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INTERVIEWING PRESCHOOLERS

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FACILITATORS AND BARRIERS TO YOUNG CHILDREN'S LEGAL TESTIMONY

DEPARTMENT OF PSYCHOLOGY

UNIVERSITY OF GOTHENBURG

Interviewing preschoolers

Facilitators and barriers to young children's legal testimony

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To my family

Abstract

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Children's testimonies are often vital during criminal investigations of alleged maltreatment. The aim of this thesis was to improve our understanding of forensic interviews with preschool-aged children (aged 3 to 6 years). Study I consisted of a mixed-methods survey of 88 specialist child interviewers from the Swedish Police Authority. Preschoolers were described as particularly challenging to interview due to their limited verbal abilities, short attention spans, and insufficient memory. The practitioners described a wide variety of strategies that they use to modify their technique when questioning preschoolers, indicating a potential need for standardized guidelines for use with this age group. Study II examined preschoolers' disclosures of sexual abuse in 57 Swedish court cases containing strong corroborative evidence. Many young children could provide information about the abuse, but their first disclosure was often delayed. Reluctance was common during the forensic interviews. The court documents mentioned several barriers to disclosure, including requests for secrecy, internal feelings (e.g., shame, guilt, and self-blame), fear of upsetting the non-abusive caregiver, loyalty to the perpetrator, and language difficulties. Study III consisted of a laboratory experiment examining 53 preschoolers' secret-keeping for an unfamiliar adult. Only 18.9% disclosed the secret in response to a free-recall request. After more specific questions, the number of secret-tellers increased to 83%. No significant differences were observed as a function of manipulating the rapport-building strategy used during the initial phase of the interviews. In Study IV, we investigated the effects of the pre-substantive phase of two different child interviewing techniques (i.e. the NICHD protocol vs. the sequential interview model) on preschoolers' statements about a self-experienced (n = 84) and non-experienced (n = 45) event. Children in the NICHD condition exhibited slightly higher accuracy than did children in the SI model condition when describing a self-experienced event. Regardless of the interviewing technique, 31.1% of the children inaccurately assented to remembering a non-experienced event, and 15.6% gave

a longer false report. Study V examined the effects of the draw-and-talk technique on preschoolers' reports of self-experienced (n = 83) and non-experienced (n = 25) events. Draw-and-talk did not increase the number of details given about a self-experienced event. When suggestively asked to draw a non-experienced event, 61.9% of children complied and provided inaccurate details while drawing. Across Studies III–V, we observed a positive linear association between children's age (in months) and the quantity and accuracy of details. The current thesis highlights the importance of age-appropriate interviewing techniques when collecting testimony from preschool-aged witnesses. Taken together, the studies show that preschoolers can give accurate testimony when following research-based interviewing recommendations. However, a range of developmental, socio–emotional, and motivational factors can hinder or delay young children from disclosing sensitive information. Future research could benefit from addressing questions of how to elicit information from reluctant child witnesses. Considering that the task of interviewing preschoolers demands considerable knowledge and practical skills, police and prosecutors may consider implementing specialized training courses on forensic child interviewing involving preschoolers. Another possible facilitating factor would be to routinely consult with experts on preschoolers' cognitive and linguistic development in connection with the preliminary investigation. Following the Convention on the Rights of the Child (UNCRC, 1989, article 12), all children have the right to express their views in matters affecting their lives. Adaptations to the forensic interview technique must be made depending on the child's developmental status. As preschoolers testify through video-recorded forensic interviews, priority should be given to ensure that young children are given the prerequisites needed to tell their story to the police.

Keywords: Child testimony, preschooler, investigative interview, police, criminal investigation, child witness

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Swedish summary

Att utreda brott mot förskolebarn i åldern tre till sex år utgör en stor utmaning för polis och åklagare. Utredningar av detta slag präglas ofta av brist på teknisk stödbevisning och inte sällan är barnets utsaga helt avgörande för att polisen ska kunna identifiera eventuella brottsoffer och gärningspersoner. Därtill ställs det höga krav på tillförlitligheten i barnets utsaga för att åklagare skall kunna väcka åtal och föra ett ärende vidare i rättsprocessen. I januari 2020 blev Barnkonventionen lag i Sverige. I artikel 12 fastslås att alla barn har rätt att få uttrycka sin mening i frågor som rör deras liv samt att hänsyn skall tas till barnets ålder och mognad. Denna princip gäller vid både polisutredningar och eventuella domstolsförfaranden. Förskolebarn vittnar generellt inte vid huvudförhandlingar i svenska domstolar, istället får rättens aktörer ta del av barnets utsaga genom deras förinspelade polisförhör. Kvaliteten på polisens förhör har därför en avgörande roll för det unga barnets möjlighet att få sin mening hörd. Föreliggande avhandling syftade till att studera förskolebarns vittnesförmåga genom att undersöka barnförhörsledares erfarenheter av att förhöra barn i olika åldrar (Studie I), granska domar i mål om sexuella övergrepp mot förskolebarn (Studie II) och studera hur förskolebarns utsagor påverkas av olika förhörstekniker (Studie III-V).

I Studie I undersökte vi, genom en digital enkät, svenska barnförhörsledares upplevelser av förhör med barn i olika åldrar. Svaren från 88 barnförhörsledare analyserades genom kvantitativa och kvalitativa analysmetoder. Barnförhörsledarna beskrev att förhör med förskolebarn var särskilt utmanande på grund av yngre barns begränsade språk, minne, och koncentrationsförmåga. De beskrev att de under förhör med förskolebarn behövde arbeta under stor tidspress eftersom barnen tenderar att bli trötta snabbt. Barnförhörsledarna upplevde även svårigheter med att styra in samtalet på ämnet för polisutredningen utan att bli för ledande, samt att förskolebarn kan ha svårt att leva upp till Högsta domstolens tillförlitlighetskriterier på grund av deras begränsade kunskap och vittnesförmåga. I enkäten framkom också att barnförhörsledarna ändrade sin förhörsmetodik på flera olika sätt vid förhör med förskolebarn. Exempel på det var att förenkla sitt språk, prata långsammare, ta bort eller ändra delar av inledningen till

förhöret. Resultaten tyder på ett behov av mer strukturerade riktlinjer för hur ett förhör kan anpassas på ett evidensbaserat sätt när den hörde är ett barn i förskoleåldern.

Studie II bestod av en arkivstudie i vilken vi granskade 57 förskolebarns berättelser om sexuella övergrepp så som de beskrivits i domar där gärningspersonen blivit fälld och där ytterligare stödbevisning kunnat styrka att ett eller flera övergrepp med stor sannolikhet har skett. Genom att genomföra kvantitativa och kvalitativa analyser på materialet kunde vi utläsa att en majoritet av förskolebarnen berättade för någon om sin utsatthet, men att det mellan tiden för övergreppet och berättandet kunde dröja lång tid. För vissa barn kunde det ta flera år innan de berättade för första gången. Våra analyser visade också att de personer barnen vanligen anförtrodde sina berättelser till var deras mammor eller förskolepedagoger. Vi identifierade ett antal olika barriärer som kunde försvåra barnens berättande – bland annat att gärningsmännen ibland instruerade barnen att hålla övergreppet hemligt, en lojalitet till förövaren, negativa känslor som skam och skuld, samt språk och minnesbegränsningar. Vi identifierade även ett antal faktorer som kunde underlätta för barnen att berätta om övergrepp som de utsatts för – till exempel ansågs vissa tekniker kopplade till barnförhöret ibland kunna hjälpa förskolebarn att berätta – så som att höra barnet flera gånger, ställa direkta frågor och att identifiera samt besvara barnens farhågor kring situationen.

Studie III bestod av ett experiment som syftade till att studera förskolebarns avslöjanden av en hemlighet. Femtiotre förskolebarn i åldrarna två till sex år deltog i experimentet som inleddes med en sagostund då en vuxen forskningsassistent råkade ta sönder en leksak, varpå han sa till barnen att det kunde vara ”deras hemlighet”. Därefter intervjuades barnen om händelsen. Vid intervjuerna delades barnen slumpmässigt in i två olika betingelser. Antingen inleddes intervjun med att intervjuaren bad barnet berätta om personliga intressen eller så löste intervjuaren ett pussel tillsammans med barnet. Barnen fick därefter svara på ett antal frågor om händelsen med leksaken som gick sönder. Vi observerade inga signifikanta skillnader med hänsyn till de två inledande kontaktskapandeteknikerna. Resultaten visade dock att oavsett inledning, avslöjade endast 19 % av barnen hemligheten som svar på den öppna frågan ”berätta allting som hände”. Andelen förskolebarn som avslöjade hemligheten ökade till hela 83 % efter att intervjuaren ställt fler specifika frågor om händelsen. Äldre förskolebarn rapporterade

fler detaljer jämfört med yngre förskolebarn. Bland både de yngsta och de äldre barnen var den genomsnittliga korrekthetsgraden mycket hög (över 90% korrekta detaljer).

Studie IV bestod av två kontrollerade experiment där vi testade två olika förhörsmetoder som används i nordiska sammanhang: den sekventiella intervjumodellen som används i Norge och NICHD-protokollet som används i Sverige, Finland och på Island. I det första experimentet blev 84 förskolebarn i åldern tre till sex år intervjuade om en självupplevd händelse med två pirater som besökt barnen på deras förskola en vecka tidigare. Barnen uppvisade en hög genomsnittlig korrekthetsgrad oavsett förhörsmetod och vi fann ingen signifikant skillnad mellan de två förhörsmetoderna vad gäller antalet detaljer som barnen kunde återge. Det fanns dock en liten men statistiskt signifikant skillnad i korrekthet, där barnen som intervjuades med NICHD-protokollet var något mer korrekta jämfört med barnen som intervjuades med den sekventiella intervjumodellen. De äldre förskolebarnen gav fler detaljer och var mer korrekta jämfört med yngre förskolebarn. I det andra experimentet intervjuades 44 förskolebarn om en påhittad händelse antingen med den sekventiella intervjumodellen eller med NICHD-protokollet. Ungefär en tredjedel av barnen (31%) medgav felaktigt att de hade träffat en fiktiv person och 16 % gav en längre falsk utsaga om händelsen. Vi fann ingen skillnad i antalet falska utsagor mellan de olika förhörsmetoderna.

Studie V, som genomfördes i samband med Studie IV, syftade till att undersöka om förskolebarn kan vara behjälpta av att få rita samtidigt som de blir intervjuade. Förskolebarn i åldrarna tre till sex år blev ombedda att rita och berätta om en självupplevd eller en påhittad händelse. De barn som blev ombedda att rita en självupplevd händelse rapporterade ungefär lika många detaljer och gav lika korrekta utsagor som barnen som bara fick svara på frågor utan att rita. De äldre förskolebarnen var, jämfört med de yngre, förmögna att återge fler detaljer och uppvisade en högre korrekthetsgrad. Detta tyder på att ritandet inte har några negativa effekter på förskolebarns beskrivningar av självupplevda händelser. Bland de barn som blev intervjuade om en påhittad händelse, som de alltså inte varit med om, gick hela 62% av barnen med på att rita händelsen och berättade i samband med det flera falska detaljer. Detta fynd illustrerar att ritande kan vara ett riskabelt hjälpmedel i situationer där förskolebarn intervjuas med ledande frågor om en ogrundad händelse.

Sammantaget visar resultaten av denna avhandling att förskolebarn kan ge tillförlitliga utsagor från ungefär tre års ålders givet att de inte utsatts för suggestiva förhörsmetoder. Även om äldre förskolebarn generellt sett gav fler detaljer med en något högre korrekthetsgrad, visar avhandlingen att yngre barn i åldrarna tre till fyra år kunde ge tillförlitliga, om än knapphändiga, vittnesmål. Avhandlingen visar även att förskolebarns vittnesförmåga kan påverkas av en rad olika faktorer. Exempelvis begränsar deras kognitiva och verbala förmågor möjligheterna att ge långa och detaljerade utsagor. Förskolebarn kan inte heller förväntas ge tillförlitlig information om koncept som ligger utanför deras kunskapsnivå, så som exempelvis tidsuppskattningar. Vidare kan socioemotionella faktorer, som lojalitet till förövaren, instruktioner om att hålla information hemlig, samt känslor som skam och skuld, också påverka förskolebarns vilja och förmåga att berätta om övergrepp. Ett antal faktorer kopplade till polisförhöret kan stödja så väl som begränsa förskolebarns vittnesförmåga. En konkret åtgärd som kan göras för att stödja små barn är att anpassa förhörets längd efter deras begränsade koncentrationsförmåga. Studierna visade därtill på vissa risker kring hur förhörsledare strukturerar och styr in samtalet på utredningens kärna. Alltför diffusa formuleringar kan göra det svårt för förskolebarn att förstå vad de förväntas prata om. För ledande frågor kan, å andra sidan, minska tillförlitligheten i förskolebarns utsagor. Det blir därför viktigt att noggrant planera vilken information barnet ska få under förhöret samt att utreda alternativa förklaringar till brottsmisstanken.

Ett viktigt steg för framtida forskning är att vidareutveckla och utvärdera åldersanpassade förhörstekniker som passar de yngsta barnen. Hänsyn bör tas till de utmaningar som barnförhörsledare möter i sitt dagliga arbete. I linje med tidigare forskning visar resultaten från denna avhandling att förhör med förskolebarn ställer höga krav på barnförhörsledaren kunskap och praktiska färdigheter. Andra länder, däribland Finland och Norge, har därför infört särskilda system för att säkerställa att dessa förhör genomförs av specialiserad personal som arbetar med att förhöra förskolebarn och barn med intellektuella funktionsnedsättningar. För att stärka förskolebarns rättskydd bör Sverige ta efter våra nordiska grannländer genom satsningar i specialiserade träningsinsatser vad gäller förhör med förskolebarn som komplement till den ordinarie barnförhörsutbildningen. Fördjupad kunskap kan vara en viktig väg framåt för att

säkerställa att även de yngsta barnen ges möjlighet att uttrycka sin mening i frågor som rör deras liv i enlighet med Barnkonventionen.

List of publications

This thesis consists of a summary and the following five papers, which are referred to by their Roman numerals:

I. Magnusson, M., Ernberg, E., Landström, S., & Akehurst, L. (2020). Forensic interviewers' experiences interviewing children of different ages. *Psychology, Crime & Law, 26,* 967–989. doi: 10.1080/1068316X.2020.1742343

II. Magnusson, M., Ernberg, E., & Landström, S. (2017). Preschoolers' disclosures of child sexual abuse: Examining corroborated cases from Swedish courts. *Child Abuse & Neglect, 70,* 199–209. doi: 10.1016/j.chiabu.2017.05.018

III. Magnusson, M., Ernberg, E., Landström, S., Joleby, M., & Akehurst, L. (2020). Can rapport building strategies, age, and question type influence preschoolers' disclosures of adult wrongdoing? *Scandinavian Journal of Psychology, 61*, 393–401. doi: 10.1111/sjop.12626

IV. Magnusson, M., Joleby, M., Ernberg, E., Akehurst, L., Korkman, J., & Landström, S. (in press). Preschoolers' true and false reports: Comparing effects of the Sequential Interview and NICHD protocol. *Legal and Criminological Psychology.*

V. Magnusson, M., Ernberg, E., Landström, S., Joleby, M., Akehurst, L., Korkman, J., & Ask, K. (2020). *Effects of drawings on preschoolers' statements of self-experienced and non-experienced events.* Manuscript submitted for publication.

