for whether the child misinterpreted the photo, reported touch, provided additional body mechanics information, made distinctions in agency, and provided a valenced description of touch.

**Misinterpretation.** Children's answers were coded dichotomously for whether or not they misinterpreted the picture (0 = no misinterpretation, 1 = misinterpretation). For example, if the vignette depicted a boy touching a girl's chest with a pencil, and the child answered, "they're holding hands," this was considered a misinterpretation.

**Reports of touch.** Children's answers were coded dichotomously if they reported touch (0 = did not report touch, 1 = reported touch). For the yes/no question condition, if children responded "yes" to at least one question (out of the three: "boy touching the girl;" "girl touching the boy;" "boy and girl touching") they were considered to have reported touch. For the wh- question condition, the child could implicitly (i.e., "he's poking her") or explicitly report touching in response to the wh- question.

Accuracy. Additionally, children's accuracy in reporting touch was coded dichotomously (0 = inaccurate, 1 = accurate). If the child did report touch in response to a touch with the hand, touch with another body part, or touch with an object vignette, or did not report touch in response to a no touch control vignette, their answer was

considered accurate. Contrastingly, if the child did not report touch in response to a touch with the hand, touch with another body part, or touch with an object vignette, or did report touch in response to a no touch control vignette, their answer was considered inaccurate.

**Body mechanics.** To assess which question type elicited more informative answers, children's answers were coded dichotomously for whether they contained additional information about body mechanics (0 = did not contain body mechanics information, 1 = did contain body mechanics information). Body mechanics information were any specific details about which body parts or objects were involved in the touch (i.e., "the girl is touching the boy's *face* with a *feather*").

**Agency.** Expressions of agency were also coded dichotomously (0 = did not express agency, 1 = did express agency). Children could express agency unprompted in response to wh- questions (i.e., Q: "What's happening in this picture?" A: "The boy is touching the girl"). Additionally, children could express agency in the yes/no condition through responding affirmatively to the "boy touching girl" question and negatively to the "girl touching boy" question, or conversely, responding negatively to the "boy touching girl" question and affirmatively to the "girl touching boy" question (i.e., Q: "Is the boy touching the girl?" A: "No." Q: "Is the girl touching the boy?" A: "Yes, only the girl is touching").

**Valence.** In order to test the Hashima and colleagues' (1988) observation that children may positively valence touch as they define it as gentle and non-aggressive, expressions of positive or negative valence were coded (0= did not express valence, 1 = expressed positive valence, 2 = expressed negative valence). In order to help ensure that

the valence was influenced by the nature of the touch, instead of other features of the vignette, all vignettes included children with only eyes, and no additional facial features or expressions. Children's answers were coded as neutral (i.e., did not express valence) if they used an action term with neutral connotations (i.e., "They're touching"). Children's answers were coded as positively valenced if they used an action term with positive connotations (i.e., "Yes, they're sharing"). Children's answers were coded as negatively valenced if they used an action term with negative connotations (i.e., "He's kicking her and being mean to her").

**Reliability.** Two coders were trained on the coding guide. Coders independently coded 20% of the trial transcripts and reached a minimum reliability of  $\kappa = .80$  on each variable.

#### RESULTS

Prior to testing our hypotheses, we wanted to establish that children reasonably understood and correctly interpreted the study vignettes. We assessed children's proportion of responses that misinterpreted the vignettes and observed that children rarely misinterpreted (M = 0.01, SD = 0.03). Thus, children's misinterpretations of the touch vignettes were not considered in subsequent analyses.

We examined how question type (yes/no versus wh-) and the nature of touch (i.e., touch condition: manual, non-manual, and with an object) influenced the manner in which children reported touch by age group. Table 1 shows the descriptive statistics for each proportional outcome variable of interest by question type and age group.

