Controlling for Confirmation Bias in Child Sexual Abuse Interviews

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Confirmation bias is one of the most important sources of error in clinical assessment and clinical judgment. There has been little scholarship on the role of confirmation bias in forensic interviews with children who may have been abused sexually. This article reviews relevant research and explores the possible role of confirmation bias in forensic interviews. Confirmation bias may come into play because these interviews usually are conducted under the auspices of one side of the adversarial judicial system, the prosecution. In addition, the existing forensic interview protocols have paid little explicit attention to confirmation bias, instead focusing on decreasing the likelihood of suggestibility within the interview (although rarely are there efforts to detect suggestibility before the forensic interview). Finally, this article offers eight practical suggestions regarding how to further mitigate confirmation bias in these important forensic interviews, including increased training in how confirmation bias can affect forensic interviews, increased psychometric investigation of current interview protocols (particularly their sensitivity and specificity), and expanding forensic interview protocols and training to address confirmation bias explicitly.

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Confirmation bias is seen as a pervasive source of error in rational belief formation. Confirmation bias can be defined as selectively seeking, focusing on, and attaching greater weight to evidence that supports rather than refutes one's own beliefs.[1] This article provides a brief review of the role of confirmation bias in clinical and forensic psychology and psychiatry and then examines its possible role in forensic interviewing with children who may have been abused sexually. In addition, it provides suggestions for minimizing the influence of confirmation bias in forensic interviewing with children.

Philosophers of science such as Karl Popper have argued that confirmation bias is the key source of error that a properly formulated scientific method overcomes.[1] Cognitive psychologists such as Kahneman and Tversky have suggested it is a fundamental heuristic error underlying the misjudgments of individuals in a variety of contexts.[2] Garb,[3] Lillienfeld,[4] and Haynes *et al.*,[5] among others,[6,7] have argued that confirmation bias is a pernicious source of error in clinical assessment and clinical judgment, and studies of clinicians have found that clinicians tend to weigh more heavily information that confirms prior beliefs regarding psychopathology. Related to confirmation bias is the phenomenon of premature closure, where clinicians reach conclusions on the basis of too little information.[1] For example, Gauron and Dickinson reported that psychiatrists who were asked to observe a videotape of a clinical interview frequently formed diagnostic impressions within 30 to 60 seconds.[8] Premature closure may produce confirmation bias by halting the search for additional data that would be inconsistent with these premature conclusions.

Clinical psychology and psychiatry are not the only disciplines in which confirmation bias has been demonstrated. The field of forensics also has been plagued by this heuristic, and others have called for addressing these possible heuristic errors in child forensic interviews many years ago.[9,10] Kassin *et al.*[11] have suggested the term "forensic confirmation bias" when this heuristic error is found in forensic matters. Studies, particularly research regarding wrongful convictions and false confessions, have shown that both lay persons (e.g., undergraduate participants) as well as various professionals involved in criminal

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investigations (e.g., police officers, lawyers, judges) are predisposed to seeking and attending to incriminating evidence while ignoring exculpatory evidence.[12–15] Specifically, Kukucka *et al.*[16] surveyed 403 forensic examiners from 21 countries and found that forensic examiners regarded their own judgments as "nearly infallible" and most examiners believed that they are immune to bias or could reduce cognitive bias through an exercise of mere willpower.

Rassin and colleagues[17] demonstrated that investigators are prone to seek evidence of the suspect's guilt, thus "confirming" their prior beliefs. Ask and Granhag[18] found that inconsistent evidence that required more interpretation (e.g., witness or photographic evidence) was considered less reliable than consistent evidence that required less interpretation (e.g., DNA evidence). Ask and Granhag[18] also evaluated strong affective reactions such as anger regarding child sexual abuse and found that experiencing anger was more likely to make criminal investigators utilize superficial cognitive processing and base their judgments more heavily on expectations rather than on deeper processing. Hill *et al.*[14] evaluated the effect of expectations of guilt on interviewer questioning style, confessions, denial rates, and suspect's verbal behavior; the authors reported that when participants expected the suspects to be guilty, they were more likely to produce guilt-presumptive questions, and suspects who answered guilt-presumptive questions were perceived by the participants to be more guilty than those who responded to neutral ones, thus leading to a confirmatory cycle.