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have worked alongside so many kind and inspiring colleagues and friends in the research unit for Criminal, Legal, and Investigative Psychology (CLIP). Outside of the Department, I want to thank all my conference buddies for making the yearly summer conferences bearable and exciting. I am also grateful to all the practitioners who have helped me with my PhD research. Special thanks to *Inger-Lise Brøste*, *Kristina Kepinska Jakobsen* and *Tone Davik* in Norway, and to Dr *Anneli Larsson*, *Ragnar Linkros* and *Marie Karlsson* in Sweden for all their support.

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Mikaela Magnusson
Gothenburg, November 2020

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Figures and tables

Prologue

During the 20th century, legal reforms and societal changes in Western societies led to increased opportunities for children to provide eyewitness testimony (Bruck & Ceci, 1999). In the 1980s, several bizarre and disturbing legal cases began emerging around the world. Young children were giving detailed accounts of severe sexual and physical abuse at their daycare centres. The children's reports included fantastical elements, such as flying in hot air balloons and witnessing sadistic rituals. Occasionally, the narratives contained details eerily similar to testimonies during the witch trials of the 15th–17th centuries, when numerous innocent people were accused of witchcraft (Ceci & Bruck, 1995).

One of the best-known daycare controversies is the McMartin case (State of California v. Buckey, 1990). During the summer of 1983 in a suburban area outside of Los Angles, a mother filed a police report regarding alleged sexual abuse of her 2-year-old son. She suspected that a preschool teacher had molested her child under the guise of taking his temperature. The investigation quickly intensified after the police sent a letter to hundreds of other parents with children at the same daycare centre. In the letter, the police instructed parents to question their children to see if they also had been sexually abused. This letter resulted in hundreds of children stating that they had experienced bizarre forms of abuse. Many of these children were interviewed by therapists using highly suggestive interviewing techniques (Garven, Wood, Malpass, & Shaw, 1998). Beyond the statements given by the children, there was no strong corroborative evidence to substantiate their claims. The McMartin case ran for nearly eight years before the prosecutors eventually dropped all charges, resulting in one of the most expensive trials in American history (for more information, see Garven et al., 1998).

The McMartin trial and similar daycare cases sparked interest among practitioners, researchers, and the general public, in children's witness abilities. Questions regarding young children's credibility became heavily debated, often with polarized views

reflecting different sides of the issue (see Ceci & Bruck, 1995). Some emphasized that young children would not lie about abuse and therefore must be believed. As abuse victims can have difficulties disclosing their experiences, the use of suggestive techniques was deemed necessary to facilitate their reports. Others argued that young children are susceptible to suggestive influence and could disclose false information if interviewed in a coercive manner. These extreme positions are problematic as the issue is both nuanced and complex. It became evident that more research was needed to uncover the abilities of young children to provide legal testimony. Although some scholars had begun studying the effects of suggestibility on children's testimony during the early 20th century (e.g., Binet, 1900; Lippmann, 1911; Stern, 1910; Varendonck, 1911), it was not until the daycare controversies in the 1980s that research into young children's witness abilities began rapidly expanding.

Sweden has not been spared from severe miscarriages of justice involving suggestive interviews with preschoolers. One tragic example is the 'Kevin case'. In August 1998, a 4-year-old boy named Kevin was found dead next to Lake Glasfjorden in Arvika. Shortly after his death, two young boys, Robin, who was five years old at the time, and his older brother Christian, who was seven years old, went with their parents to the police station. Christian had said that he had seen another older boy in the area at the time of Kevin's death. During the car ride to the police station, Robin said that he had seen the murderer. Robin and Christian quickly became key witnesses in the police investigations. After thirty forensic interviews with the boys, the police settled on a theory of what happened on the day of Kevin's death. During a press conference, the police announced that Robin and Christian were responsible for the murder. Due to the boys' age, the case was closed without being tried in court.

Two decades later through the investigative work of journalists (Josefsson, 2017; Sköld, Urisman Otto, & af Kleen, 2017), the police investigation in the Kevin case came to be strongly criticized. The child interviews with Robin and Christian had been highly suggestive (for an overview, see Landström, 2020). Beyond the sheer number of interviews with the brothers (a total of thirty police interviews), the interview sessions were often long. Some lasted several hours even though the boys showed clear signs of fatigue, with the longest interview with Christian taking four hours and 26

minutes. During this interview, Christian said 61 times that he could not take it anymore and wanted to stop. The interviewers used social pressure, hypothetical reasoning, and did not seem to listen to the boys' explanations. Robin and Christian provided nine different scenarios for Kevin's murder and accused nine different people. Their statements were incoherent and, in the beginning, remarkably inconsistent with the forensic evidence. For example, the boys could not initially describe the location of the body or how the death had occurred (Landström, 2020). In the aftermath of the journalistic discoveries of this legal scandal, the case was reopened. Robin and Christian were then officially freed of all suspicion of involvement in Kevin's death. For more information about how this legal scandal deeply affected the families involved in the case, see Slätt and Karlsson-Dahlén (2020).

While much has been learned in recent decades regarding young children's witness abilities, problematic cases involving suggestive interviewing techniques are still an issue in our legal system. For example, in 2015, a preschool employee was convicted in a Swedish District Court of sexually abusing three young children. In the Court of Appeal, an expert witness in legal psychology provided a statement pointing out that the case included elements found to substantially increase the risk of false reports that are not anchored in real events. These risk factors included suggestive influence from worried parents, police interviews that did not adhere to research-based guidelines, and the use of prop dolls to elicit information from the child witnesses (Korkman, 2018). On closer inspection, the children's testimonies contained both inconsistencies and implausible details. Beyond the children's disclosures and hearsay testimony from their parents, there was no corroborative evidence to substantiate the allegations. The Court of Appeal reasoned that the abuse allegations could not be proven without a reasonable doubt, and the man was acquitted of all charges after an extended legal process. Following the initial accusations, he was unable to continue working as a preschool teacher (for more information about this case, see Dahlbom, 2016).

As illustrated in the cases described above, suggestive child interviewing can lead investigations astray and contribute to severe miscarriages of justice. However, poorly conducted police interviews can also have devastating consequences for children who have suffered maltreatment. Beyond causing additional distress for victims, the ability

to prosecute and adjudicate a case can be impaired by inadequate child interviewing (Cross, Ernberg, & Walsh, 2020). This could, in turn, have a range of negative consequences. Guilty perpetrators who are not apprehended might re-offend and cause further harm. Furthermore, child victims are not given a fair trial and risk not receiving compensation and adequate help to cope with their abuse. Unfortunately, since case files for discontinued child abuse investigations are typically kept confidential, these cases rarely reach the media and the general public. Likewise, successful cases in which young children can give reliable testimony during police interviews are often overlooked. I would therefore like to end this prologue by describing another recent daycare case from Sweden.

In 2014, a 4-year-old girl told her mother that one of the staff members at her preschool had touched her private parts. When the police searched the suspect's electronic devices, they found video and photo documentation of sexual abuse of numerous preschoolers. The man later confessed and provided additional details surrounding the abuse of 14 young children between the ages of 1 and 5 years. This resulted in one of the most extensive legal trials of child sexual abuse in Swedish history. During the trial, the suspect explained that he targeted young children because they were less likely to tell someone. He also told the children that the abuse was a secret to discourage them from disclosing. However, due to the informal disclosure of one of his many victims, his crimes could be exposed and stopped. During the police interviews, several of the children could give brief but accurate descriptions of the abuse. Based on the children's testimonies, the corroborative evidence, and the suspect's confession, he was convicted and sentenced to closed psychiatric care. (The case number of this verdict has been omitted to protect the identities of the involved parties. Please contact the author for more information about the case.)

Introduction

This thesis aimed to expand our knowledge of preschoolers' witness abilities during forensic interviews. Preschoolers (aged 3 to 6 years) are particularly vulnerable in legal contexts. Child maltreatment, including physical and sexual abuse, are offences that tend to take place in secret behind closed doors. The ability to collect physical evidence or diagnose injuries consistent with abuse can be limited (Diesen & Diesen, 2013). Furthermore, the presence of technical evidence or direct eyewitness observations tends to be rare (Ernberg, Magnusson, Landström, & Tidefors, 2018a). Disclosure from a child to an adult is often necessary to identify suspected abuse of young children (London, Bruck, Wright, & Ceci, 2008). Without the presence of strong corroborative evidence, a child's testimony is also vital in order to investigate, prosecute, and adjudicate a case (Ernberg, Magnusson, & Landström, 2018b). The widespread problems of delayed disclosures and under-reporting among child victims are therefore highly worrisome (London et al., 2008). Many children do not disclose the crime directly after experiencing abuse, and it is estimated that only a fraction of all cases involving child abuse and maltreatment reach the justice system (Ceci & Bruck, 1995).

Unidentified child victims can risk repeated victimization and might not receive adequate help to cope with their abuse (Kendall-Tackett, Williams, & Finkelhor, 1993). Furthermore, other children could be placed in danger if guilty perpetrators continue to re-offend (Paine & Hansen, 2002). The consequences of abuse for children's health and wellbeing can be wide ranging. Children may suffer from injuries and other physical symptoms that need medical attention. In severe cases, children might risk permanent injuries or death as a result of maltreatment (Jenny & Isaac, 2006). Child abuse can have a range of adverse mental health outcomes, including post-traumatic stress disorder, anxiety, depression, substance abuse, eating disorders, sexual dysfunction, self-harming behaviours, and attempts at suicide (e.g., Li, D'Arcy & Meng, 2016; Lindert et al., 2014; Maniglio, 2009). However, different symptoms and outcomes that correlate with childhood abuse are not exclusively related to

maltreatment (Maniglio, 2009). Hence, different correlates should not be seen as reliable diagnostic cues to determine whether abuse has occurred. Furthermore, children may exhibit highly varied reactions to abuse, and some children do not exhibit any observable symptoms (Sanjeevi, Houlihan, Bergstrom, Langley, & Judkins, 2018). According to the Convention on the Rights of the Child, societies should strive to protect children from all forms of abuse and neglect (UNCRC, 1989, articles 19 and 34).

During criminal investigations of child maltreatment, it is important to remember that an allegation of abuse can be unfounded. Historical events such as the witch trials and the wave of ritualistic daycare allegations in the 1980s have shown us that children's eyewitness testimony can be prone to errors. Several processes may be in play during the production of false allegations, including suggestibility, source-monitoring errors, and social compliance (Ceci & Bruck, 1995). These effects can influence both adults and children (Laney & Loftus, 2016). However, preschoolers are particularly vulnerable to certain types of suggestive influence compared with school-aged children and adults (Bruck & Ceci, 1999). When investigating and adjudicating suspected crimes involving young children, legal practitioners often face significant challenges. To ensure the child's and the suspect's right to a fair legal trial, forensic interviewers should follow research-based guidelines to minimize the risks of suggestive influence (Saywitz, Lyon, & Goodman, 2018). The results might otherwise be devastating for all involved, as illustrated by the legal cases described in the prologue to this thesis.

This thesis aimed to advance our knowledge of preschoolers' witness abilities during forensic interviews. Specifically, we explored forensic interviewers' experiences of interviewing children of different ages (Study I), examined preschoolers' disclosures of child sexual abuse (CSA) in corroborated legal cases (Study II), and assessed the potential effects of different techniques for interviewing preschool-aged children using controlled laboratory experiments (Studies III–V). Before turning to a more detailed description of the current set of studies, an overview of young children's witness abilities is in order. I will outline relevant research findings relating to (i) preschoolers' role in criminal investigations, (ii) preschoolers' witness abilities, (iii) preschoolers' disclosure tendencies, and (iv) research-based child interviewing techniques designed to facilitate children's accounts.

Preschoolers' role in criminal investigations

In the Kevin case described in the prologue, the two young children were suspects in a homicide investigation. Suspecting preschoolers of committing a crime is exceptional and not representative of most police investigations involving preschoolers. More commonly, young children are the complainants in cases of alleged physical or sexual abuse. During 2019, the Swedish police received 18,089 reports of physical child abuse and 2440 reports of rape of a child below the age of 15 years (BRÅ, 2020). Few cases, relative to the large number of police reports, are eventually tried in court. For example, only 10–15% of all police reports regarding child sexual abuse (CSA) are estimated to be prosecuted (Diesen & Diesen, 2013). However, both Swedish and international research estimates that the prosecution rate is lower in abuse cases involving preschoolers compared with older children (Brewer, Rowe, & Brewer, 1997; Bunting, 2008; Diesen & Diesen, 2013; Ernberg et al., 2018b). One of the leading factors influencing the decision to prosecute cases of alleged child abuse is the quality and content of the forensic interview with the child witness (Ernberg, Magnusson, & Landström, 2020).

During investigations of abuse or maltreatment, interviews with the child witness constitute a central part of the police investigation. In Sweden, interviews with children should be carried out promptly by a police employee who has received specialist training in child interviewing. In the section '*Child interviewing in a Swedish context*', I will provide more detailed information about current child interviewing practices in Sweden. If possible, child victims and witnesses should be interviewed at a Barnahus following the Nordic Barnahus model (Prosecution Authority, 2018). The purpose of Barnahus facilities is to facilitate cooperation between different governmental agencies during criminal and child protective service investigations of suspected child abuse and

maltreatment (see Johansson, Stefansen, Bakketeig, & Kaldal, 2017, for an overview). Different practitioners involved in a case, including police officers, prosecutors, child protective service workers, and psychologists, work together at the Barnahus facility. During a forensic child interview, a police employee interviews the child. The other practitioners involved in the case, watch the child's statement in real time from an adjacent room. The child tells her or his story once instead of having to repeat it to a number of different professionals. Today, there are 32 Barnahus facilities across Sweden. Although most Swedish municipalities are connected to a Barnahus, there are still some geographical areas that have not implemented the model (Barnafrid, 2019). In those areas, the child interview is typically conducted at a police station with access to video-link equipment.

Children below the age of 15 years rarely testify in Swedish courts (Prosecution Authority, 2018). The courts instead assess the children's testimony via their video-recorded police interviews. One rationale behind this procedure is to protect children from the potentially negative experience of having to give testimony live in court and be cross-examined (Landström & Granhag, 2010). Consequently, children cannot answer questions, clarify their statements, or address concerns that may arise during a trial in a Swedish court. This procedure places considerable demands on the quality and content of the recorded child interview from the preliminary investigation (Ernberg, Tidefors, & Landström, 2016).

Investigating alleged abuse of preschool-aged children is challenging for legal practitioners. In a series of studies conducted before this thesis research, we examined the challenges of prosecuting the alleged sexual abuse of preschoolers. Specifically, we wanted to understand why so few CSA cases involving preschoolers were prosecuted and tried in court. To address this research question, we used a range of methodologies including a comparison of prosecuted and discontinued legal cases and surveys of Swedish prosecutors about their experiences. In line with international research (Cross et al., 2020), we found that the feasibility of prosecuting CSA cases involving preschoolers often depends on the quality and content of the child interview from the preliminary investigation (Ernberg et al, 2016; 2018a; 2020). The child interview was particularly critical in cases lacking strong corroborative evidence (e.g., photos of the abuse,

injuries, and DNA evidence) or a suspect confession (Ernberg et al., 2018a; Magnusson, Ernberg, Landström, & Granhag, 2018). Furthermore, cases involving young preschoolers (2 to 4 years of age) were less likely to be prosecuted than were cases involving older preschoolers (5 to 6 years of age, Ernberg et al., 2018a). The potential presence of external social influences, for example, in cases involving acrimonious custody disputes or child protective service investigations, can also have a negative influence on the decision to prosecute (Ernberg et al., 2018a, 2020).