			Yes/	위					1	-4/				Ā	cross Qu	estion Typ	9	
	4-5-ye;	ar-olds	6-7-ye	car-olds	All c	hildren	4-5-ye	ar-olds	6-7-ye	ar-olds	All ch	uildren	4-5-ye	ar-olds	6-7-ye	ar-olds	All ch	uldren
I	Μ	(SD)	Μ	(SD)	М	(SD)	Μ	(SD)	Μ	(SD)								
Reported Touch	0.47	(0.18)	0.38	(0.16)	0.43	(0.17)	0.56	(0.14)	0.55	(0.17)	0.55	(0.16)	0.51	(0.17)	0.47	(0.18)	0.49	(0.17)
Accurate Responses	0.83	(0.13)	0.80	(0.15)	0.82	(0.14)	0.79	(0.14)	0.79	(0.17)	0.79	(0.15)	0.81	(0.13)	0.79	(0.16)	0.80	(0.14)
Body Mechanics Responses	0.01	(0.01)	0.01	(0.02)	0.01	(0.01)	0.31	(0.19)	0.34	(0.19)	0.33	(0.19)	0.16	(0.20)	0.19	(0.22)	0.17	(0.21)
Valenced Responses	0.004	(0.02)	0.01	(0.03)	0.01	(0.02)	0.37	(0.26)	0.43	(0.25)	0.40	(0.25)	0.18	(0.26)	0.24	(0.28)	0.21	(0.27)
Reported Touch in Condition																		
Manual	0.63	(0.23)	0.56	(0.19)	0.60	(0.21)	0.90	(0.04)	0.80	(0.23)	0.85	(0.19)	0.76	(0.23)	0.69	(0.24)	0.73	(0.24)
Non-Manual	0.64	(0.22)	0.63	(0.24)	0.64	(0.23)	0.76	(0.23)	0.73	(0.27)	0.74	(0.25)	0.70	(0.23)	0.68	(0.26)	0.69	(0.24)
W/ Object	0.46	(0.3)	0.28	(0.3)	0.38	(0.31)	0.59	(0.31)	0.65	(0.29)	0.62	(0.3)	0.53	(0.31)	0.48	(0.35)	0.50	(0.33)
No Touch	0.12	(0.12)	0.07	(0.12)	01.0	(0.12)	0.01	(0.03)	0.01	(0.03)	0.01	(0.03)	0.07	(0.11)	0.04	(60.0)	0.05	(0.10)

Table 1. Descriptives Statistics of Propotional Outcome Variables by Age and Question Type (N = 93)

For analyses, we primarily assessed whether age or question type influenced the substance of children's reports. As such, and unless otherwise noted, we conducted a series of parallel ANOVAs with both age groups (4-5-year-olds versus 6-7-year-olds) and question type (yes/no versus wh-) entered as between-subjects factors, with dependent variables representing the proportion of children's responses across various measures (whether responses: denoted touching, were accurate, referenced body mechanics, and referenced valence).

First, we were interested in assessing whether question type, or age, would affect whether children's responses reported touching. To assess this, we conducted an analysis of variance (ANOVA) on the proportion of children's responses that reported touching, with question type (yes/no versus wh-) and age (4-5-year-olds versus 6-7-year-olds) entered as between-subjects factors. There was a main effect for question type, F (1, 94) = 14.74, p = <.001,  $\eta \rho_2 = 0.14$ , reflecting that, proportionally, children in the whcondition were more likely to report touch (M = 0.55, SD = 0.03) than children in the yes/no condition (M = 0.43, SD = 0.02). There were no other effects.

To assess whether question type or age affected whether children's responses were accurate, we conducted a second ANOVA on the proportion of children's accurate responses, with question type and age entered again as between-subjects factors. However, children's reports of touch were largely correct (M = 0.80, SD = 0.15), and there were no effects of age or question type.

Next, we assessed whether variables of interest (age and question type) influenced whether children described body mechanics in their reports of touch. As such, we conducted an ANOVA on the proportion of responses that referenced body mechanics. There was a main effect of question type on children's descriptions of body mechanics, F (1, 94) = 129.52, p = <.001,  $\eta \rho 2 = 0.58$ ; children in the wh- condition provided more descriptions of body mechanics (M = 0.34, SD = 0.01) than children in the yes/no condition (M = 0.01, SD = 0.004). There were no other effects.

We also assessed whether age or question type influenced children's proportional rates of making distinctions in agency. We conducted an ANOVA on the proportion of children's responses that expressed distinctions in agency. There was a main effect of question type for distinctions in agency, F(1, 94) = 130.04, p = <.001,  $\eta p = 0.59$ ; children in the wh- condition expressed distinctions in agency more often (M = 0.51, SD = 0.02) than children in the yes/no condition (M = 0.14, SD = 0.02). There were no other effects.