Confirmation bias has been studied along with other biases in Dror and Murrie's Hierarchy of Expert Performance.[19] This taxonomy of possible biases addresses both what others call reliability (i.e., consistency) and biasability, both within and between experts. In addition, this taxonomy examines these in the context of the forensic experts' observations and conclusions. The authors stated that one form of bias, which may be construed as a form of confirmation bias, is adversarial allegiance, which is a bias of forensic experts reaching conclusions that favor the side that hired them. In child abuse interviews, the forensic interviewers generally are hired by the state and work for the prosecution. Dror and Murrie[19] call for more studies on how to combat these biases as well as studies that examine a variety of reliabilities (e.g., inter-rater and intra-rater) of both observations and conclusions. They point out that currently much of these important data are missing.[19]

Concerns over types of error in forensic interviews of children who may have been sexually abused have evolved over time.[20] Prior to the 1980s, there was likely too little concern about even the possibility of children's being abused sexually because few at that time had an understanding of its high incidence and thus too few victims were interviewed about potential abuse.[20] Therefore, the problem at that time was mainly one of false negatives; that is, children who were abused sexually were not being identified. What followed then was a movement to correct this neglect (e.g., the "believe the children" movement), and interviewers then attempted to interview more children in an attempt to decrease undetected abuse.[20] At times these interviews occurred with little pretext (e.g., the child was simply "acting differently"), and at times interviewers asked leading questions and repeated direct questions about abuse scenarios because they believed that it was very difficult for the child to disclose abuse.[21] This approach resulted in problematic cases such as the well-known McMartin Day Care trial in Manhattan Beach, California, in the mid-1980s.[22] This trial eventually involved allegations of more than 350 children involving seven daycare workers and was the longest and most expensive trial in California history.[22] Eventually, the problematic forensic interviewing techniques were identified and all daycare workers were acquitted of the charges, but not before some had spent years in prison.[22] Garvin and colleagues[21] found in subsequent empirical studies that many of the interview techniques used were suggestive and produced false reports from the children. These included the use of repeated questioning, social conformity press (e.g., "Other children reported abuse, how about you?"), as well as other problematic interview techniques.

The next historical wave was reasonably concerned with eliminating these suggestive interview techniques within the forensic interview, and much progress has been made.[23] Suggestive practices are a pathway in which confirmation biases can be enacted; specifically, the interviewer believes a certain event has occurred (e.g., the child has been abused) and then, through suggestive questioning (e.g., leading questions or repeated questions when child initially denies abuse), the answers to suggestive questions produce "evidence" that is consistent with the interviewer's prior conception.

A variety of forensic interview protocols, such as the National Institute of Child Health and Human Development Investigative Interview Protocol,[23,24] the RATAC Forensic Protocol,[25] and the Step-wise Interview,[26] were developed and evaluated partially psychometrically (see Cirlugea and O'Donohue[27] for a description of these as well as a review of missing and problematic psychometrics regarding these interviews). It now is considered best practice to utilize one of these protocols.[28] In addition, practices such as having the child play with anatomically correct dolls was seen as problematic because too many interviewers were interpreting doll play falsely as indicative of abuse, a form of confirmation bias.[16]

Relying solely on these strategies is insufficient, however, for three reasons. First, there is much missing and problematic psychometric information regarding these forensic interview protocols. For example, little is known regarding their error rates, which is relevant to the Daubert standard of admissibility, particularly their rates of false positives (i.e., specificity) or false negatives (i.e., sensitivity). Everson and Sandoval[29] found that the disagreements of evaluators of sexual abuse allegation could be explained by individual differences in three attitudes related to forensic decision-making: emphasis on sensitivity, emphasis on specificity, and skepticism toward child reports of abuse. The authors concluded that these attitudes operated as predispositions or confirmatory biases toward viewing child sexual abuse allegations as likely true or likely false, and all of these can be construed as varieties of confirmation bias.[29] Second, there are other sources of error, such as confirmation biases, that these forensic interview protocols control poorly. Finally, it is not clear the extent to which interviewers in the field are being faithful to these interview protocols as there are few fidelity checks conducted in actual practice. For example, Yi *et al.*[30] reported that Korean police officers claimed that they were following interview guidelines when they were not and maintained they were asking open-ended questions consistent with the guidelines, when they were not. Korkman and colleagues[31] investigated the quality of a sample of 43 forensic interviews conducted in Finland with alleged victims (aged 3–8 years) of child sexual abuse and found that forensic interviewers continued to rely on leading and suggestive questions even after the child had provided significant information. These findings suggest that the quality of forensic interviews in actual practice is a continuing concern. The relevance of this concern may not be appreciated fully. Korkman and colleagues[32] investigated the extent to which a sample of 104 Finnish judges' beliefs conformed to research findings. Although the researchers found that judges' estimates of the prevalence of sexual abuse corresponded to research findings, they also found that half of the judges estimated that professionals never used suggestive techniques when interviewing children, and that more than 40 percent of the judges thought suggestive methods can be useful when trying to get a child to tell about real events. In addition, Melinder *et al.*[33] found in a sample of police in a forensic interview training program that the personality dimensions of openness and neuroticism (i.e., the facets of anxiety and vulnerability) were associated independently with confirmation bias in that openness decreased vulnerability to confirmation bias while neuroticism increased vulnerability to confirmation bias. Despodova *et al.*[34] gave a sample of 130 defense attorneys information that pointed to the presence of confirmation bias in a forensic medical evaluation, yet the vast majority of attorneys failed to detect the presence of confirmation bias and thus subsequently failed to construct cross-examination questions to reveal this concern to jurors.