When asked about the challenges of investigating the alleged abuse of preschoolers, Swedish prosecutors expressed concern that current interviewing techniques are often not adapted to meet the unique needs of young children (Ernberg et al., 2016, 2020). Young children's limited cognitive abilities and short attention span were seen as obstacles during their forensic interviews. Preschoolers may have difficulties understanding the purpose of a police investigation, and it can be challenging to facilitate their reports without asking leading questions. Furthermore, the prosecutors expressed concern that preschoolers could not meet the credibility criteria used in Swedish courts, including that testimony should be clear, long, and rich in detail (NJA, 2017, p. 316). In line with these concerns, we found in an analysis of 100 Swedish court cases from 2010 to 2015 that these criteria were commonly used when assessing the testimony of preschool-aged children (Ernberg et al., 2018b). Taken together, our prior studies demonstrated the need to improve our knowledge of how best to improve the quality of interviews with preschool-aged children in criminal investigations. The present thesis was intended to address this aim by examining preschoolers' witness abilities during forensic interviews.

Preschoolers' witness abilities

The scientific literature on preschoolers' witness abilities was of central importance for the studies in this thesis. Young children's ability to provide informative and reliable testimony depends on a wide range of factors, from children's cognitive and linguistic capacities to socio–emotional and motivational obstacles (Poole, 2016; Saywitz et al., 2018). In the following sections, I will describe findings from the field of developmental psychology that relate to young children's witness abilities. However, to give context, I will start by describing some fundamental components of human memory and witness testimony.

Central aspects of witness testimony

The quality of children's and adults' legal testimony is closely connected to their memory (Otgaar & Howe, 2018). Over a century ago, Hugo Münsterberg described his fallibility as a witness in the classic *On the witness stand: Essays of psychology and crime* (1908). When called to provide testimony regarding a burglary, Münsterberg accidentally reported several inaccurate details under oath. Even with the best intentions, his reporting was prone to error. The underlying mechanisms of our memory have been among the main foci of inquiry in the psychological discipline. Today, it is well known that our testimonial abilities are imperfect (Wells, Memon, & Penrod, 2006). Decades of research have demonstrated the reconstructive nature and fallibility of human memory (Otgaar & Howe, 2018). Unintentional errors can range from minor inaccurate details to the creation of entirely *false memories* of traumatic personally salient experiences (Loftus, 2017). Mistakes and errors can occur during all stages of the memory process, from *encoding,* when sensory information is selectively picked up and processed, to *storage,* when the information is retained, and lastly to the time of *retrieval* of information from our memory (Perfect & Lindsay, 2014). Researchers often differentiate between *recall*-based and *recognition*-based memory processes

(Baddeley, 2014). Recall-based processes refer to the retrieval of information from our memory. Recognition-based processes, on the other hand, refer to the recognition of specific information that we encounter.

Our memories are not exact representations of events (Loftus, 2017). While we would often like to believe that our accounts of past events are accurate reflections of our experiences, memory lapses are common among both children and adults (Otgaar & Howe, 2018). In everyday life, memory errors might be inconvenient or a source of frustration, for example, mixing up the times of appointments or forgetting the name of an acquaintance. However, such memory flaws can have devastating consequences in legal settings. Faulty eyewitness testimony and misidentification are, for example, the most significant factors contributing to wrongful convictions of innocent suspects who have later been exonerated by DNA evidence (Innocence Project, 2020). Moreover, it is critical to keep in mind the difference between remembering and reporting. Children and adults may omit truthful information (i.e., *omission errors*), report false information (i.e., *commission errors*), and deny or delay disclosures of past experiences for reasons other than memory errors (Goldfarb, Goodman, Larson, Gonzalez, & Eisen, 2018). This includes a complex array of variables involving cognitive processes, socio–emotional barriers, and contextual factors. I will expand on these topics in later sections of this thesis.

Young children's witness abilities

From approximately 3 to 4-years of age, children can provide reliable statements about recent past events when interviewed following research-based guidelines (Hershkowitz, Lamb, Orbach, Katz, & Horowitz, 2012; Powell & Snow, 2007). While uncommon, there are also examples of testimonies from 2-year-old children that have been substantiated by corroborative evidence (Goodman, Jones, & McLeod, 2017). Consequently, it is difficult to recommend a clear cut-off regarding children's witness abilities based solely on chronological age. Instead, preschoolers' witness abilities depend on their developmental level, which can vary among young children of the same age (Brubacher, Peterson, La Rooy, Dickinson, & Poole, 2019). There is

typically large variability in young preschoolers' witness performance. Throughout early childhood, children's witness abilities rapidly expand in connection with their cognitive and social development. In the following sections, I will outline some critical developmental factors that influence children's abilities to provide testimony during their preschool years.

Preschoolers' development

Children cannot provide legal testimony until they have developed adequate cognitive and linguistic skills to encode and retell past experiences (Lamb, Malloy, & La Rooy, 2011). Memory development before verbal development primarily involves implicit memories (e.g., procedural knowledge) and stimuli recognition (Bauer, 2008; Wittmer, Petersen, & Puckett, 2013). Experimental research, for example, demonstrates that infants can show preferences for foods (e.g., carrot juice) that their mother was instructed to ingest during pregnancy and lactation (Spahn et al., 2019). Another example of early memory development is that newborn infants can distinguish the sound and intonation of their mother's voice from within womb (DeCasper & Spence, 1986). Children begin to communicate verbally (saying their first words) from roughly around 1 year of age, with large variations between children (Saxton, 2017). The ability to put words together into pairs typically develops at around 16 to 18 months. There is a rapid increase in children's vocabulary during the preschool years (sometimes described as the 'vocabulary spurt'), with 6-year-old children exhibiting knowledge of around 10,000 to 14,000 words (Saxton, 2017).

From an early age after beginning to develop their linguistic skills, young children gradually start excelling in their ability to form *autobiographical memories.* Autobiographical memories refer to personally experienced events that are connected to an individual's identity (Fivush, 2011). These memories shape our life narrative via a personal timeline spanning the past, present, and future. To form autobiographical memories, it is argued that we need autonoetic awareness, which refers to self-awareness of having experienced the past (Tulving, 2002). The emergence of a sense of self typically starts to be exhibited by children from around 2 years of age (Courage, Edison, & Howe, 2004; Howe, Courage, & Peterson, 1994). In connection with their

development of language and a sense of self, young children progress in their abilities to verbally communicate their autobiographical experiences with others (Fivush, 2011). However, due to a phenomenon called *infantile amnesia,* children typically cannot report memories of events that occurred before verbal development (Brubacher et al., 2019; Peterson & Rideout, 1998).

Throughout the preschool years, children's memory and cognitive development, as well as their linguistic competence, rapidly expand (Poole, Brubacher, & Dickinson, 2015). According to Jean Piaget's *theory of cognitive development*, children experience the 'preoperational stage' of development between approximately 2 and 7 years of age (Piaget, 1951). During this stage, children begin to use symbolic reasoning (i.e., the ability to use symbols as representations of something else) to understand and explore the world around them. Following Piaget's theorizing, the preoperational stage contains four important concepts reflecting different parts of preschoolers' cognitive development: *centralization*, *egocentrism*, *lack of conservation*, and *non-reversibility* (Hwang & Nilsson, 2011). Centralization refers to young children's tendency to focus on one thing at a time. Egocentrism reflects preschoolers' self-focused reasoning and difficulty understanding others' perspectives (however, see the following section for more information about perspective-taking). Lack of conservation describes young children's difficulty comprehending that certain characteristics remain the same even when the physical appearance changes (e.g., if you pour a glass of water into another container, it is still the same amount of water). Lastly, non-reversibility concerns preschoolers' difficulty understanding that actions can be reversed. Although aspects of Piaget's theory have been criticized and refined over the years, his ideas are still influential for our understanding of young children's cognitive development (Hwang & Nilsson, 2011).

Another important developmental milestone that occurs during early childhood is *theory-of-mind* development. This refers to children's understanding of their own and others' mental states (Flavell, 1999). In an interview context, a 3-year-old child may, for example, not understand that an interviewer does not possess the same knowledge as the child about the event in question (assuming the interviewer was not present at the event). Instead, these types of inferences about others' beliefs (i.e., first-order belief understanding) typically start to be exhibited at around 4 years of age. Furthermore,

theory-of-mind is associated with children's lie-telling abilities, as children need an understanding of other people's beliefs to successfully deceive (Talwar & Crossman, 2012). Theory-of-mind has sometimes been linked to increased resistance to suggestive questions (e.g., Melinder, Endestad, & Magnussen, 2006), although other studies have found results in the opposite direction (for reviews, see Bruck & Melnyk, 2004, and Klemfuss & Olaguez, 2020).

Children's *executive functions* (i.e., inhibitory control, working memory, and cognitive flexibility; see Diamond, 2013) and, in particular, *cognitive inhibition* have also been found to correlate with young children's resistance to suggestive questions (Alexander et al., 2002; Melinder et al., 2006; Poole, Dickinson, Brubacher, Liberty, & Kaake, 2014; Roberts & Powell, 2005; Ruffman, Rustin, Garnham, & Parkin, 2001). Cognitive inhibition refers to the ability to inhibit immediate responses by controlling behaviours, thoughts, and emotions to fulfil other goals (Diamond, 2013). In a child interview setting, an inhibitory process can, for example, be to suppress an automatic response to search in memory for the correct answer. Cognitive inhibition has also been positively associated with children's lie-telling abilities, presumably since lie-telling involves suppressing the correct response in favour of a lie (Talwar & Crossman, 2012). Children's cognitive inhibition abilities develop rapidly during the preschool-years, and older preschoolers (aged 5 to 6 years) typically outperform younger preschoolers (aged 3 to 4 years) on various inhibitory tasks (e.g., Schaaf, Alexander & Goodman, 2008).

According to *source-monitoring theory,* the ability to make inferences about the source of specific information (e.g., where and when information was obtained) also develops gradually during childhood (Johnson, Hashtroudi, & Lindsay, 1993). This theoretical framework stems from *reality monitoring theory*, which refers to our ability to distinguish true (i.e., self-experienced) memories from imagined experiences (Johnson & Raye, 1981). Preschoolers have a limited ability to draw inferences regarding different sources compared with older children and adults (Ceci & Bruck, 1993, 1995). This can, in turn, have a negative impact on their witness abilities. Source-monitoring errors can result in children misattributing the source of information. For example, a child may confuse their experience of a specific event with information they have heard

from someone else (e.g., a parent or forensic interviewer) about the event. Similarly, young children can sometimes have difficulties distinguishing between fantasy and real experiences. In an interview setting, this could have negative consequences if the police, for instance, ask children to pretend or speculate about different events (Ceci & Bruck, 1995).

Children's ability to provide testimony evolves in connection with the acquisition of knowledge during childhood (Fivush, 2011). One should therefore not expect young children to provide reliable information about advanced concepts such as time or frequency estimates (Lamb et al., 2018). Moreover, preschoolers are still expanding their vocabulary and can use idiosyncratic words to describe persons or objects (Poole et al., 2014). Likewise, young children may mispronounce different sounds, mix up similar words, employ the wrong grammatical forms, or use words before comprehending their meaning (Saywitz & Camparo, 2014). In an interview setting, the idiosyncrasy of preschoolers' language can be a potential source of misunderstandings between child and interviewer. For example, interviewers may need to clarify young children's terminology for different body parts or potential (nick)names of people in their lives (Ceci & Bruck, 1995).

Furthermore, preschoolers are still learning many social and conversational rules relevant to their witness abilities, such as how to structure a story and stay on a specific topic (Lamb et al., 2011). Young children have a limited capacity for information processing and can sometimes be easily distracted (Wittmer et al., 2013). Likewise, preschoolers have a limited attention span. Lengthy and cognitively demanding interviewing sessions might result in fatigue and inattention. Fatigue could, in turn, have a negative influence on the reliability of young children's reports (Newlin et al., 2015). Preschoolers might, for example, drift off-topic or start guessing when they become tired (Poole, 2016). Interviewers therefore need to keep child interviews relatively brief to accommodate young children's limited attention (Brubacher, Benson, Powell, Goodman-Delahunty, & Westera, 2020).

Another relevant factor to consider is children's socio–emotional development during the preschool years. *Attachment theory* (created and refined by John Bowlby and Mary Ainsworth, see Bretherton, 1992) provides an influential framework for

understanding young children's socio–emotional development. Attachment refers to children's emotional bond to other people (e.g., the relationship with their primary caregiver). According to attachment theory, children's early attachment patterns can influence their behaviour and social interactions later in life (Hwang & Nilsson, 2011). Attachment patterns may also affect children's encoding, storage, and retrieval of autobiographical memories (Chae, Goodman, & Edelstein, 2011). Preschoolers (aged 3 to 5 years) with a more secure attachment style have, for example, been found to report more correct information when interviewed about a distressing event than do children with a more insecure attachment style (Chae et al., 2018). There is also research indicating that parents' attachment styles can be associated with children's memory recall abilities for painful medical procedures (e.g., children aged 3 to 10 years, Goodman, Quas, Batterman-Faunce, Riddlesberger, & Kuhn, 1997) and other distressing events (e.g., family removals during investigations of child maltreatment, children aged 3 to 12 years, Melinder, Baugerud, Stigsdatter Ovenstad, & Goodman, 2013). Thus, children's socio–emotional development may influence their ability to describe past events in connection with a police interview.

Age differences

Over the last four decades, substantial research efforts have been made to examine and understand developmental trends in children's and adults' witness abilities. Age is one of the most reliable predictors of children's memory recall and witness abilities (Ceci & Bruck, 1993). Preschoolers (aged 3 to 6 years) tend to provide briefer and less detailed responses than do older children and adults (e.g., see reviews by Goodman & Melinder, 2007; Pipe, Lamb, Orbach & Espelin, 2004). With regard to the accuracy of children's responses, findings have been more inconsistent. Some studies report no significant differences between younger and older children during free recall (e.g., ages 9 to 16 years, Jack, Leov, & Zajac, 2013; aged 5 to 12 years, Sutherland & Hayne, 2001). Other studies have observed accuracy differences, with older children being more accurate than younger children (e.g., ages 3 to 17 years, Eisen, Qin, Goodman, & Davis, 2002; aged 3 to 10 years, Goodman, Quas, Batterman-Faunce, Riddlesberger, & Kuhn, 1997). Researchers have also observed substantial age differences

among preschoolers, with older preschoolers (aged 5 to 6 years) typically providing more details than do younger preschoolers (aged 3 to 4 years, e.g., Hershkowitz et al., 2012; Lamb et al., 2002). Five-year-old children, for example, give more detailed statements than do 3- and 4-year-old children during forensic interviews about alleged CSA (Gagnon & Cyr, 2017). Similar age trends among preschoolers have also been found in laboratory settings with regard to both the amount of detail and statement accuracy (e.g., Alexander et al., 2002; Goodman et al., 1994; Goodman & Reed, 1986; Melinder et al., 2006). Likewise, younger preschoolers (aged 3 to 4 years) have been found to be more susceptible to suggestive influence than are older preschoolers (aged 5 to 6 years, Ceci & Huffman, 1997).

A large number of studies have shown that young children are more vulnerable to external suggestive influence. In a systematic review of developmental trends in children's and adults' susceptibility to suggestive interviewing techniques, young children were, for example, found to be the most suggestible in 83% of the studies (Ceci & Bruck, 1993). On the other hand, recent research has demonstrated the importance of also highlighting the strengths of young children's witness abilities (Otgaar, Howe, Merckelbach, & Muris, 2018). In some situations, children can be less susceptible to false memories than are adults. This phenomenon has been called *developmental reversals* (Brainerd, 2013). Specifically, children tend to be more accurate on tasks relating to the development of spontaneous false memories (e.g., the Deese–Roediger–McDermott paradigm). It is suggested that children's limited knowledge base could help explain these findings (Otgaar et al., 2018). With an increased knowledge base, individuals can make more incorrect associations to related information when recalling specific information. For example, when faced with lists of words that relate to a specific theme (e.g., morning, pancakes, coffee, juice, and oatmeal), adults are more likely than children to incorrectly recall the associated word (e.g., breakfast) that does not appear in the word list.