We further assessed whether age or question type influenced children's rates of providing valenced descriptions. We conducted an ANOVA on the proportion of children's responses that denoted valence. There was a main effect of question type for valenced descriptions of touch, F(1, 94) = 110.42, p = <.001,  $\eta \rho 2 = 0.55$ ; children in the wh- condition provided valenced reports of touching more often (M = 0.40, SD = 0.03) than children in the yes/no condition (M = 0.01, SD = 0.03). There were no other effects.

Finally, we were interested in whether children's descriptions of touch would vary by the kind of touching depicted (e.g. would they perceive non-manual touch or touch with an object to be different from touching with a hand?). To assess this, we conducted a repeated-measures ANOVA on the proportion of children's responses that reported touch, with age and question type entered as between-subjects factors, and the kind of touching depicted entered as a repeated-measure (i.e., condition: manual touch, nonmanual touch, touch with object, no touching depicted). Pairwise comparisons, using bonferroni corrections, were utilized to assess post hoc differences. There was a main effect of question type, F(3, 89) = 14.74, p < .001,  $\eta \rho_2 = 0.14$ , and kind of touch depicted, F(3, 89) = 386.86, p < .001,  $\eta \rho_2 = 0.93$ . These main effects were subsumed by a two-way interaction of question type by touch type, F(3, 89) = 26.60, p < .001,  $\eta \rho_2 =$ 0.47. The two-way interaction of question type by touch condition is shown in Figure 1.



As already interpreted above, children were more likely to report touching in the wh- compared to the yes/no condition. Regarding touch type, children proportionally reported touch more often in response to the manual touch condition (M = .72, SD = .021), compared to touch with object condition (M = .50, SD = .03), t (94) = 8.55, p < .001, 95% CI [.17, .28], and no touch condition (M = .05, SD = .01), t (94) = 25.40, p < .001, 95% CI [.62, .77]. In addition, children proportionally reported touch more often in

response to the non-manual touch condition (M = .69, SD = .03), compared to touch with object condition, t (94) = 6.28, p < .001, 95% CI [.13, .25] and no touch condition, t (94) = 23.65, p < .001, 95% CI [.59, .69]. Finally, children proportionally reported touch more often in response to the touch with object condition, compared to no touch condition, t (94) = 13.21, p < .001, 95% CI [.38, .52]. The difference between the manual touch condition and non-manual touch condition on children's proportional reports of touch was not significant.

Yet, the rates of reporting touch for each touch type varied by question type. Children in the wh- condition were more likely to report touching in response to the manual touch condition (M = .85, SD = .0), t (93) = 6.00, p < .001, 95% CI [.17, .33], non-manual touch condition (M = .74, SD = .25), t (93) = 2.12, p = .036, 95% CI [.01, .20], and touch with an object condition (M = .62, SD = .30), t (93) = 3.80, p < .001, 95% CI [.12, .37], compared to children in the yes/no condition ( $M_{manual touch} = .59$ ,  $SD_{manual touch} = .21$ ;  $M_{non-manual touch} = .64$ ,  $SD_{non-manual touch} = .23$ ;  $M_{object touch} = .38$ ,  $SD_{object touch} = .31$ ). Yet, regarding pictures that depicted no touching, children in the wh- condition were less likely, proportionally, to report touching (M = .01, SD = .03), t (93) = -5.25, p < .001, 95% CI [-.13, -.06], than children in the yes/no condition (M = .10, SD = .12).

## GENERAL DISCUSSION

The present investigation examined children's sources of difficulty when describing abusive touch, how children define touch, and begins to assess the most productive question type for eliciting reports of touch. Overall, our findings reveal that when children struggle to answer questions about touch, it is sometimes due to their definition of touch and the distinctions they apply to their definition. In Study 1, we found that children failed to report touch when they did not understand what form of touch the attorney was asking about (i.e., manual, abusive, penetrative, etc.). In Study 2, we found that children reported touch in response to the manual and non-manual touch conditions frequently, and at similar rates. Less often, children reported touch in response to the touch with an object condition, but still largely distinguished the touch with object condition from the no touch condition. This finding is important in the context of sexual abuse, as objects can be used to penetrate the child. The findings of Study 2 are inconsistent with the findings of Hashima and colleagues (1988), who found that preschool children reported touch most often when it was done with the hand and a washcloth held in the hand, and less often when it was done with the mouth.