It is generally recognized that forensic interviewers should aspire to be neutral or objective. Fessinger and McAuliff[35] surveyed 784 child sexual abuse interviewers and reported that interviewers believed their own interviews were fairly neutral, although they also admitted that their interviews were "slightly" leading. In addition, the authors noted that interviewers were much more concerned about false denials (83%) than false allegations (11%). Finally, they observed that the more experience interviewers had, the more concerned they were about false allegations. We would argue that central to this reasonable aspiration is the proper handling of the sources of bias, including implicit biases such as confirmation bias, that are likely operative. To this end, some have argued that the interviewer should have no prior information about the child or the child's allegation and no information about what the child said to other adults (e.g., parents, teachers, or first responders). It is not clear at this time to what extent this recommendation is adopted in actual forensic practice; however, this recommendation also contains serious drawbacks, such as an inability to understand the consistency of what the child states in the interview as opposed to what the child has previously stated. Moreover, an interviewer blinded to this information

may still be influenced by confirmation bias (in believing that most children's allegations are true) or by adversarial allegiance. For these reasons, we remain unconvinced of the value of having blinded interviewers. Previous research, however, suggests that interviewers with no preinterview knowledge elicit more detailed and accurate accounts than their informed counterparts.[36]

One other preliminary matter ought to be addressed. It could be claimed that these forensic interviews of children ought not to be scrutinized psychometrically because these are simply "hearing what the child has to say." This is a view that both authors have encountered repeatedly in their practice when evaluating forensic interviews, and we both disagree with this view for the following reasons. First, it ignores the vast scientific literature of child suggestibility as well as the past record of problematic interviews resulting in false conclusions about child abuse status. Interviewing is a protracted, interpersonal process that involves a complex interplay of memory, information processing, interpersonal influence, and other psychological processes in a context of varying developmental levels. Second, this view ignores the fact that, even if the interview is construed as "just hearing what the child has to say," it is still a measurement task because the interviewer wants to detect accurately all of what the child has to say and can make errors in doing this. It is a basic principle of psychometrics that all measurement contains error (although certainly some measurement tasks contain more error than others), and the goal of psychometrics is to understand the kind and degree of error of any measurement task, even if the measurement task is "just hearing what the child has to say."[5] Finally, the view that, in principle, there ought to be little concern about the degree of accuracy of these interviews is problematic because it assumes that, no matter what the interviewer does, the interview invariably and inevitably will produce accurate information from the child. This view is implausible for a variety of reasons, but particularly because we know that children can contradict themselves across interviews, and, logically, contradictory statements cannot all be true.

Evaluating Interviewer Bias

One way in which a forensic interview can be evaluated is to ask, "Was the interviewer objective and unbiased?" This question has been asked too infrequently and may be a core reason why some cases have had such problematic outcomes. Interviewers generally work for one side in the adversarial legal system and, because each side has a vested interest, may intentionally or unintentionally attempt to please their employers. It is also important to note that this question is not accurately answered simply by asking the interviewer, as many individuals can believe sincerely they are not biased when in fact they are. It is unclear whether humans can detect their own personal biases. Ideally, an interviewer ought to have no allegiance to any side, neither the prosecution nor the defense. Rather, the interviewer ought to be committed fully to finding out the truth and what the child has to say, as well as what has influenced these statements. Not all interviewers in all situations may meet this standard, and the degree to which this standard of objectivity is met needs to be assessed in any individual case.