While young children tend to be inferior when faced with suggestive techniques, their limited knowledge may be a factor protecting against other forms of memory error. Interestingly, researchers have also found developmental reversals among preschool-aged children. Ornstein et al. (1998), for example, reported that 6-year-old

children were more likely to make inferential-based errors (i.e., describing events that usually occur) when recalling a visit to the doctor than were 4-year-old children. Similarly, Principe, Guiliano and Root (2008) demonstrated that older preschoolers (aged 5 to 6 years) were more likely to incorrectly report inferred information as real experiences than were younger preschoolers (aged 3 to 4 years). Hence, young preschoolers appear the least vulnerable to memory distortions that require deeper or more complex knowledge of a target event, including script-based information about what usually occurs in specific situations.

Taken together, preschoolers can thus, under optimal conditions, provide reliable legal testimony. Nevertheless, investigations involving young child witnesses tend to be particularly challenging. Due to young children's developing cognitive and verbal abilities, preschoolers cannot be expected to give as complete accounts as do older children or adults (e.g., Goodman & Reed, 1986; Marin, Holmes, Guth, & Kovac, 1979). In the following sections, I will briefly describe four other factors (i.e., suggestibility, lie-telling, distress, and maltreatment) relevant to preschoolers' witness abilities.

Suggestibility

Suggestibility refers to "*…the degree to which children's encoding, storage, retrieval, and reporting of events can be influenced by a range of social and psychological factors*" (Ceci & Bruck, 1993, p. 404). Individuals of all ages can be affected by suggestibility (Loftus, 2017). However, as mentioned earlier, preschoolers are particularly vulnerable to certain forms of suggestive influence (Bruck & Ceci, 1999). Young children are, for example, more prone to errors when questioned using suggestive interviewing techniques than are older children and adults (Ceci & Bruck, 1993). These findings extend to inaccurate details about personally salient adverse events such as painful medical procedures (Bruck, Ceci, Francoeur, & Barr, 1995) and false reports about fictitious negative events such as getting a hand stuck in a mousetrap (Ceci, Huffman, Smith, & Loftus, 1994). Children's suggestibility has been proposed to be associated with a range of demographic, cognitive, and social factors (for reviews, see Bruck & Melnyk, 2004; Klemfuss & Olaguex, 2020; Quas, Quin, Schaaf, & Goodman, 1997), including children's compliance, theory-of-mind, inhibitory control, imaginativeness, temperament,

and attachment style. In a comprehensive review of 69 published and unpublished laboratory studies involving 4848 children (Bruck & Melnyk, 2004), intellectual impairment was the most consistent predictor of suggestibility, followed by limited linguistic skill. These observations were replicated in a recently updated review including 55 studies involving 6455 children (Klemfuss & Olaguex, 2020).

It is important to note that children may sometimes respond inaccurately to suggestive influence due to compliance while being aware that their response is inaccurate (Powell, 2005). It can often be difficult to disentangle whether a false witness report stems from compliance, source–monitoring errors, or false beliefs (Ceci & Bruck, 1995). Several suggestive techniques have been identified that can increase the risk of contaminating preschoolers' testimony, including introduction of misinformation, positive and negative reinforcement, repeated questions, social pressure, compliance with authority figures, invitations to speculate, and induction of stereotypes about the suspect (Ceci & Bruck, 1995). I will elaborate further on this topic in the section *'Children's reports about non-experienced events'*.

Lie-telling

Lying can be defined as the act of making a false statement to intentionally deceive someone else (Talwar & Lee, 2008). Preschoolers start to develop their lie-telling abilities during early childhood (Lee, 2013). At around 2 to 3 years of age, children can begin to make spontaneous untrue statements that typically involve anti-social (self-serving) lies about their misdeeds (Talwar & Lee, 2008). Early lies can also include deceit to gain some form of reward or to avoid punishment (Talwar & Crossman, 2012). Around this time, children also start to develop a basic understanding of the immorality of deceit (Talwar & Crossman, 2011). When comparing 2- and 3-year-old children's lies about peeking at a toy using the temptation resistance paradigm, 3-year-olds are more likely to deny their transgression (Evans & Lee, 2013). However, young preschoolers tend to have difficulties successfully upholding a lie during follow-up questioning (Talwar & Lee, 2002). For example, 2- and 3-year-olds often accidentally reveal the type of toy they previously denied having peeked at when asked to guess what it was (Evans & Lee, 2013).

The ability to uphold a convincing lie improves during the preschool and school years (Lee, 2013). Unlike younger preschoolers, many 6- to 7-year-old children, for example, feign ignorance in the temptation resistance paradigm described above when asked to guess the type of toy (Talwar & Lee, 2002). To successfully deceive others, a liar needs to understand both their own and others' mental states (Talwar & Crossman, 2012). At around 4 years of age, children begin to excel at lying with the intent of implanting a false belief in the listener (Talwar & Lee, 2008). Young children's developing cognitive abilities, including theory-of-mind and executive functioning, have been positively associated with their lie-telling abilities (Nagar, Williams, & Talwar, 2019; Talwar & Crossman, 2012; Talwar & Lee, 2008). During the preschool years, children also begin lying to benefit other people, for example, to protect someone close to them or after coaching by an adult (Talwar & Crossman, 2012).

Compared with adults, children's lie telling abilities are less elaborate, and they can have more difficulty maintaining their lies (Talwar & Crossman, 2012). Spontaneous lies about abuse are presumed to be rare (Ceci & Bruck, 1995). Intentionally fabricating a report requires general knowledge of the type of event (Volbert & Steller, 2014), which preschoolers typically do not possess about, for example, abusive sexual acts (Newlin et al., 2015). Furthermore, as described by Talwar and Crossman (2012, p. 354); "*young children's weak lie maintenance abilities makes it unlikely, though not impossible, that they would successfully deceive interviewers during elaborate investigative interviewing*". Hence, young children's false allegations about abuse are more likely to arise from suggestive influence and misunderstandings rather than intentional acts of deceit (Ceci & Bruck, 1995).

Distress and maltreatment

Experiencing physical or sexual abuse can have direct adverse consequences including distress and potential trauma (Newlin et al., 2015). For obvious ethical reasons, this type of distress cannot be recreated in laboratory settings. However, researchers have been able to study the effects of distress on children's witness abilities by sampling children who have undergone painful medical procedures (e.g., inoculations and voiding cystourethrograms) or other types of distressing events (e.g., accidental injuries and

natural disasters). The findings have been inconsistent with regard to children's witness performance. Some studies have found a negative association between highly stressful situations and memory performance during subsequent interviews (e.g., Eisen, Goodman, Qin, Davies, & Crayton, 2007), while others have not found a significant correlation (e.g., Eisen et al., 2002) or even better performance with higher levels of stress (e.g., Goodman et al., 1991). Bruck and Melnyk (2004) reported in a review of the relevant literature that the association between distress and children's suggestibility was either positive (25% of the studies), negative (25% of the studies), or non-significant (50% of the studies). The inconsistent findings across studies may partly be explained by methodological differences, including different operationalizations of distress and variations in target events and retention length. Notably, a similar debate can be found in the literature on the effects of distress on adults' witness performance (Sauerland et al., 2016). There is, however, more agreement regarding the finding that emotionally distinctive experiences are typically more strongly retained in our memory than are neutral non-distinctive events, which are more prone to being forgotten (Pipe et al., 2004).

Child maltreatment has been associated with a range of negative health outcomes, including deficits in children's cognitive functioning, language abilities, and social development (e.g., Blaisdell, Imhof, & Fisher, 2019; Hong, Rhee, & Piescher, 2018; Lum, Powell, Timms, & Snow, 2015). However, most laboratory research on children's witness abilities has been carried out with non-maltreated children, so one may question the generalizability of its findings to children who have suffered different forms of maltreatment. Maltreated and non-maltreated children have been found to perform similarly during memory tests involving free recall instructions (e.g., ages 5 to 12 years, Benedan, Powell, Zajac, Lum & Snow, 2018). However, findings of suggestibility studies comparing witness abilities among maltreated and non-maltreated children have been more inconsistent (Klemfuss & Olaguez, 2020). Some have found similar degrees of suggestibility across both groups (e.g., ages 9 to 12 years, McWilliams, Harris, & Goodman, 2014), while others have found that maltreated children are more vulnerable to suggestive interviewing practices (e.g., ages 5 to 12 years, Benedan et al., 2018). The variability of findings might depend on a range of factors, including

heterogeneous sampling (e.g., some studies focus on one specific type of maltreatment, whereas other studies include children who have suffered from various types of maltreatment) and other methodological differences (e.g., type of event, interview technique, and retention interval).

Children's disclosures

Study II in this thesis concerns preschoolers' disclosures of CSA. The following sections will therefore examine past research on children's disclosures of sexual abuse. I will then discuss different factors facilitating and impeding children's disclosures of abuse. Lastly, preschoolers' witness accounts in field and laboratory settings will be addressed.

Prevalence and disclosure rates of child sexual abuse

In an international meta-analysis involving 9,911,748 participants, the estimated prevalence of CSA was found to be 11.8% of the sample, with higher rates among girls (18.0%) than boys (7.6%; Stoltenborgh, van IJzendoorn, Euser, & Bakermans-Kranenburg, 2011). Somewhat lower estimates have been reported in Sweden. In a survey of adolescent participants, Landberg et al. (2015), for example, found that 13% of the girls and 3.1% of the boys who responded to the survey reported experiencing contact sexual abuse during childhood. The rates increased to 29% and 9.6%, respectively, when other types of abusive sexual activities such as non-physical CSA (e.g., online exploitation) and sexual harassment, were included.

A substantial number of victims delay their disclosure, and some do not disclose at all (London et al., 2008; Paz-Alonso, Ogle & Goodman., 2013). There is likely an unknown number of victims who are not represented in the research literature. In a comprehensive review by London et al. (2008), only between 31 and 45% of adults who claimed to have experienced CSA reported having disclosed the abuse during their childhood. Even fewer had reported the abuse to the police (5 to 13%), which is not surprising considering that informal disclosures to an adult or peer are more common than formal reports to the police (Lamb et al., 2008). In the Swedish survey of adolescent participants, 66% reported that they had told someone about the abuse, usually a friend or their mother (Landberg et al., 2015). London et al. (2008) further reported

that the disclosure distribution is positively skewed, with some reporting the abuse within a month after it occurred and many others waiting at least a year before disclosing. According to a recent meta-analysis of CSA disclosures during forensic interviews (including 44 international studies published between 1985 and 2017), approximately 35% of children did not provide details about the criminal allegation during their interviews (Azzopardi, Eirich, Rash, MacDonald, & Madigan, 2019). While some of these reports are likely to concern unfounded allegations, retrospective studies including both children and adults confirm that some abuse victims never disclose their experiences to the police (London et al., 2008).

Studies intended to estimate prevalence and disclosure rates of CSA, such as those described above, suffer from several limitations. First, the data are often collected from self-reports provided retrospectively by adults or adolescents. Notably, such responses can be vulnerable to errors, such as omissions, denials, and false reports. Second, an unknown number of crime victims may choose not to participate in these types of studies, so the findings may provide a skewed picture of the victim population. Third, some studies use data relating to children who are undergoing assessments for CSA. However, as this type of sample may include both abused and non-abused children, disclosure rate estimates based on such samples can be prone to errors, since some of the children will not have experienced abuse. Fourth, researchers generally lack knowledge regarding the ground truth of what has happened. That is, it is often impossible to know for sure whether or not disclosures are truthful. Response accuracy can, therefore, not be assessed. Fifth, estimates drawn from police reports or conviction statistics can be misleading, since only a fraction of all cases comes to the attention of the legal system. Lastly, there is a lack of consensus regarding the definitions relating to experiences of child abuse. Consequently, the definitions and parameters of, for example, crime labels frequently differ across both countries and scientific studies. Due to the limitations described above, prevalence and disclosure estimates should be interpreted cautiously.

Factors associated with disclosures

Researchers have identified a wide range of demographic, developmental, socio-emotional, and contextual factors that have been found to correlate with children's disclosure tendencies. Younger children are less likely to disclose abuse than are older children (Azzopardi et al., 2019; Goodman-Brown, Edelstein, Goodman, Jones, & Gordon, 2003; Hershkowitz, Horowitz, & Lamb, 2005; Leclerc & Wortley, 2015; Lippert, Cross, Jones, & Walsh, 2009; Sjöberg & Lindblad, 2002). Specifically, children's disclosure rate increases in a linear fashion until the beginning of adolescence, at which point the disclosure rate starts to decline again (Leach, Powell, Sharman, & Anglim, 2016). Hence, preschoolers are less likely to disclose experiences of abuse than are older children. In a study involving 1049 children, Hershkowitz et al. (2005), for example found that 47.5% of preschoolers disclosed CSA during a forensic interview, compared with 71.9% of children aged 7 to 10 years. However, it is vital to keep in mind that studies involving disclosure rates typically cannot assess disclosure accuracy. Alternative explanations beyond age differences across victims could influence these findings, such as a higher tendency to interview young children (rather than older children) who have not been abused. Another case characteristic found to affect the likelihood of disclosure is a child's relationship with the perpetrator. Children are less likely to disclose in cases of a close relationship with the abuser or in cases of intra-familial abuse (Goodman et al., 2013; Scaeffer et al., 2011; Sjöberg & Lindblad, 2002). The severity and duration of abuse have also been proposed to affect young victims' disclosure tendencies. However, the available empirical findings are inconsistent, so it is difficult to draw any conclusions regarding these effects (e.g., Alonzo-Proulx & Cyr, 2016; London et al., 2008).

Numerous additional factors can inhibit or delay a child from disclosing abuse. Faller (2016) proposed that one can organize non-disclosures into two main categories: (i) *children who do not want to disclose*, and (ii) *children who do not know that they should disclose*. The first category includes factors relating to reluctance, such as guilt, self-blame, shame, fear of upsetting the caregiver, loyalty to the perpetrator, fear of perceived future consequences for the self and others, exposure to threats or bribes, perceived lack of support, and distress (Lemaigre et al., 2017). The second category

includes factors relating to a lack of understanding or memory errors. Children may have forgotten the abuse or may not have encoded it into their long-term memory. This could, for example, be the case if a child did not perceive the abuse as salient or if a long time has passed since the last episode of abuse. Furthermore, young children might lack an understanding of the crime or of the expectation that they should disclose the abuse informally or during a forensic interview (Faller, 2016).

Some studies have examined factors that help children disclose abuse. In a systematic literature review, the most common facilitator was found to be asking a child directly about her or his situation (Lamaigre et al., 2017). Thus, providing children with an opportunity to disclose appears to be a significant factor facilitating disclosures (McElvaney, Green, & Hogan, 2012). Perceived support from family, friends, frontline professionals, and other victims can also have a positive influence on children's disclosure tendencies (Happel, 2016). For younger children, an important source of support could be non-offending caregivers or preschool staff (Lamb et al., 2008). Furthermore, the reactions provided by an informal recipient can, in turn, affect children's subsequent disclosure tendencies. Experiencing distrust and negative emotions during an early disclosure might decrease the likelihood of disclosing during a later police interview (McElvaney et al., 2012). Lastly, educational programmes and age-appropriate interventions may facilitate disclosures by attempting to bridge children's potential knowledge gap regarding their understanding of criminal acts and the importance of disclosing (Lemaigre et al., 2017).