There are some potential explanations as to why the findings of the current investigation were not consistent with those of Hashima and colleagues (1988). First, Hashima and colleagues (1988) tested children's definition of touch in 3- and 4-year-old children, while the current study included a sample of 4- to 7-year-olds. Thus, it is possible that children in early life consider manual and non-manual touch to be mutually exclusive but stop making this distinction at around 4 years old. Second, touch with a washcloth held in the hand and touch with an object held in the hand appear to be distinct concepts for children; whereas touch done with a washcloth may be conceptually similar to hand-to-body contact, touch done with an object may be conceptually distinct. It could be that children are concerned with proximity, as touching done with a washcloth requires the touch actor's hand to be close to the touch recipient's body, but touching done with an object (in the present investigation: a stick, fork, feather, teddy bear, pencil, and umbrella) allows for distance between the touch actor and recipient.

The findings of the current investigation suggest that, while children largely define body contact as touch, their definition of touch exists on a scale, with certain forms of touching (i.e., manual and non-manual) more closely representative of their concept of "touch" than other forms of touching (i.e., touch done with an object). Still, children are able to report touch even if the touch in question is not entirely representative of their concept of "touch." Contrastingly, even when attorneys query about manual or non-manual touch, children may fail to report touch when they believe a different form of touch is being queried about (recall examples from Study 1, Q: "Was there ever a time that your Bad Dad touched your colita with a different part of his body?" A: "No." Q: "Did your Bad Dad ever touch your colita with this hand?" A: "Yes;" Arizona v. Morales Rosales, 2007; Q: "Did he ever touch you with -- your middle part with anything besides his hand?" A: "No." Q: "Did he ever touch you with his -- his mouth?" A: "Yes;" Arizona v. Simmons, 2007). Taken together, these findings reveal that the key to eliciting accurate and productive reports of touching lies in how attorneys ask questions about touch.

We found that open-ended wh- questions, which are recommended to attorneys (Lamb et al., 2018; Lyon 2005), were the most productive question form when eliciting reports of touching from children. In response to wh- questions, children in Study 2 generally reported touch more often, reported touch in response to the touch with an object condition more often, and provided more informative responses that included descriptions of body mechanics. In response to wh- questions, children's answers were more informative because they had the opportunity to explicitly or implicitly report touch in their own words (i.e., A: "The boy is putting an umbrella on the girl;" male, 5 years

old). Additionally, through asking open-ended wh- questions and allowing children to describe the touch in their own words, children had the opportunity to provide some information about how they were defining touch and where they were making distinctions. Specifically, we observed that, in response to wh- questions, children often made distinctions in agency and provided valenced descriptions of touch. This is consistent with the observations of Hashima and colleagues (1988), who speculated that children may have a valenced understanding of touch.

It should be noted, however, that wh- questions that are vague can still fail to elicit important details from children (Lamb et al., 2018; Malloy et al., 2015; Saywitz, 1987). For example, in Study 1 we observed that when children and attorneys appeared to be operating under different definitions of touch, the miscommunication was exacerbated when the attorney used vague language. Furthermore, the wh- question asked in Study 2 was rather vague (i.e., "What's happening in this picture?") and, consistent with the findings of Poole and Dickson (2011), in response to the wh- question children at times gave responses that were off-topic or under informative (i.e., "It looks like it's going to rain" in response to a vignette of a boy touching a girl's stomach with an umbrella; female, 4 years old). Thus, although open-ended wh- questions were found to be the most productive, all wh- questions are not equally productive (Andrews et al., 2016). Rather, children would likely benefit from specific, wh- questions with additional cues and anchoring (i.e., "What happened when he touched you with his mouth?").

It should be further emphasized that language issues are not children's only source of difficulty when reporting touch. Rather, as stated previously children often experience cognitive issues when recalling the complex sequence of actions involved in an abusive touch (Bruck & Landau, 2009; Poole & Dickinson, 2011), particularly following repeated interviews (La Rooy et al., 2009). Furthermore, children may experience motivational issues, such as embarrassment or the desire to protect loved ones if the perpetrator is a family member, and for this reason may fail to proffer important details unless repeatedly and explicitly encouraged to do so (Cossar, Brandon, Bailey, Belderson, & Biggart, 2013; Hershkowitz, Orbach, Lamb, Sternberg, & Horowitz, 2006; Saywitz et al., 1991).