Studies have shown that biased interviewers increase the likelihood of children providing incorrect statements. Specifically, Quas and colleagues[37] examined developmental differences in the effects of repeated interviews and interviewer bias on children's memory and suggestibility. Children ages 3 to 5 years participated in an identical play event that consisted of playing in a room alone. These subjects were interviewed subsequently by either a biased or a control interviewer. During the interviews, biased interviewers provided false statements that suggested the child had interacted with a man in the playroom, whereas control interviewers did not provide these statements in their interview. Quas *et al.*[37] reported that the children interviewed by the biased interviewer responded with significantly more incorrect responses. Thus, interviewers employing confirmation bias may suggest incorrect information to children and thus elicit inaccurate statements from them, which may lead to children falsely reporting abuse, an outcome that may be in line with interviewers' biases.

Children involved in child sexual abuse investigations frequently are asked questions about an alleged event that took place months or even years prior to the interview. In an attempt to replicate this type of scenario, Bruck and colleagues[38] followed 5-year-old subjects who went to see a pediatrician for a checkup. During the visit, a male pediatrician gave each child a physical examination, an oral polio vaccine, and an inoculation, and a female research assistant talked to the child about a poster on the wall, read

the child a story, and gave the child some treats. Approximately one year later, the children were re-interviewed four times over a period of one month. During the first three interviews, some children were falsely reminded that the male pediatrician showed them the poster, gave them treats, and read them a story and that the female research assistant gave them the oral vaccine and inoculation. During the fourth and final interview, when asked to recall what happened during the original visit, children who were not given any misleading information gave highly accurate final reports. By contrast, misled children were very inaccurate; half of the children incorporated the misleading suggestions in their report (e.g., claimed that the female assistant inoculated them), and 38 percent of these children also included additional nonsuggested but inaccurate events in their reports. Therefore, forensic interviewers may provide children with inaccurate details in an effort to confirm their own beliefs and, as a result, elicit a greater amount of inaccurate statements from them.

Bruck *et al.*[39] conducted a study that illustrates how a biased interviewer may unintentionally influence children to provide false statements. Subjects were 120 preschool children, 90 of whom attended a birthday party with a visitor and 30 children who did not attend the party. Interviewers were informed that the children had participated in an activity with a visitor but not what the activity was. Each interviewer individually questioned four children to discover what the child had done with the visitor; the interviewer did not know that the first three children had been at the birthday party while the fourth had not. After questioning the first three children who had attended the party, interviewers wrongly assumed that the fourth child had also attended the party and then (unintentionally) engaged in biased questioning with the fourth child in an apparent attempt to confirm their faulty preconceptions that this child also attended the birthday party. In response to these suggestive interviews, 60 percent of children made false claims to have been at the party when they had not, and 85 percent of interviewers wrongly concluded that all four of the children they questioned had attended the party. Thus, even well-intentioned child interviewers can become biased based on their expectations associated with confirmation bias and then may use suggestive techniques to extract false statements from children in line with these biases; again, an example of confirmation bias.

When interviewers seek to confirm a certain belief, i.e., that abuse did occur and a certain individual perpetrated the abuse, the line of questioning then becomes designed to elicit confirmatory evidence. This approach includes not only what is asked of the child, but also how the child is questioned. Question types, including open-ended (e.g., "Tell me what happened") and closed-ended (e.g., yes or no questions, multiple choice, etc.) have been studied widely in the literature on child suggestibility. Research has shown overwhelmingly that open-ended questions yield more details with higher accuracy compared to closed-ended questions.[40–44] Despite this, interviewers have been shown to rely frequently on closed-ended questions.[45–47] Leading and misleading questions have also been researched extensively, and studies agree that these types of questions should be avoided due to high rates of eliciting inaccurate information.[48–53]

Another study by White and colleagues[54] illustrates how these problems can occur before the forensic interview even takes place. It is often the case that other professionals (e.g., police officers, therapists, etc.) have first contact with the child who may have been abused before the formal forensic interview takes place, perhaps to hear their initial allegation. In this study, two professionals, a teacher and social worker, were given a list of activities that had supposedly occurred during a play session in a group of preschoolers (ages 3–5 years), but half of the activities had not actually taken place. These professionals then questioned the children to learn what had happened during the play session. Data from the study indicated that interviewers repeatedly used suggestive questions to ask the children about the false activities. In response, these children falsely agreed that they had engaged in about 30 percent of these false activities, some of which involved bodily touch. Further, some children who initially denied that the false event occurred later changed their accounts and provided false details about it. This study shows how accounting for the possible confirmation biases of any adult who interviews the child can be critical and how biased professionals can produce false memories and statements from the child.