Disclosures in corroborated legal cases

Several archival studies have examined legal cases with strong corroborative evidence that can substantiate CSA allegations, such as video recordings of the abuse or DNA traces (Paz-Alonso et al., 2013). This method has been referred to as the 'scientific case study' paradigm. Due to the presence of corroborative evidence, this procedure provides researchers with a unique opportunity to try to establish the accuracy of children's disclosures. In general, the current body of results shows that children can be relatively accurate in their reports (e.g., Leander, 2010; Leander, Christianson, & Granhag, 2007; Orbach & Lamb, 1999; Sjöberg & Lindblad, 2002). However, a

substantial number of child victims omit sensitive details and minimize their experiences. Some deny the abuse, even when investigators tell them about the presence of corroborative evidence (Paz-Alonso et al., 2013). Younger children, compared with older children, have been found to report fewer details, avoid the interviewer's questions to a greater extent, and respond more frequently with 'I don't know' and similar phrases (Leander et al., 2007; Paz-Alonso et al., 2013; Sjöberg & Lindblad, 2002). The scientific case studies carried out to date have either consisted of analyses of individual legal cases or examined heterogeneous samples involving children of all ages. Study II of this thesis extended current knowledge of preschoolers' disclosures by examining a larger sample (compared with those of previous studies) of substantiated cases involving only young children.

Children's disclosures in laboratory settings

Researchers have developed different experimental paradigms in controlled laboratory settings intended to simulate central aspects of children's disclosures. One commonly used method for studying children's disclosures of sensitive information regarding adult transgression is the 'broken toy' paradigm (e.g., Bottoms, Goodman, Schwartz-Kenney, & Thomas, 2002; Talwar, Yachison, Leduc, & Nagar, 2018). In brief, children take part in an event with an adult (i.e., a research confederate or family member) during which a toy gets broken. Afterwards, the adult asks the child to conceal the toy breakage during a later interview. A growing body of research demonstrate that children often commit errors of omission by concealing the secret information (i.e., the toy breakage) when asked open-ended questions. Gordon, Lyon, and Lee (2014), for example, reported that 82.2% of their child participants (4 to 12 years old) kept a secret for their parent about that parent's accidental breaking of the toy when asked: '*Tell me everything you did with mum or dad?*'. When asked a more direct question about what happened to the toy, the rate of secret-keeping dropped to 62.5%.

Similarly, Talwar et al. (2018) found that 89.7% of their child participants (4 to 7 years of age) kept a secret about a broken toy when asked to report everything that had happened. A total of 44.8% maintained the secret throughout the interview, even after being asked more direct questions. Past studies have reported mixed findings regarding

developmental trends in children's disclosures of toy breakage. Several studies have found that young children are more likely to disclose (e.g., ages 3 to 4 years compared to ages 5 to 6 years, Bottoms et al., 2002; a positive linear increase between ages 4 to 12 years, Gordon et al., 2014). However, other studies report that older children are more likely to disclose (ages 10 and 6 years, Pipe & Wilson, 1994), and still others have not found a significant age effect (e.g., ages 3 to 11 years, Talwar, Lee, Bala, & Lindsay, 2004). In Study III of this thesis, we used the broken toy paradigm to address questions regarding age effects and the influence of different prompts on preschoolers' witness reports.

Another commonly used method in experimental child interview research is to stage events involving an adult dressed up as a fictional character (e.g., as a pirate, Salmon, Pipe, Malloy, & Mackay, 2012). One rationale behind this procedure is to create an unusual and distinct experience to minimize the risk of source-monitoring errors (e.g., children confusing or mixing up the to-be-remembered event with other similar events). To increase the external validity of these experiments, the event can be interactive and involve different sequences of actions (Dickinson & Poole, 2017). Children can, for example, be asked to dress up in costume and have their photo taken. The purpose of this procedure is to simulate factors found in cases involving sexual posing crimes (Brown et al., 2013). In studies IV and V of this thesis, we used an experimental design with an interactive pirate event inspired by Brown et al. (2013) and Salmon et al. (2011). As in Study III, we were interested in studying age differences among preschoolers with regard to their witness reports of a staged event.

Children's reports of non-experienced events

As mentioned earlier, numerous laboratory studies have demonstrated that suggestive interviewing techniques substantially increase the risk of false accounts from young children, including inaccurate details about painful medical procedures (e.g., Bruck et al., 1995; Eisen et al., 2007; Goodman et al., 1997) and false reports about fictious negative events such as being abducted by a UFO (Otgaar, Candel, Merckelbach, & Wade, 2009) or meeting a ghost (Sjöberg, 2001). Although preschoolers can be vulnerable to false reporting after exposure to suggestive techniques, there is often great

variation between children in their susceptibility to suggestion (e.g., Ceci, Huffman, Smith, & Loftus, 1994; Powell, Jones, & Campbell, 2003, Poole & Lindsay, 2001). Furthermore, preschoolers' false reports can appear highly credible (Ceci & Bruck, 1995). It can therefore be difficult to distinguish between true and false statements given by preschoolers (Ceci & Huffman, 1997).

Several mechanisms underlying children's false reports have been proposed, including compliance, memory errors, and source misattribution (Ceci & Bruck, 1995, 2006). Some preschoolers are more prone to false reporting than are others, indicating that individual differences may play an important role in children's suggestibility (Klemfuss & Olaguez, 2020). Elaborate false reports from preschoolers have, for example, been associated with low inhibitory control (Poole et al., 2014) and high creativity (Bruck & Melnyk, 2004). When children give false accounts, they are likely to draw from numerous different sources, such as script-based knowledge and stereotypes, the questions asked by the interviewer, and their imagination (Bruck, Ceci, & Hembrooke, 1998; Ceci & Bruck, 1995; Leichtman & Ceci, 1995; Powell et al., 2003).

While rarely discussed in the research literature, it is important to note that some preschoolers give false reports in the absence of suggestive techniques (e.g., Brubacher et al., 2019; Ceci, Kulkofsky, Klemfuss, Sweeney, & Bruck, 2007; Hritz et al., 2015). Poole et al. (2014, p. 107), for example, wrote: '*Professionals who study children's event reports or work on cases cannot help but be struck by the minority of young children who clearly confabulate in response to questions about the past*'. Few studies have examined children's spontaneous false reports when questioned using different research-based child interviewing techniques. An analogue laboratory experiment with 5- to 7-year-old children found that 10.9% gave a false report about a non-experienced event (i.e., a visit to a fire station) when interviewed using the research-based NICHD protocol (Brown et al., 2013). Furthermore, 4% of elementary school-aged children gave a false report (i.e., about a desert trip) in response to a free-recall question in an experiment that utilized the narrative elaboration technique (Camparo, Wagner, & Saywitz, 2001). In studies IV and V of this thesis, we interviewed children about both a self-experienced and non-experienced event to assess the risk of false reports across different interviewing techniques.

Child investigative interviewing

In a very real sense, the reliability of young children's reports has more to do with the skills of the interviewer than to any natural limitations on their memory.

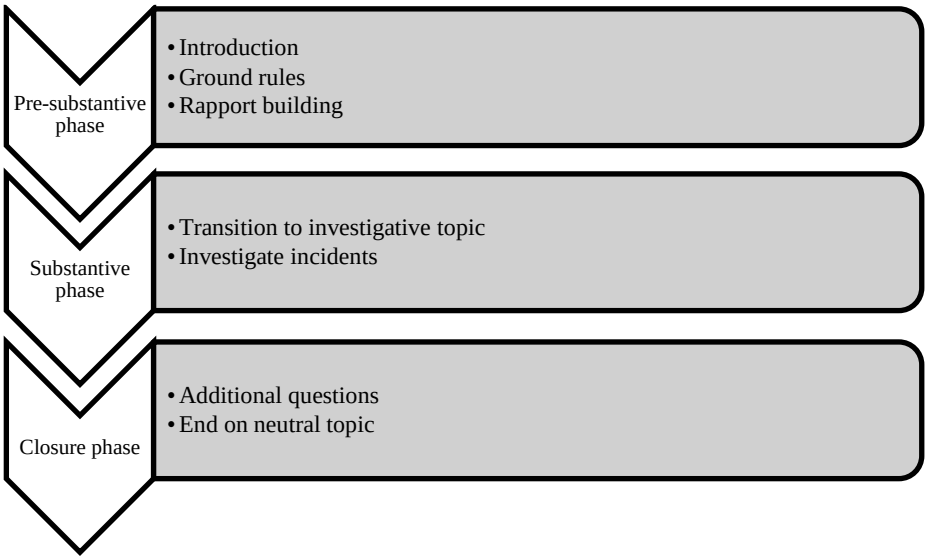
Bruck and Ceci (1999, p. 436)

The following sections will focus on aspects of the forensic interviewing context proposed to facilitate children's testimony. Specifically, I will describe different components of a recommended interview structure and discuss the research behind each component. I will then describe two different child interviewing techniques used in Scandinavian field settings: the NICHD protocol (Lamb et al., 2008) and the sequential interview model (Langballe & Davik, 2017).

Child interview components

During the late 20th century, training in forensic child interviewing began expanding and several research-based techniques were developed for this purpose (for an overview, see Faller, 2015). Child interviewing techniques vary in their level of structure, ranging from highly structured protocols (e.g., detailed instructions for each step of the interview) to more flexible techniques (e.g., 'toolbox' approaches in which interviewers adapt their method depending on the situation). See Figure 1 for an overview of a typical child interviewing structure, including a pre-substantive phase, substantive phase, and closure phase.

Figure 1. General child interview structure.



Introduction and ground rules

Forensic child interviews typically begin with an initial phase including an introduction ('Hi, my name is…'), an age-appropriate explanation of the procedures used (e.g., informing the child that the interview will be video recorded), clarification of any specific legal requirements (e.g., some countries require that children swear a witness oath or give a promise to tell the truth), and information regarding the ground rules of the interview (Newlin et al., 2015). The ground rule phase sometimes also includes practice in applying the rules through test questions. Three common rules are that: 1) the child should say if he or she does not understand a question; 2) the child should correct the interviewer if he or she says something wrong; and 3) the child should say 'I don't know' if she or he does not know the answer to a question (Brubacher, Poole, & Dickinson, 2015). Although ground rules are routinely used in forensic interviews (Fessinger, McWilliams, Bakth, & Lyon, 2020), there is a lack of research concerning the capacity of young children to understand and apply such rules during their interviews. Young children have, for example, been found to be less accurate in response to

the practice rules than are older children (aged 4 to 12 years, Dickinson, Brubacher, & Poole, 2015). Furthermore, interviewers deviate to a greater extent from ground rule guidelines when questioning younger children rather than older children (Fessinger et al., 2020; Teoh & Lamb, 2010). In a systematic review, Brubacher et al. (2015) emphasized the need to study developmental differences and cognitive factors likely to influence children's ability to comprehend ground rules. This could include young children's meta-cognitive abilities, executive functioning, and theory-of-mind development.

Rapport building

The concept of rapport is often discussed in terms of a sense of a mutual connection between individuals, that in turn may produce a range of benefits. In a child interview context, rapport has, for example, been described as *'a positive relationship between interviewer and child that sets the tone for the entire assessment process and helps increase both the amount and accuracy of information provided'* (Boggs & Eyberg, 1990, p. 86). Rapport building is often seen as a crucial component for the success of an interview and is assumed to be a useful component to help people overcome reluctance during interpersonal communication (Vallano & Schreiber Compo, 2015). However, there is less agreement concerning other aspects of rapport, including how to define, operationalize, and measure the construct (Saywitz, Larson, Hobbs, & Wells, 2015). Moreover, rapport often becomes intertwined with other constructs (e.g., trust and empathy), or is discussed under the broader umbrella term of 'interviewer supportiveness' (Saywitz et al., 2015).

Field guidelines and research-based child interviewing techniques typically include an initial phase during the interview dedicated to rapport building (e.g., Lamb et al., 2018; Poole, 2016; Saywitz et al., 2015). This can include asking children questions about fun activities they enjoy (e.g., Lamb et al., 2018) or using collaborative prop tasks such as jigsaw puzzles to establish a connection between child and interviewer (Langballe & Davik, 2017). Rapport has been proposed to have a range of benefits, such as decreasing children's reluctance and anxiety, building trust, providing an opportunity to practise answering questions, enabling the interviewer to assess the child's cognitive

and verbal abilities, increasing the synchrony between child and interviewer, and potentially making children more resistant to suggestive influence (e.g., Collins, Doherty-Sneddon, & Doherty, 2014; Hershkowitz, 2011; Saywitz et al., 2015).

These benefits are, in turn, assumed to increase children's willingness to disclose sensitive information as well as positively affect the completeness and accuracy of their statements (e.g., Brown et al., 2013; Hershkowitz, 2009; Lyon et al., 2014; Roberts, Lamb, & Sternberg, 2004; Sternberg et al., 1997; Teoh & Lamb, 2010; Yi & Lamb, 2018). On the other hand, researchers have raised concerns regarding whether an extensive rapport building session might increase the risk of children providing false information to please interviewers (Sauerland, Brackmann, & Otgaar, 2019). A long rapport building phase might also lead to fatigue among young children with limited attention spans (Teoh & Lamb, 2010).

Practice narrative

During the pre-substantive phase of a child interview, many protocols also include an 'episodic practice narrative phase' (Newlin et al., 2015) designated for practice in describing and responding to questions about an unrelated event in detail (e.g., a recent birthday party). The purpose of this technique is multi-layered. Practice narratives may facilitate children's understanding of how to describe past events to meet the unique demands of giving testimony (Sternberg et al., 1997). This phase covers, for example, how to describe episodic events in a detailed manner in response to open-ended questions (Brubacher, Powell, & Roberts, 2014). The practice narrative may also serve a rapport building function (Price, Roberts, & Collins, 2013) and give interviewers a sense of a child's reporting abilities (Lamb et al., 2018).

Introduction of the topic under investigation

A currently debated topic in the field concerns how to introduce the topic of concern and transition to the investigative part of an interview with a young child without being too leading. These introductory questions will henceforth be referred to as topic prompts (Poole, 2016). The dilemma concerns how to clarify what the interview is

about and how to encourage a child to start talking about an allegation without steering the conversation. A suggestive topic prompt may reduce children's accuracy and could be criticized in later stages of the legal process (Ernberg et al., 2016). On the other hand, children may for a variety of reasons not disclose real incidents of abuse when asked to report everything that has happened (Paz-Alonso et al., 2015).

Child interviewing guidelines typically recommend that interviewers begin with broad open-ended topic prompts, such as 'Tell me what you have come to talk to me about today' (Powell, 2003, p. 260) or 'Now that we know each other a little bit better, I want to talk about why you are here today' (Lamb et al., 2018). A recent study found that topic prompts focused on 'what' questions (i.e., probing for the topic) rather than 'why' questions (i.e., probing for the reason) produce more informative responses from both preschoolers and school-aged children (aged 5 to 9 years, Earhart, Danby, Brubacher, Powell, & Sharman, 2018). If necessary, the interviewer may need to become progressively more specific in her or his formulation of topic prompts if the child does not introduce the investigative topic (e.g., 'I understand that some things have been happening in your family. I'll listen while you tell me about that', Poole, 2016, p. 112).

Interviewers should be cautious about mentioning central investigative information, including, the nature of the suspected abuse, the identity of the perpetrator, and the location of the alleged incident before the child has introduced this information (Melinder, Magnusson, & Gilstrap, 2020). On the other hand, more specific topic prompts may be warranted when the investigators have other evidence that they need to verify (e.g., photo documentation of the abuse) during the interview, leading to questions such as: 'I see you have a bruise on your face. Tell me how that happened?' (Poole, 2016, p. 113). Importantly, specific topic prompts should be paired with open-ended free-recall invitations inviting the child to report everything he or she remembers. Balancing the specificity of topic prompts while protecting children's credibility and reliability can be challenging. Further research is needed to understand how different introductory strategies affect children's statements and disclosure tendencies (Saywitz et al., 2018).