Regardless of the source of difficulty, however, children's difficulty can likely be ameliorated through asking specific wh- questions. For example, to help children who are not motivated to describe the abuse incident, attorneys can ask specific questions, and break down what occurred piece by piece, in order to elicit full accounts of what happened. Asking more specific questions about what occurred, such as "where were his hands" and "where were your feet," requests specific information and does not require the child to spontaneously provide all important details, as open-ended invitations do (Lamb et al., 2018). Furthermore, asking specific wh- questions that have additional anchoring (i.e., Q: "I want to talk about that time he touched you after your sister's birthday. What happened when he touched you?) can help cue the child's memory.

Finally, contrary to our expectations we did not observe significant age effects in Study 2. Due to changes in cognitive and language development, we anticipated that older children would be more descriptive when answering questions about touching, and specifically, we hypothesized that valenced descriptions of touching would increase with age. Although 6- and 7-year-olds did provide descriptions of body mechanics (in response to 10% of all questions) and express valence (8%), more often than 4- and 5year-olds (8%; 6%; respectively), these differences were not significant. It is possible that through using a larger age range and including even older children, age would have a stronger, and perhaps significant, effect on descriptions of body mechanics and expressions of valence, particularly given the low base rate of children describing both mechanics and valence.

# LIMITATIONS AND FUTURE DIRECTIONS

A clear limitation of Study 1 is that the findings were drawn from only one jurisdiction. Due to differences in training, guidelines, and restrictions, it is possible that questioning style varies across jurisdictions. Thus, it is unclear whether the findings of Study 1 are generalizable, and future research in other jurisdictions is needed to assess generalizability.

For Study 2, as stated above one limitation of was the relatively small age range. Although this study did expand the age range from Hashima and colleagues' (1988) study (whose sample included 3- and 4-year-olds), it is possible a significant effect of age may have been detected if the study included a 4- to 9-year-old age range. Future research should explore how older children describe touch.

Additionally, the coding of the proportion variables used for the analyses in Study 2 were admittedly imperfect. The wh- question condition in Study 2 consisted of only a single question per vignette (i.e., "What's happening in this picture?"), while the yes/no question condition consisted of 3 questions per vignette (i.e., "Is the boy touching the girl?" "Is the girl touching the boy?" "Are the girl and the boy touching?"). We made this decision so we could examine distinctions in agency while asking children yes/no questions. However, due to this design children had three more opportunities in the

yes/no condition to denote touch, describe body mechanics, and express valence. We attempted to correct for this by creating outcome variables that assessed children's responses proportionally with the number of questions each child answered, however, it is likely that this solution yielded an imperfect estimate.

Furthermore, our laboratory design in Study 2 was conducted at a local children's museum, an environment that is not similar to the courtroom environment. No child took longer than 5 minutes to complete the study and answered a maximum of 72 questions, a substantially shorter length than most trial testimonies. In investigations of abuse, children also experience significant delays between the event, initially disclosing, and then testifying; all which create additional challenges for both children's ability and willingness to accurately and completely describe what occurred (Andrews & Lamb, 2014; McElvaney, 2015). Additionally, the research assistant prompted each child at the beginning of the study with "I want to know what kids think about the word touch" and then proceeded to ask the child the same questions about a single topic. Contrastingly, children who are testifying in court have to answer different question forms about various topics. Future research can address this by creating a laboratory setting that more closely resembles children's experience while testifying, including asking more questions, asking questions about different topics in addition to questions about touching, and asking various question types (i.e., open-ended, close-ended, suggestive).

In addition, the vignettes presented to each child did not capture the dynamic nature of abusive touch. The touches depicted in the Study 2 vignettes were static, and the forms of touching were familiar to children (i.e., high-fives, hugging, kicking). Thus, it is likely that providing reports of touch was easier for children in Study 2 than it was for children in Study 1. However, due to our consistent findings across Study 1 and Study 2, we feel assured that the environmental discrepancies did not largely compromise the accuracy of our laboratory study. Future research might address this through designing laboratory studies that more closely resemble the nature of testifying to abusive touch. For example, touch vignettes might include videos of a dynamic sequence of actions within which touching occurs, and research assistants might ask children about the touching after a delay. This design can incorporate an assessment of cognitive difficulties children may experience when recalling and describing touch.