Another study by Poole & Lindsay[55] shows the importance of how confirmation bias in adults can influence children. The authors had preschool-aged children witness four science demonstrations in a university laboratory. Parents read true and false

stories about the demonstrations to their children, and all stories contained a fabricated end regarding a Mr. Science who wiped their hands and face with a cloth. Later, children told the experimenters that they had participated in demonstrations that they had not, and more than half of the subjects said that Mr. Science had wiped their mouths and many elaborated on their "yes" answers. When asked if Mr. Science had actually wiped their mouths or whether their mother just read the story, 71 percent of the children maintained that the event really happened.[55] This study was replicated using children from a wider age range (ages 3–8 years).[56] Findings were similar except that, when asked if Mr. Science wiped their mouths or if their mother just read the story, the older children tended to recant their claims and to report that their mother told them. In addition to parents, other sources of information (e.g., peers, media) may influence children's reports of events. Pynoos and Nader[57] conducted interviews with elementary schoolchildren of unknown ages at a school that had been attacked by a sniper and found that some children who were absent from school during the attack gave fabricated stories of having been present. Children had heard accounts of the attack from their parents, other children, or news reports and created stories to match.

Similarly, Principe and Ceci[58] investigated the effect of peer interactions and suggestive interviews on children's memory for an event. A total of 96 preschoolers participated in the experiment. One third of the preschoolers witnessed a staged archeological dig (Witness condition), another third were classmates of those that witnessed the dig (Classmate condition), and the last third neither witnessed nor were classmates with those in the Witness condition (Control condition). The children were questioned about the details of the event on three different occasions over a three-week period. Half of the children were questioned in a suggestive manner, and the other half were questioned in a neutral manner. The researchers found that children in the Classmate condition who were questioned suggestively claimed to witness the target activities, and these children's responses were comparable with those of the children in the Witness group. The investigators also sought to determine if the children who did not report the target activities in response to questions (open or specific) would change their response when confronted with peer-conformity questions. The children's rate of change was significantly higher in the Classmate condition than in the Control condition.

Thus, ascertaining potential biases of anyone who has questioned the child about the possible abuse is important in the forensic interview process. Duke and colleagues[59] recommend that the forensic interview with the child be expanded so that the individual or individuals who heard the child's initial allegation is interviewed as well to better understand if their questions could have been suggestive and thus biasing prior to the forensic interview. Most of the suggestibility research has been oriented to demonstrate false-positive statements of children (e.g., that they were touched or had some experience that they actually had not experienced). This trend is likely due to the fact that researchers have been attempting to understand the false or dubious reports of abuse that have occurred in high profile trials such as the McMartin Day Care trial. It would be useful to have more research conducted on false-positive scenarios.

Interview and Preinterview Errors

The absence of improper interview behavior (e.g., repeated questions, conformity press, suggestive questions) does not mean that the interview is accurate because it sets too low of a bar. This point is especially true given evidence of forensic examiners believing that they are invulnerable to cognitive bias.[16] This view expresses a necessary criterion of adequacy but not a sufficient criterion. The interview also needs to meet another general set of criteria.

The forensic interview must attempt to understand and resolve any problems in the key dimensions that may affect the allegation. Bernet[60] provided one of the first taxonomies of possible mechanisms by which a false statement may occur (Table 1), suggesting an interviewer consider these when attempting to understand the origin of an allegation.[60] More recently, O'Donohue and colleagues[61] suggested that a forensic interviewer of a child who may have been abused sexually must attempt to understand the following dimensions to better understand the allegation and to control for confirmation bias that may held by forensic interviewers employed by the prosecution:

> Outcry analysis: the general circumstances of the child's initial accusations
>
> Stake analysis: whether anyone who had significant contact with the child may have a hidden