Question types

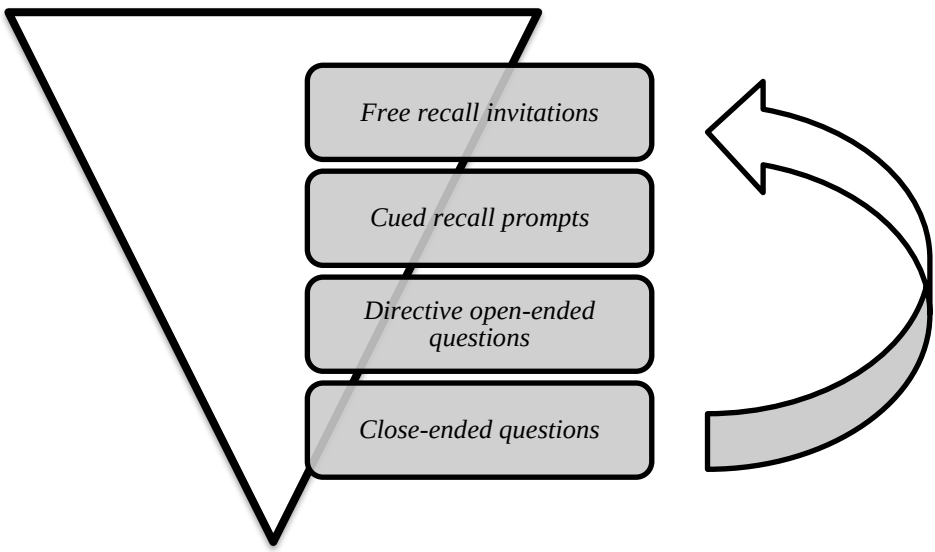
The type of questions asked by an interviewer can significantly affect children's response patterns. Several taxonomies have been created for classifying question types used during child interviews (e.g., Lamb et al., 2018; Powell & Snow, 2007; Poole, 2016). See Table 1 for an overview of common question categories used in Scandinavian field research on child interviewing. Interviewers are typically encouraged to use a funnel approach (see Figure 2) primarily starting with open-ended question types (Landström, Korkman, & Magnusson, in press). Open-ended questions are intended to help children actively seek and retrieve information from their memory via recall-based processes (Lamb et al., 2018). These include using broad invitations such as, 'Tell me everything that happened' and cued-recall prompts encouraging children to elaborate freely on specific details in their reports such as 'You said something happened yesterday, tell me everything about that'. To gain a fuller understanding of the event or to clarify specific details, the interviewer may use open-ended directive questions. Directive questions often include 'wh-questions' (e.g., questions beginning with 'what', 'when', 'where', and 'who') and should not introduce information that the child has not disclosed previously (however, see Ahern, Andrews, Stolzenberg, & Lyon, 2018 and Malloy, Orbach, Lamb & Graffham Walker, 2016, for a discussion of the risks of wh-questions). Interviewers may also use facilitators (also known as 'back-channel utterances') between questions to convey active listening and encourage children to continue talking with minimal prompting (McWilliams, Stolzenberg, Williams, & Lyon, 2019).

Open-ended questions produce more detailed and accurate responses from children than do close-ended or suggestive questions (e.g., see Brown et al., 2013; Gagnon & Cyr, 2017; Goodman & Melinder, 2007). Furthermore, children also report feeling more listened to when asked open-ended rather than close-ended questions (Brubacher, Timms, Powell, & Bearman, 2019). While open-ended questions are less likely to produce false responses, it is important to note that children can sometimes respond inaccurately or be non-responsive when asked open questions (Lamb et al., 2018).

Sometimes, interviewers must ask specific questions needed to elicit information for the investigation. If a child has not mentioned specific information relevant to the

investigation in response to the previous questioning formats, the interviewer might consider using close-ended questions (Newlin et al., 2015). These include option-posing questions that may be answered with yes/no or by choosing one of several options (e.g., 'Did it happen one time or more than one time?'). Option-posing questions have a higher risk of eliciting incorrect responses and should, if possible, be paired with open-ended questions ('Tell me more about that'). The use of suggestive questions, indicating a specific answer or adding information that the child has not disclosed (e.g., 'He hit you, didn't he?'), is generally discouraged since misinformation or leading questions can increase recall errors (Ceci & Bruck, 1995) and might reflect negatively on a child's credibility (e.g., Ernberg et al., 2016, 2020). If a suggestive question is deemed necessary for investigative purposes, the question should be paired with open-ended requests to elaborate (Prosecution Authority, 2018).

Figure 2. Funnel approach and pairing questions.



Child interviews involve iterative interactional patterns between the child and interviewer. Several studies have taken this into account by examining associations between question types and child responses using bio-directional sequential analysis (Gilstrap & Ceci, 2005; Melinder & Gilstrap, 2009; Melinder et al., 2020; Wolfman,

Brown, & Jose, 2016). This type of analytical procedure enables researchers to investigate the probability of different interactional patterns when correcting for chance. Interestingly, these studies have found that forensic interviewers tend to use more suggestive questions when children are reluctant (e.g., denying abuse and keeping silent) and more open-ended questions when children are responsive (e.g., providing central details about the allegation). In a recent study conducted in connection with the present thesis, we analysed Norwegian child interviews conducted by highly trained police officers to shed light on the dynamic patterns between question types and children's responses (Melinder et al., 2020). In line with past research (Gilstrap & Ceci, 2005; Melinder & Gilstrap, 2009), we found that children (aged 3 to 15 years) were more likely to be non-responsive or give short answers ('yes' or 'no') when asked suggestive and close-ended questions. On the other hand, open-ended questions were more likely to elicit detailed responses from children. Children's detailed responses were, in turn, frequently followed by facilitating utterances. It is important to note that these findings are correlational. Hence, the types of questions used by forensic interviewers might influence children's response patterns, but children's responsiveness could also affect the questions used by interviewers.

Given preschoolers' still developing cognitive abilities, it is essential to establish whether the effects of different question types generalize to the youngest group of potential crime victims. Like older children, preschoolers report more details in response to open-ended questions than other question types (Gagnon & Cyr, 2017; Lamb et al., 2003; Hershkowitz et al., 2012). Specifically, young children appear to benefit the most from cued-recall and open-ended directive questions compared with broad invitations asking them to elaborate freely (Gagnon & Cyr, 2017; Marchant, 2013). In a field study examining 299 forensic interviews with preschoolers, children aged 5 to 6 years produced the most details in response to invitations compared with other question types (Hershkowitz et al., 2012). However, children aged 3 to 4 years reported the most details in response to directive questions, indicating that young preschoolers may need additional guidance with more specific open-ended questions.

As preschoolers have more limited memory retrieval strategies and narrative skills, they need more guidance and prompting from the interviewer to search for information

and structure their narratives (Gagnon & Cyr, 2017; Poole et al., 2015). Furthermore, questions directed to preschoolers should be phrased using simplified language that matches their linguistic abilities (Korkman, Santtila, Drzewiecki, & Sandnabba, 2008a). Similarly, preschoolers tend to be more responsive to questions containing shorter sentences rather than longer and more complex sentences (Korkman, Santtila, Westeråker, & Sandnabba, 2008b). If preschoolers do not know the answer to a question, they may repeat the phrase used by the interviewer, guess the answer, or talk about something else either related or unrelated to the question at hand (Poole, Dickinson, & Brubacher, 2014). Furthermore, preschoolers tend to interpret questions on a concrete level. Hence, more abstract utterances or phrases involving implied social rules (e.g., 'Could you tell me about…') may be too difficult and could elicit brief or unreliable responses from preschoolers (Hardy & Van Leeuwen, 2004; Lyon et al., 2014). Similarly, complex terminology can confuse young children and should be avoided (Korkman et al., 2008a). This is particularly important as preschoolers often do not ask for clarifications, correct adults, or point out misunderstandings during investigative interviews (Lamb et al., 2011).

Table 1. Overview of question types.

Question types	*Definition*	*Example*
Invitations	Broad open-ended questions encouraging children to engage in free recall	'Tell me everything that happened'
Cued recall prompts	Broad open-ended questions encouraging children to elaborate on specific details mentioned by the child	'You said a dog walked by, tell me more about the dog.'
Directive questions	Open-ended questions prompting for specific information (e.g., who, what, where, when, and how)	'What did the dog look like?', 'Where did you see the dog?'
Facilitators	Brief utterances used to convey active listening and facilitate conversation	'uh-huh', 'okay', 'mhm'
Summaries	Summaries of information the child has recalled previously during the interview	'You said before that you saw a dog.'
Option-posing questions	Close-ended questions with two or more response options	'Was the dog big or small?'
Closed yes/no questions	Close-ended questions that can be answered with yes or no	'Did the dog have black fur?'
Suggestive questions	Questions that introduce new information and suggest a specific answer	'I bet it was scary to meet the dog, wasn't it?'

Note. The above question categories are adapted from Lamb et al. (1996, 2018) and Melinder et al. (2020)

Using breaks

Child interviewing protocols often include the option to use one or more breaks during an interview. Breaks can be placed at different times in the interview protocol. Some guidelines advise taking a break after the initial pre-substantive phase (Langballe & Davik, 2017), whereas other techniques place the break in the middle of the substantive phase (Lamb et al., 2008). Researchers often advise flexible use of breaks depending on how the interview is going and the need of the individual child (Poole, 2016). In the Nordic countries where children are not heard in court, breaks are essential because they allow the forensic interviewer to step out of the interview room to discuss their interview strategy with the other practitioners involved in the case (e.g., the prosecutor and defence attorney). A break can help children get some time away from questioning to collect their thoughts and potentially recharge their energy (Saywitz & Camparo, 2014). In classroom settings, the use of breaks has, for example, been associated with increased attention levels among preschool-aged children (Holmes, Pellegrini, & Schmidt, 2007). Few witness studies have examined the use of breaks with young children. In a field analysis of 40 investigative interviews with alleged CSA victims, children aged 6 to 13 years were interviewed across two substantive sessions with a 30-minute break in between (Hershkowitz & Terner, 2006). During the break, the children were asked to do some drawing. Notably, children provided around 24% new details after the break, with a majority of the details being classified as comprising central information about the event. Since this was a field study, the accuracy of details could not be assessed.

Using props

Practitioners sometimes use props during interviews with children. The use of props can be divided into four categories (Poole, 2016):

1. *Comfort techniques.* Props are used to make children feel more at ease with the interview situation. This category includes comfort drawings (i.e., free

drawings used to comfort the child), stress-reduction tools (e.g., fidget toys), and rapport-building objects (e.g., jigsaw puzzles).

2. *Assessment techniques.* Props are used to assess the child's cognitive or verbal level. This category, for example, includes the use of body diagrams to explore children's words for different body parts.
3. *Communication techniques.* Props are used to facilitate children's communication by eliciting disclosure or providing non-verbal communication paths (e.g., point and draw). This category, for example, includes the use of anatomical dolls or body diagrams to elicit initial reports of touching.
4. *Clarification techniques.* Props are used to clarify different parts of the child's account. This category, for example, includes the use of anatomical dolls or body diagrams to clarify a previously reported touch by an alleged perpetrator (e.g., 'You said that he touched you on your leg, can you show where so I can understand?')

For decades, the use of props during child interviews has sparked debate among researchers and practitioners. It is sometimes argued that certain types of props can be a nonverbal method to facilitate children's communication by, for example, pointing to something or demonstrating on a prop (e.g., using an anatomical doll, see Poole and Bruck, 2012, for a review of this topic). Other types of props, such as drawings and crime scene photographs, may function as memory retrieval cues with the purpose of evoking more information through context reinstatement effects (Lamb et al., 2018; Mattison & Dando, 2020). However, researchers have expressed concern regarding the value of using certain props as a communication technique during the substantive phase of child interviews. While props such as dolls and diagrams do seem to increase the number of details reported by children, controlled laboratory studies show that prop-assisted interviews tend to be associated with higher risks of inaccurate details (e.g., Melinder et al., 2010). Props may also be distracting or encourage play among younger children (Goodman & Melinder, 2007). The use of props also places higher demands on the competence of the interviewer. In the following sections, I will briefly discuss the most studied prop types use in child interviewing settings (i.e., anatomical

dolls, body diagrams, and drawings). I will also briefly describe the use of rapport building props.

Anatomical dolls and body diagrams

The most examined prop in forensic settings is the anatomical doll. In the 1970s, the prop gained traction in forensic and clinical settings involving CSA investigations (Poole & Bruck, 2012). After a number of high-profile legal cases involving the use of anatomical dolls with young children (e.g., the McMartin case), researchers started to investigate whether anatomical dolls could influence the reliability of young children's reports. Studies show that while the use of dolls may increase the overall number of details provided by children, the accuracy of children's reports decreases (Poole & Bruck, 2012). Several factors may help explain these findings, including that forensic interviewers tend to use more suggestive questioning strategies when employing dolls and that young children start to play with the dolls (e.g., Santtila, Korkman, & Sandnabba, 2004).

Body diagrams refer to figure drawings of a child or an adult (either with or without clothing). Body diagrams can be used to inquire about touching ('Where did he touch you?') or as a way to help children clarify their reports about touching ('You said he touched you on the arm, can you show where on the arm he touched you?'). The use of body diagrams can increase the number of details reported by children, but also decreases the accuracy level of children's statements. Bruck, Kelley, and Poole (2016), for example, found that many young children interviewed about a medical examination falsely reported details about touching (aged 3 years = 50%, aged 4 years = 33%) when interviewed using body diagrams. Other studies have shown that interviewers tend to use fewer open-ended invitations and more directive questions when using body diagrams (Salmon, Pipe, Malloy, & Mackay, 2012; Teoh et al., 2010). This could, in turn, have a negative impact on children's report accuracy.

The use of two- and three-dimensional objects such as body diagrams and dolls requires certain insights regarding the representation of these tools as symbols of a the child's own body or the body of someone else. Representational insights into these so-called *dual representational demands* are abilities that develop gradually during

childhood (DeLoache, 2000). For example, in two experiments by Lytle, London, and Bruck (2015), 3- to 5-year-old children were asked to put small stickers on body diagrams, dolls, and an adult researcher, to show where larger stickers had been placed on their own bodies. Notably, the children, and particularly the 3-year-olds, had difficulties with this task, indicating that their symbolic representational abilities were limited when it came to conveying touch details onto two- and three-dimensional objects. These experiments show that even under ideal conditions, preschoolers have difficulties using dolls and diagrams. Consequently, there is clear reason to question whether these types of props are developmentally sensitive and suitable for use with young children as a method to elicit touch information.

Drawing

Drawing is sometimes used during forensic interviews with children and adults. The technique can have a range of purposes such as building rapport, facilitating memory retrieval, helping communicate spatial information, and even detecting deceit (Mac Giolla, Granhag, & Vernham, 2017; Mattison & Dando, 2020). The most researched drawing procedure with children is the 'draw-and-talk' technique (Butler et al., 1995) in which children are asked to draw while simultaneously describing an event. Using the draw-and-talk technique when interviewing children about a self-experienced event has led to improved productivity (i.e. total number of reported details) without a decrease in accuracy (e.g., Driessnack, 2005; but for exceptions, see Salmon et al., 2012; Teoh & Chang, 2018). Several underlying mechanisms have been suggested, including that drawing encourages children to generate memory retrieval cues, extends the time children are talking, and uses a format that could facilitate the disclosure of specific details that might be overlooked in a verbal-only report (e.g., Butler et al., 1995; MacLeod, Gross, & Hayne, 2013). However, few studies have examined the effects of the draw-and-talk technique with young preschoolers. The aim of Study V was to address this gap in the literature.