Finally, future research is recommended to determine the best type of whquestion for eliciting reports of touch from children. First, research should directly test how children respond to vague open-ended questions compared to specific open-ended questions. If it is determined that specific open-ended questions are more productive than vague open-ended questions when eliciting reports of touch, follow-up studies should examine what specific information children need. For example, studies might assess whether it is important to specify touch actor and recipient (i.e., "What is the boy doing to the girl?"), the topic of interest (i.e., "Tell me about the touching in this picture. What's happening?"), or ask specific, pointed wh- questions (i.e., "Where are the boy's hands on the girl's body?"). An increased understanding of how best to formulate openended questions will allow for more helpful and specific guidelines for attorneys.

## CONCLUSION

We found that attorneys commonly ask children about touching, and misunderstandings can arise during testimony due to the attorney and child operating under different definitions of touch, children's language development, and the nature of courtroom questioning. We further found that children's definition of touch exists on a scale, and through asking productive questions, attorneys can elicit reports of touch even when they and the child have incompatible definitions of touch. Body contact (i.e., manual and non-manual touch) is most consistent with 4- to 7-year-old children's definition of touch. This has direct implications for the current body of knowledge on children's language development.

There are also direct implications for attorneys. First, attorneys may wish to include additional cues when asking children about touch done with an object. Second, questions about touch should use specific language and clearly convey what information the attorney is requesting. Additionally, through asking open-ended questions, attorneys can give children the chance to describe the touch in their own words. Within these descriptions, children may convey information about how they are defining touch and where they are making distinctions, and attorneys can determine if a clarification must be made. Though more research is needed to determine precisely the best way to elicit reports of touch from children, the current investigation hopes to aid in the progression towards that goal.

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# APPENDIX A

# TOUCH MISUNDERSTANDINGS IN CHILDREN'S TESTIMONIES

Descriptor	Question and Answer Sequence	Attorney	Language Issue	If yes, Description
7-year-old female	Q: Going back to when you were six years old, do you remember a time when a man touched you on your private area? A: No.	Prosecutor		
6-year-old female	Q: Was there ever a time that he touched you somewhere that you didn't like? A: No.	Prosecutor		
11-year- old female	<ul><li>Q: Was hewas he rubbing it or was he poking at it or something else? Can you kind of describe what he was doing with his hand?</li><li>A: No.</li><li>Q:And what did he do with his fingers?</li><li>A: He started rubbing me.</li></ul>	Prosecutor	Х	child makes distinction of touch with the hand versus touch with the finger, attorney does not
11-year- old female	<ul><li>Q: Would he use his hands?</li><li>A: Yes ma'am.</li><li>Q: What would he do with his hands?</li><li>A: Nothing, he would just look at it. He didn't do anything else.</li></ul>	Prosecutor		
12-year- old female	<ul><li>Q: Did anyone else touch you?</li><li>A: No.</li><li>Q: Did [Sister] ever touch you?</li><li>A: Yes.</li></ul>	Defense		
6-year-old female	Q: Was there ever a time that your Bad Dad touched your colita with a different part of his body? A: No. Q: Did your Bad Dad ever touch your colita with this hand? A: Yes.	Prosecutor	Х	child did not include touch with the hand in their concept of touching
12-year- old female	<ul> <li>Q: Okay. And did something else happen with your vagina that day when you were on the floor –</li> <li>A: No.</li> <li>Q: When he touched your vagina?</li> <li>A: Well, no, not really.</li> <li>Q: Okay. You had said something to the detective about his finger, you remember that?</li> <li>A: Yes, his fingers were in my vagina.</li> </ul>	Prosecutor	Х	child included penetrative touch in her concept of touching, attorney did not