Table 1. Bernet's Taxonomy of Mechanisms by Which False Statements may Occur

Mechanism	Definition
True allegation	Estimated around 90% of the time.
Parental misinterpretation and suggestion	The parent has taken an innocent remark or neutral piece of behavior, inflated it into something worse, and inadvertently induced the child to endorse his or her interpretation (p 904).
Misinterpreted physical condition	A parent who is vindictive or overly anxious or a mental health professional who is misinformed may jump to the conclusion that a child's injury or illness was caused by sexual abuse rather than accepting a more benign explanation (p 905).
Parental delusion	The parent is a severely disturbed, paranoid person. He or she has actively shared a distorted world view with the child, who now shares the same delusion (p 905).
Parental indoctrination	The parent fabricated the allegation and instructed the child in what to say (p 905).
Interviewer suggestion	Previous interviewers may have inadvertently contaminated the evidence by asking leading or suggestive questions (p 905).
Fantasy	The child may have confused fantasy and reality (p 905).
Delusion	Although rare, delusions about sexual activities may occur in older children and adolescents in the context of a psychotic illness (p 905).
Misinterpretation	A misinterpretation may also cause a false belief, but it is derived from something that actually happened in the first place (p 905).
Miscommunication	A false allegation of abuse may arise out of a simple verbal misunderstanding (p 906).
Confabulation	The concept of confabulation usually implies that the patient fabricates statements or stories in response to questions about events that the person did not actually recall (p 906).
Pseudologica phantastica	Called fantasy lying and pathological lying . . . defined as telling false stories without discernible or adequate motive and with such zeal that the subject may become convinced of the truth (p 906).

From Reference 60.

agenda relevant to a guilty or not guilty verdict toward the accused

Parental or Significant Other suggestion: whether a caregiver or parent has made leading statements or engaged in leading questioning with the child, thus allowing the child to develop a false memory

Sufficiency of details provided by the child: whether the child can describe in an age-appropriate manner events that occurred before, during, and after in a way that makes a coherent and understandable narrative

Inconsistencies analysis: logically, inconsistent statements cannot be both true, and the interviewer needs to attempt to understand why logically inconsistent statements were made and whether these contradictions can be resolved

Logistical detail analysis: whether the allegation contains logistical implausibilities; e.g., claims that the child was penetrated but did not experience pain would make the report logistically problematic

Fantastical details analysis: the presence or absence of fantastical details (i.e., details that cannot possibly be true) in the allegations should be examined, such as a witch was flying around the room

Personological analysis: whether the child has any psychiatric problems or history that may indicate an increased probability of either being able to participate competently in a forensic interview or of problems with truth telling

The basic model is that these dimensions of a sexual abuse allegation are central to understanding what the child is indeed saying or attempting to say. Children, for a variety of factors, may not be able to articulate clearly what happened, and the interviewer needs to be mindful and probe key dimensions of a sexual abuse allegation so that the interview provides as much clarity and as much relevant detail as possible. Moreover, problems with the child's statements need to be identified and explicated in an attempt to understand them; such problems should not be ignored, as doing so is not consistent with objectivity and the proper handling of any confirmation bias. The degree to which the interview actually addresses these dimensions and attempts to resolve any problems with these dimensions is a necessary part of any evaluation of the forensic interview.

Mitigating Confirmation Bias

First, there needs to be more explicit recognition that confirmation bias can indeed be a problem in forensic interviews with children who may have been abused sexually. It is fair to say that sometimes there

has been resistance to this in all areas of assessment, not just in forensic interviewing with children (see Popper,[1] for example). Evaluators often discount the possibility of error due to their overconfidence. A quality-improvement orientation in which the view is that, no matter how good you are now, the goal is to try to get even better, would be partly ameliorative in this situation (see Kassin *et al.*,[11] for example). In addition, more education on the omnipresence of confirmation bias would be useful.

Second, more psychometric research regarding rates of false positives and false negatives in forensic interviews with children who may have been abused sexually is needed urgently. The field does not know these important error rates and their relative size, yet these forensic interviews are key pieces of information used in critically important legal and clinical decisions. The lack of empirically established error rates is problematic because these interviews contain important statements of often-unwitnessed crimes.