Rapport building props

Research is scarce regarding other props intended to facilitate rapport-building during the pre-substantive phase of interviews with children (Lamb et al., 2018). In Study III, we examined the use of two different rapport building strategies including a collaborative jigsaw puzzle activity. To our knowledge, only one laboratory experiment has been conducted comparing the use of collaborative rapport building props (i.e., jigsaw puzzles, building blocks, and handicrafts) with asking questions about neutral topics during rapport building or having no rapport building (control condition). In a dissertation, Collins (2012) described how children aged 8 to 10 years provided more information after a prop-based rapport phase compared with the control condition without any rapport building. Considering that the use of collaborative props during rapport building with preschoolers has recently been implemented in Scandinavian field settings (Langballe & Davik, 2017; Prosecution Authority, 2018), further research is needed to better understand the potential effects of this strategy on children's statements. Study III was designed to contribute to this aim by comparing the use of a collaborative rapport-building prop (i.e., a jigsaw puzzle task) with verbal rapport building in which interviewers asked questions about the children's personal interests.

Forensic child interviewing techniques

Early studies of child interviewing quality across different countries, for example, Sweden (Cederborg, Orbach, Sternberg, & Lamb, 2000), Norway (Thoresen, Lønnum, Melinder, Stridbeck & Magnussen, 2006), and Finland (Santtila et al., 2004), showed that forensic interviewers frequently employed non-recommended question strategies involving close-ended questions and suggestive techniques. These worrisome findings helped drive the development of different research-based child interviewing techniques to minimize the risk of suggestive influence and to facilitate children's disclosures. Today, there is a plethora of interviewing techniques and guidelines developed for this purpose (see Faller, 2015, for an overview). In the following sections, I will focus on the interviewing method currently used in Sweden (see Cederborg, Alm, da Silva Nises, & Lamb, 2013), which is a more flexible version of the NICHD

protocol (Lamb et al., 2008). I will then describe a novel approach to interviewing preschoolers that was recently developed and implemented in Norway; the sequential interview model (Langballe & Davik, 2017).

Child interviewing in a Swedish context (the NICHD protocol)

The Swedish police have, during the last decade, been offered specialized training in an adaptation of the National Institute of Child Health and Development (NICHD) interview protocol (Cederborg et al., 2013). The NICHD protocol is a widely used research-based child interviewing technique that was initially field tested in Israel (Orbach et al., 2000). Different versions of the technique have now been implemented in at least 14 countries around the world (La Rooy et al., 2015). The technique uses a semi-structured interview format with complementary step-by-step instructions for eliciting testimony from children of different ages (the following description of the NICHD protocol is based on Lamb et al., 2008).

In brief, the original NICHD protocol divides the interview into three parts: the pre-substantive phase, the substantive phase, and the closure phase. The pre-substantive phase begins with an introduction, explanation of ground rules (e.g., that the child can say 'I don't know' and 'I don't understand'), and a rapport building phase in which the interviewer asks questions about personal interests or hobbies. This is followed by a practice narrative phase in which the child is asked to describe an event in detail. The interviewer then transitions to the substantive phase of the interview by asking open-ended questions about the incident (or incidents) under investigation and encouraging the child to elaborate (e.g., 'Tell me more'). The use of specific questions should be postponed if possible, and the use of suggestive or leading questions should, if possible, be avoided. After gathering an account from the child, the protocol encourages interviewers to ask questions regarding prior informal disclosures. During the closure phase, the interviewer should end with discussion of a neutral topic and leave the door open for future communication. See Figure 3 for an overview.

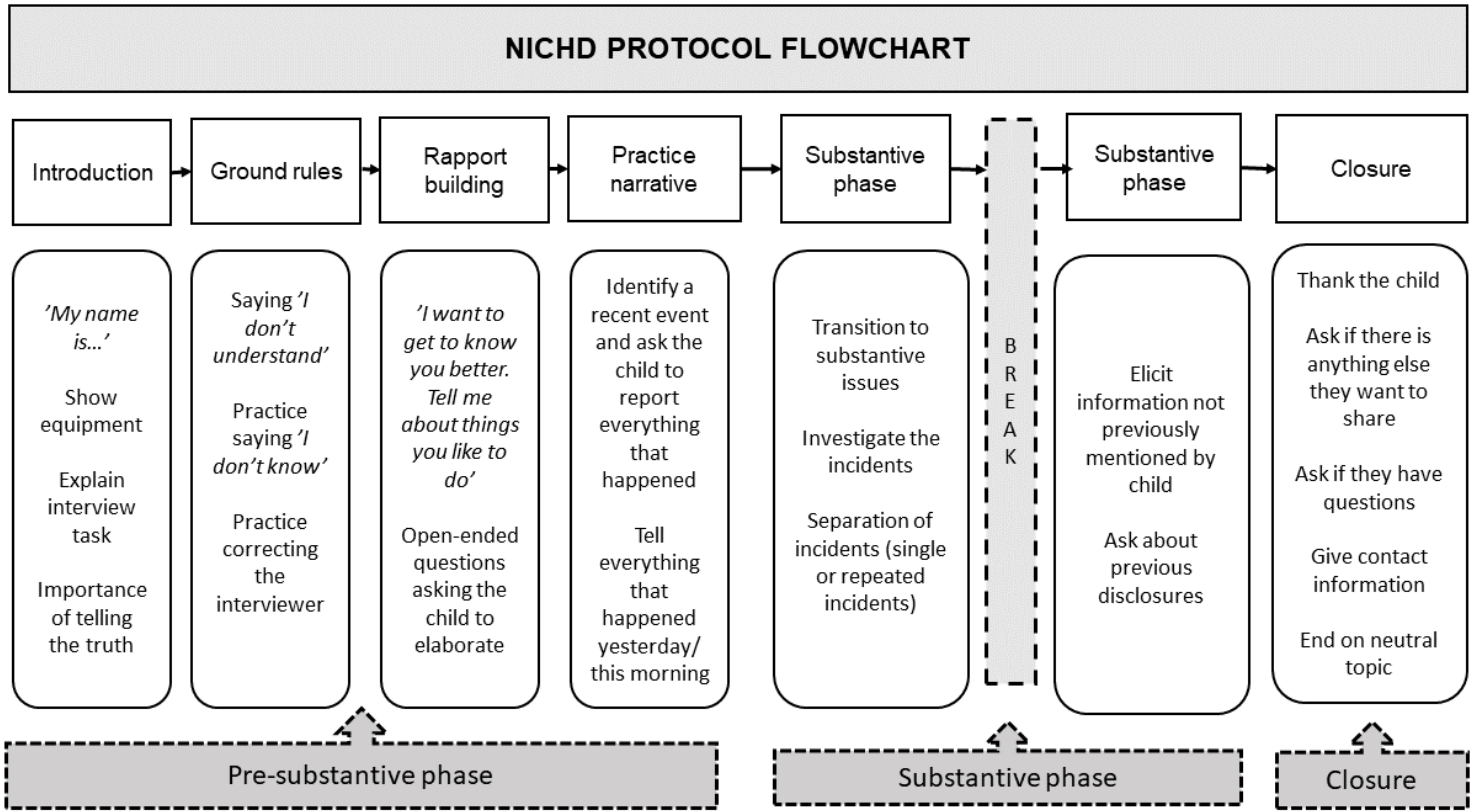
A substantial number of field studies indicates that interviewers tend to use more open-ended questions and fewer option-posing or suggestive questions when following the NICHD protocol compared with before training (Benia et al., 2015). Similar

results have been reported in two field studies examining the Swedish adaptation of the NICHD protocol (Cederborg et al., 2013; Cederborg, Lindholm, Lamb, & Norrman, in press). Meta-analytical findings on the effects of using the NICHD protocol with preschool-aged children have shown more varied results (Benia et al., 2015). Forensic interviewers from Israel have also described conflicting feeling about using the NICHD protocol with preschool-aged children (Katz & Kosher, 2020). During focus groups with 90 Israelian interviewers (out of 105 interviewers across the country), the practitioners expressed frustration regarding their obligation to adhere to the protocol with young children. According to Katz and Kosher (2020, p. 4); '*the professional tool that was meant to enhance preschoolers' participation in the process was, in reality, not developmentally appropriate for them. The result was much frustration on the part of both the forensic interviewers and the children.*' Concerns have also been raised regarding the methodological limitations of past studies on the protocol, including the lack of control groups and the exclusion of data when interviewers do not follow the NICHD protocol after training (e.g., Benia et al., 2015; Magnusson et al., 2017b).

Recently, major revisions of the NICHD protocol have been carried out. The revised NICHD protocol places an increased emphasis on interviewer supportiveness and rapport building strategies to help children overcome reluctance (Lamb et al., 2018). Several field studies have compared the original and revised NICHD protocols, with promising results in support of the latter (e.g., Ahern, Hershkowitz, Lamb, Blasbalg, & Winstanley, 2014; Hershkowitz, Lamb, & Katz, 2014). During data collection for this thesis, the full version of the revised NICHD protocol had not been implemented in Swedish settings.[1] This recently changed, and at the time of writing (September 2020), a flexible version of the revised NICHD protocol is now a part of the Swedish child interviewing course curriculum.

[1] However, some components regarding how to provide socio-emotional support through supportive statements was implemented in 2014 (Cederborg et al., in press)

Figure 3. Example timeline of an NICHD interview.



Child interviewing in a Norwegian context (the SI model)

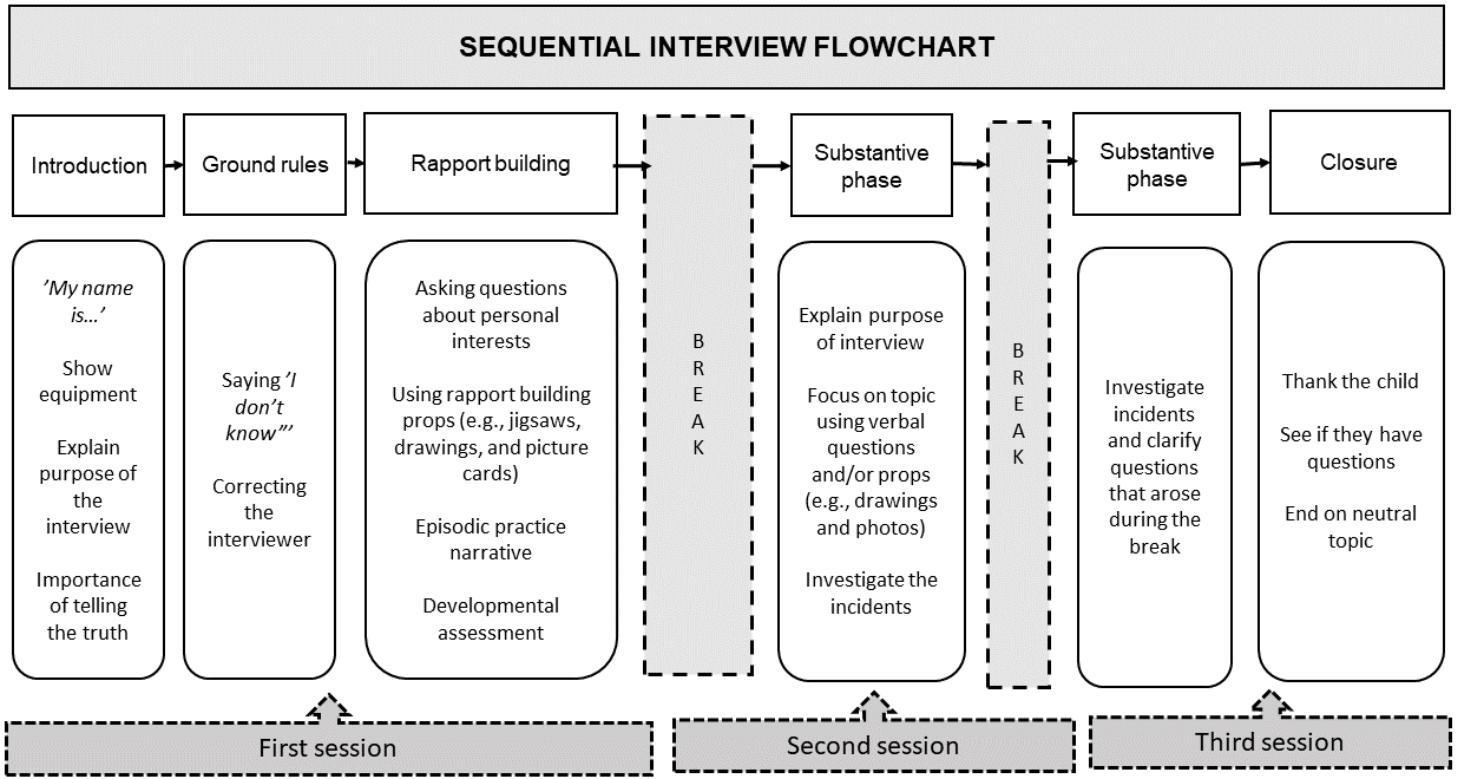
In October 2015, Norway changed its legislation regarding criminal investigations involving children. One of the results of this reform included the implementation of a new technique for interviewing preschool-aged children: the sequential interview (SI) model (Langballe & Davik, 2017). A team of legal practitioners and researchers created the SI model, which was partially influenced by an American technique called the extended forensic interview (Carnes, Nelson-Gardell, & Wilson, 1999; for reviews see Connell, 2009 and Magnusson, 2017). The team adapted the extended forensic interview model to fit the Scandinavian context and combined it with the technique used during Norwegian interviews with school-aged children: the dialogical communication model (Gamst & Langballe, 2004).

The sequential interview model has several distinct features that allow the adaptation of each interview to reflect young children's needs and abilities (see Langballe & Davik, 2017, for a detailed description of the SI model). First, the model builds on sequentialization. The interview is segmented into different sequences (each approximately 10–20 minutes long) with breaks after each (see Figure 4 for an overview). During the breaks, the interviewer consults other practitioners involved in the case (e.g., prosecutor, defence attorney, and child psychologist) who have observed the interview via a one-way video link. Collaboratively, the practitioners develop a strategy for the next sequence. Beyond the sequences within an interview, the method acknowledges that child abuse victims often require repeated interviews, so scheduling two or three sessions is recommended. Another central feature of the SI model, relevant to this thesis, is its broad focus on rapport building. The first sequence of an interview contains both verbal questions about personal interests and calm play activities to establish cooperation and trust. Interviewers are encouraged to combine the use of different props such as jigsaw puzzles or drawings with open-ended questions about the tasks. If further rapport building is deemed necessary before transitioning to the substantive phase of the interview, the rapport building phase can be expanded for several sequences (or even for the entire first interview).

The SI model was recently assessed in a large-scale study, including police interviews with 207 preschoolers in prosecuted legal cases (Baugerud et al., 2020, see also

Melinder, Magnusson, Ask, Gilstrap & Landström, in press, for another perspective on the findings). The most common question type used by the interviewers was facilitators, which accounted for 64.5% of all utterances. When the researchers excluded the facilitators, the most common utterances were directive questions (43–44%) followed by option-posing questions (36–40%), suggestive questions (13–19%) and open-ended invitations (2–3%). The youngest preschoolers were asked significantly fewer questions than were older preschoolers. Furthermore, forensic interviewers often used props during the SI model interviews, including jigsaw puzzles and drawing material (Baugerud et al., 2020). Most preschoolers (between 87.9 and 92.5%) made an allegation during their interviews. Age was not significantly associated with the frequency of allegations. However, the children's accuracy could not be assessed due to the lack of ground truth in field research. The aim of Study IV in this thesis was to conduct the first experimental test of the SI model in a controlled laboratory setting. Specifically, we aimed to study effects following the pre-substantive phase of the interview. For our comparison condition, we used the original NICHD protocol to explore differences between the two techniques in preschoolers' witness performance.