11-year- old female	<ul><li>Q: Okay. And as he was touching you, did anything else happen with his hand.</li><li>A: No.</li><li>Q: What about his fingers?</li><li>A: He put them inside of me.</li></ul>	Prosecutor	Х	child made distinction of touch with the hand versus touch with the finger, attorney did not
11-year- old female	Q: Okay. Now do you remember talking to [interviewer] you also talked about other things that happened to you. Did he ever touch you with your middle part with anything besides his hand? A: No. Q: Did he ever touch you with hishis mouth? A: Yes.	Prosecutor	х	child did not include touch with the mouth in their concept of touching
8-year-old female	<ul> <li>Q: When there was touching over the clothes, was that something that you didn't feel, but felt uncomfortable with?</li> <li>A: I felt uncomfortable with it.</li> <li>Q: Okay. You felt uncomfortable, but you didn't actually feel the touching, right?</li> <li>A: Right.</li> </ul>	Defense		
7-year-old female	Q: Was your memory let's ask it a different way. When your father was watching you, and we talked about private parts, did anything ever happen with your private parts and your father? A: I don't remember.	Prosecutor		
12-year- old male	<ul> <li>Q: When he touched you on the place that you use to go pee, did he touch you over the clothes, under the clothes or something else?</li> <li>A: Over.</li> <li>Q:Yes? You just told us that you were touched over the clothes. I want to make sure we are clear. Was it over or under the clothes?</li> <li>A: Under.</li> </ul>	Prosecutor		
12-year- old female	Q: Okay. When you say he touched you, where did he touch you first? A: Vagina, breasts.	Prosecutor		

6-year-old female	Q: Okay. When David touched you on your cookie, did he touch you on top of your clothes, underneath your clothes, or some other way? A: Some other way. Q:So when he touched you on your cookie was he touching you right on your skin or something else? A: Right on my skin.	Prosecutor		
9-year-old male	<ul> <li>Q: Would anybody touch each other when you played that game?</li> <li>A: Just sometimes touch like right here (gesturing to shoulder).</li> <li>Q: So nobody touched your private parts when you played that game or did they?</li> <li>A: Sometimes when we played with my older sisters they did.</li> </ul>	Prosecutor	Х	child included innocuous touch in their concept of touching, whereas attorney seemed to be asking only about abusive touch
11-year- old female	<ul> <li>Q: And when he touched your butt with his hand, did he touch your butt on the inside or the outside or something else?</li> <li>A: He touched it both ways.</li> <li>Q: Both ways. Okay. And was it with his hand, his whole hand or a finger or something else?</li> <li>A: Sometimes he would touch it with his whole hand, his finger, and sometimes with something else.</li> </ul>	Prosecutor		
9-year-old female	Q: Okay. So my question was then if you were holding onto his hands how could he be touching you where you go poop? A: Well, the other like the other one I was holding. I was holding on. I was holding on. I wasn't holding on nothing. My hands were down.	Prosecutor		

10-year- old female	<ul> <li>Q: Well, did he hold you or not?</li> <li>A: Yes.</li> <li>Q:Was it before or after he supposedly touched you?</li> <li>A: During the same time he touched me.</li> <li>Q:Did he immediately touch your private?</li> <li>A: Yes.</li> <li>Q: He didn't touch you anywhere else but your private?</li> <li>A: Yes.</li> <li>Q:And, now, would this be, at the same time, was he somehow holding your arm or – A: Yes.</li> </ul>	Defense	х	child did not make distinction between "holding" (innocuous touch) and "touching" (abusive touch)
11-year- old female	<ul> <li>Q: And that first time did anything happen with his wiener?</li> <li>A: No.</li> <li>Q:What, if anything, did he do with his wiener that time?</li> <li>A: He just laid on me and he started touching he also touched my snooky, but when he did, he like, he laid on it with his wiener and all that. He barely touched it.</li> </ul>	Prosecutor	x	child seemed to make distinction between penetrative and non- penetrative touch
9-year-old male	<ul> <li>Q: Now, we've talked about [Perpetrator] and we've talked about your twoyour two older sisters, did anyone else touch you while you were at that house?</li> <li>A: No.</li> <li>Q: Did [Sister]?</li> <li>A: Sometimes, yeah.</li> <li>Q: And when we're talking about touching you, we're talking about bad touching, right?</li> <li>A: Yes.</li> <li>Q: Did she ever touch you in a bad way?</li> <li>A: I don't remember. But she did touch us.</li> </ul>	Defense	х	child included innocuous touch in their concept of touching, whereas attorney seemed to be asking only about abusive touch
11-year- old female	<ul> <li>Q: Did he ever touch you at all?</li> <li>A: He was trying to because I could feel his arms were trying to hug me, or something.</li> <li>Q: Right. But he was never successful in touching you?</li> <li>A: I'm not exactly sure.</li> <li>Q:Okay. Am I understanding correctly that [Sister] said he did touch her, but he never touched you?</li> <li>A: Right.</li> </ul>	Prosecutor		Child has a hard time distinguishing between attempted and completed touch