Third, it is critical to expand existing forensic interview protocols to combat confirmation biases directly. Given that it is often a branch of the police or prosecutor's office that is conducting these interviews, the confirmation bias that needs to be overcome is bias associated with the interviewer believing that a certain individual did indeed abuse the child and abused the child according to certain details (e.g., where, when, how, how many times, etc.). The protocol that currently has the most psychometric information is the Investigative Interview Protocol from the National Institute of Child Health and Development, although additional field studies of its reliability and validity are needed.[23,24] The practice of forensic interviewers conducting informal unstructured interviews, where they simply ask questions that occur to them for whatever reason, is problematic.

Fourth, in the forensic interview, it is important that the interviewer explores rival plausible hypotheses and asks these questions of the child. For example, a rival plausible alternative hypothesis in some cases is that an adult's interaction with the child (e.g., a parent) created a false memory, and it is this false memory that is underlying the child's statements in the interview; this hypothesis is plausible only when an adult has spoken to the child about these matters. Questions then should be asked in the interview about the child's memory of these interactions (e.g., "Tell me everything you can remember about when you and your mom talked about this."). Benign information may be gained, such as "I just walked up and told my mother without her asking anything because I wanted it to stop." On the other hand, not so benign information may also be gained, such as "My teacher asked me 50 times and each time I said nothing happened, and she seemed very disappointed, so eventually I said yes." These questions ought not to take a long time and thus should not expand interview length significantly. Nonetheless, if the child discloses significant content or if increased interview length taxes the short attention span of a young child, forensic interviews may require a break or may need to be conducted on two different days. This possibility is an empirical matter than needs to be explored further in future research. In implementing this suggestion, three additional steps can be followed: all forensic interviews ought to be videotaped so that their quality can be evaluated subsequently; a team-based approach can be taken in which criticisms and concerns can be expressed freely, particularly the concern of whether confirmation bias was handled appropriately; and findings can be presented to colleagues before finalizing the forensic interviewing report. Again, particular scrutiny in these presentations can be placed on the question of confirmation bias.

Fifth, conclusions and any relevant qualifications regarding these from forensic interviews need to be stated more thoroughly and explicitly. An overall conclusion about abuse status needs to be made from the totality of evidence such as medical findings, other witness reports, and the statements from the alleged perpetrator. If an explicit statement were made regarding the logic of conclusions from the forensic interview, this would be an important step forward as rationality is centrally concerned with making and fairly evaluating arguments. Part of the argument ought to be an explicit statement about the quality of the interview as well as a fair and faithful statement regarding the child's statements. Current practice often hides the warts of the interview, such as the child's inconsistencies in core details of their allegation (e.g., the child in the interview said the abuse always occurred in the bedroom but said later in the interview it also occurred in a car); logistical details that do not make sense; or even fantastical details.[5,6] If confirmation biases are to be minimized, such inconsistencies need to be explicated, dealt with logically, and even weighed explicitly in the conclusions instead of ignored.

Sixth, a much more difficult structural change would be for all forensic interviewers to be more independent from any one side of the adversarial legal process. The rates of independence from both the prosecution and the defense are currently unknown, but it is possible that forensic interviewers can feel significant pressure in their jobs to find that abuse occurred and that certain individuals have committed it. Thus, it would seem more plausible to conclude that more pressures exist for finding incriminating evidence than for finding exculpatory evidence when these interviews are conducted by law enforcement. This hypothesis may explain in part why so little attention has been paid to the problem of false positives as well as to the lack of exploring plausible rival hypotheses in the field.

Seventh, it may also be useful to increase transparency, for example, for evaluators to state explicitly in any written report what interview protocols were used. Evaluators may also consider publishing their records of conclusions from their interviews or having this information available during testimony. These records would include the percentage of interviews in which they concluded that abuse occurred but it actually did not occur (or in which a determination could not be made); that the child was lying; and that the abuse was based on a false memory. No identifying information need be presented. In addition, individuals or evaluation centers can publish the forensic protocols they follow, evidence of fidelity to these protocols, and their psychometric properties. Such transparency can allow others to understand the range of conclusions that seem to be associated with a particular center. If these are pooled nationally, one can begin to see norms as well as define outliers.

Conclusion

These steps would go a long way to addressing confirmatory biases in the current practice of forensic interviewing of children who may have been abused sexually. Confirmation biases can be hard to recognize and perhaps even harder to admit, especially in a historical context in which sexual abuse was often under-recognized. The goal should be to avoid or at least minimize all types of error by categorizing correctly both abuse cases and non-abuse cases.

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