Figure 4. Example timeline of an SI interview.



Summary of studies

The studies included in this thesis were intended to shed light on various aspects of the forensic interviewing of preschool-aged children. Study I consisted of a survey of Swedish police employees about their experiences when conducting interviews with children of different ages and about their self-reported adaptations of their interviewing strategy when questioning preschoolers. The main aim was to explore practitioners' views of central interview components (e.g., ground rules, rapport building, prop use, and question types) and to identify challenges encountered with different age groups (preschool, school-aged, and adolescent witnesses). Study II entailed a descriptive overview of preschoolers' informal and formal disclosures of CSA in court cases with strong corroborative evidence. The purpose was to provide knowledge of young children's disclosure tendencies and to examine whether previously identified factors that can influence child disclosures apply to cases involving young children.

Study III consisted of a laboratory experiment examining 53 preschoolers' disclosures of an unfamiliar adult's transgression (breaking a toy). The focus was on examining the effects of rapport building strategy, child age, and question types on the children's statements. Study IV comprised two controlled experiments examining 129 preschoolers' witness reports about a self-experienced (Exp. I) and non-experienced (Exp. II) event. The children were interviewed using the pre-substantive phase of the sequential interview model (Langballe & Davik, 2017) or the original NICHD protocol (Lamb et al., 2008) to assess differences between the two child interviewing techniques in terms of the children's accuracy and number of details. Lastly, Study V consisted of an experiment investigating 108 preschoolers' statements about experienced (Part I) and non-experienced (Part II) events as a function of using drawings to facilitate their witness accounts.

Study I

The purpose of the first study was to examine Swedish police employees' experiences of conducting interviews with children of different ages and to explore their self-reported adaptations of their interviewing strategies when questioning preschoolers. A secondary aim was to measure their views of different interviewing components of the NICHD protocol and their attitudes towards prop use, including drawing and other types of interview tools. The study was pre-registered on the Open Science Framework.

Method

The study comprised a mixed-methods electronic survey of Swedish forensic interviewers regarding their experiences of conducting child interviews. The survey contained five sections relevant to the present study:

1. Demographic information about training and experience
2. Views regarding different interviewing components
3. Views regarding prop use
4. Adaptations when questioning preschoolers,
5. Challenges when interviewing children of different ages (preschool-aged, school-aged, and adolescents).

The responses were analysed using both quantitative (i.e., descriptive and inferential statistics) and qualitative (i.e., content and thematic analyses) approaches. The survey was distributed to forensic interviewers across Sweden via contact with coordinators in the seven police regions, e-mail requests to contact persons at different Barnahus facilities, social media advertisements, and verbal information about the survey provided during a national police conference for child interviewers.

A total of 88 specialist forensic interviewers responded to the survey (75 women and 7 men, 6 did not report their gender, M_{age} = 45.26, SD = 9.06, Age range: 26 to 64 years). Their experience of conducting child interviews varied between 1 and 20 years, with a mean of 6.45 years (SD = 4.62, median = 6 years). According to estimates from a recent report by the Prosecution Development Centre (2016), our sample represents

nearly a third (29%) of the population of active child interviewers in Sweden. Due to the varied recruitment methods, we were unable to calculate an overall response rate.

Results

The practitioners' self-reported ratings regarding the frequency of use and the perceived importance of the different interviewing components were largely in line with current research recommendations. We observed no significant differences between participants who had finished their interviewing training in the adapted NICHD protocol and those who had not. However, it should be noted that the statistical analyses were underpowered due to the small number of participants who had not completed their training (n = 19). We did find two significant negative correlations between experience conducting child interviews (years) and (i) the frequency of use of the narrative practice phase and (ii) the perceived importance of the narrative practice phase (r_s = – .309, p = .004, and r_s = – .319, p = .003, respectively). Prop use was primarily limited to drawings, photographs, and stress-reduction tools.

The forensic interviewers reported using many different strategies to adapt their existing methods when questioning young children. These included different modifications of the pre-substantive phase of the interview to prevent fatigue, including removing or modifying the ground rules and episodic practice narrative. The interviewers described a range of challenges encountered when interviewing preschoolers (e.g., time pressure and the interviewees' limited verbal abilities), school-aged children (e.g., being protective of parents, guilt, and shame), and adolescents (e.g., negative attitudes and loyalty to friends and family). Preschoolers were described as particularly challenging to interview due to their limited verbal skills, short attention spans, and insufficient memory abilities. Time pressure was the most commonly reported interview challenge (31.1%) with this age group, followed by concerns regarding how to transition to the substantive phase of an interview (14.3%), experiencing that preschoolers had difficulties responding to broad open-ended questions (13%), and finding the balance between asking specific questions without being leading (11.7%). The practitioners also discussed different legal challenges related to preschoolers' testimony, specifically that preschoolers have difficulties describing specific forensic details (e.g., the time and

location of a crime) and often provide brief and incoherent reports. Some participants were also concerned that preschoolers have difficulties meeting the credibility criteria used by Swedish courts, stipulating that credible testimony should be clear, long, and rich in detail.

Study II

The aim of the second study was to examine preschoolers' disclosure tendencies in connection with police investigations concerning CSA. The study comprised a multiple-case analysis of convicted legal cases involving 57 preschoolers. All cases contained external corroborative evidence that substantiated the abuse allegation (e.g., DNA evidence, and photos or videos of the abuse). Using qualitative and quantitative analytical approaches, we investigated preschoolers' disclosure rates, delays until disclosure, aspects facilitating or impeding disclosure, and court assessments of the children's disclosure during their police interviews. The focus was on the children's first informal disclosures (e.g., to a parent or preschool teacher) and their formal disclosures to the police. We hypothesized that children who made an informal disclosure would be more likely to make a formal disclosure than would children who had not made an informal disclosure (Hypothesis 1), that victims of repeated abuse would delay their disclosure for longer than would victims of a single occasion of abuse (Hypothesis 2), and that victims of intra-familial abuse would exhibit longer disclosure delays than would victims of extra-familial abuse (Hypothesis 3). Using thematic analysis (Braun & Clarke, 2006), we explored facilitators of and barriers to children's disclosure and examined how the preschoolers' disclosures during their police interviews were described.

Method

The analyses were based on textual material found in written court verdicts (i.e., official documents produced after the trial that provided information regarding the basis for the judicial decision of the court; Swedish Code of Judicial Procedure, chap. 30 par. 5.). All court verdicts of substantiated sexual abuse of a preschooler were extracted from a larger data-set containing Swedish verdicts of alleged CSA from 2010

to 2014. A total of 37 District Court cases involving 57 preschool-aged children (53 girls, 4 boys) were identified. The children were between 2 and 6 years old at the onset of abuse (M = 4.3, SD = 1.2) and between 3 and 7 years old at the time of their police interview (M = 5.3, SD = 1.2). The archival data were quantified following an extensive coding manual, including 142 variables per district court case (for a detailed description, see Ernberg et al., 2018a). For the qualitative analyses, all textual material relating to the police interview and the children's disclosures was extracted and coded using a descriptive and data-driven thematic analysis approach (Braun & Clarke, 2006; Miles & Huberman, 1994).

Results

Two-thirds of the children (66%) had disclosed the abuse before their police interview. The most common informal disclosure recipients were the children's mothers or preschool teachers. Children who had made an informal disclosure were significantly more likely to disclose during their police interview than were children who had not made an informal disclosure. According to the verdicts, 83.7% provided some piece of information about the abuse during their police interview. Among the children who did disclose abuse, many delayed their first disclosure. We found that 18.6% disclosed directly after the first incident of abuse and that another 46.5% disclosed within a year; however, 16.3% disclosed first within two years, 11.6% within three years, and 7.0% waited longer than three years before their first disclosure. In line with our hypotheses, children who had fallen victim to repeated abuse and victims of intra-familial abuse were more likely to delay their disclosure for more than one year.

The most common facilitator of disclosure was if someone asked the child direct questions regarding the abuse or indirect questions about, for example, whether something was wrong. Support from another victim, at times, also facilitated disclosures. Several barriers were identified that could hinder or delay disclosure, including requests from the abuser for secrecy, loyalty to the abuser, internal feelings of shame or guilt, fear of upsetting a non-abusive caregiver, and language difficulties. Furthermore, some children had tried to tell someone but were not believed.

The information in the court documents regarding the children's formal disclosures during their police interviews could be organized into three categories: *direct disclosures*, *reluctant disclosures*, and *non-disclosures*. Children who disclosed directly during their first forensic interview had typically disclosed informally beforehand. Furthermore, direct disclosures were often associated with descriptions of the spontaneous delivery of details. According to the court documents, children who disclosed reluctantly often displayed emotional difficulties or distress during their police interview. Some did not disclose all the instances of abuse. Reassurances regarding these children's fears, direct questions, and repeated interviews were at times necessary before a disclosure was elicited. Lastly, eight children did not disclose the abuse to the police. The courts reasoned that developmental barriers and memory encoding difficulties had hindered disclosure in some of these cases.

Study III

The third study aimed to investigate preschoolers' reports about a secret as a function of rapport building strategy, child age, and question types. Specifically, this study consisted of a laboratory experiment examining preschoolers' disclosures of a secret involving an unfamiliar adult's transgression in the form of breaking a toy. Two different rapport building strategies used in Scandinavian field settings were included in the design: asking questions about personal interests versus asking questions about a jigsaw puzzle task. We hypothesized that there would be a difference in the disclosure rates (H1a), number of details (H1b), accuracy (H1c), and proportion of central details (H1d) between the two rapport conditions. Due to a lack of past research on the topic, we chose to employ non-directional hypotheses. Young preschoolers, when compared with older preschoolers, were expected to be more likely to disclose the secret due to a limited understanding of secret-keeping (H2a). However, based on past research on preschoolers' witness abilities, we predicted that older preschoolers would provide more details (H2b), be more accurate (H2c), and report proportionally more central details (H2d) about the toy-breaking incident than would younger preschoolers. Lastly, we explored the children's disclosure tendencies in relation to different question

types during the substantive phase of their interviews. The study was pre-registered on the Open Science Framework.

Method

In line with previous research, we employed the broken toy paradigm to examine children's disclosures of secrets involving adult wrongdoing (e.g., Bottoms et al., 2002). Fifty-three children aged 2 to 6 years (M = 60.5 months, SD = 11.04, range 33–76 months) witnessed a male research assistant break a toy (a soap bubble machine) and were asked to keep the incident secret (see Figure 5). The children were then interviewed about the event by one of ten female research assistants following a structured interview guide. Importantly, all children included in the analyses assented to be interviewed and had written parental consent to participate. During the initial stage of their interviews, the children were randomly assigned to participate in one of the two rapport building conditions. Half of the sample was asked open-ended questions about their personal interests (henceforth, 'verbal rapport condition') and the other half was asked open-ended questions regarding a jigsaw puzzle task (henceforth, 'prop rapport condition').

Following this, the children were asked a series of progressively more specific questions about the toy-breaking incident using a funnel approach. That is, the children were first asked to report everything that happened (i.e., an open-ended free-recall invitation) and were then asked open-ended follow-up questions. If a child did not disclose the secret after the free-recall invitation, the interviewer asked three more specific questions containing suggestive details to see if the child would disclose the secret in response to any of these topic prompts. The children were then thanked for their participation and debriefed. During the debriefing, the research assistant who broke the soap bubble machine helped repair it and talked to the children about good and bad secrets. The children's video-recorded interviews were transcribed and coded by research assistants unaware of the study hypotheses. An inter-rater reliability analysis of 20% of the material indicated adequate levels of agreement among the coders (Cohen's κ = 0.78–0.99). The data set was analysed using Welsh t-tests and multiple regression analyses.

Figure 5. The toy-breaking incident.

Results

In total, 83.0% of the children disclosed the secret at some point in their interview. However, only 18.9% of the participants disclosed after an open-ended free-recall invitation in which they were asked to report everything that happened ('Tell me everything that happened in the other room?'). When asked the first open-ended specific question containing suggestive details ('I heard something happened with a big suitcase, tell me about that?'), 54.7% disclosed the secret. A few children waited until the third ('A toy broke before, tell me what happened') or fourth ('I heard an adult broke a toy before, tell me what happened') specific question to disclose, 5.6% and 3.8%, respectively. No significant effects were found regarding the rapport building strategy used during the initial phase of the interview. The verbal and prop rapport conditions did not significantly differ in terms of the quality of the children's accounts and disclosure tendencies. As expected, older preschoolers reported more details than did younger preschoolers, with age (in months) accounting for 25.1% of the explained

variance in the total number of details reported. In general, the children were highly accurate in their reports, with accuracy rates averaging above 90% for both 2- to 4-year olds and 5- to 6-year olds. Furthermore, regression models indicated that age was a significant predictor of the number of accurate details ($p > .001$, $R^2 = 0.28$), but not for the number of inaccurate details (log-transformed due to skewness in the residual distribution, $p = .80$).

Study IV

The fourth study aimed to examine the effects of interviewing technique and age on preschoolers' statements about a self-experienced (Part I) and non-experienced (Part II) event. Specifically, we intended to compare the effectiveness of the pre-substantive phase of the SI model (Langballe & Davik, 2017) and the original NICHD protocol (Lamb et al., 2008) in terms of the number and accuracy of details in preschoolers' accounts. Furthermore, we hypothesized that preschoolers' witness abilities would be age dependent, with older preschoolers providing more details and exhibiting higher accuracy than younger preschoolers regardless of interview technique.

Part I (self-experienced event)

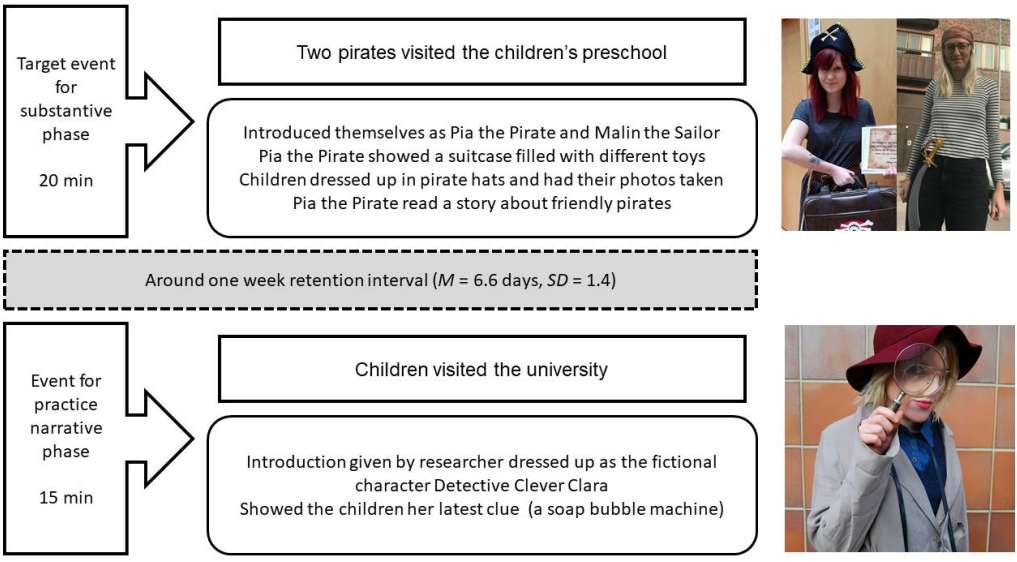
In the first experiment, we interviewed 84 preschoolers about a self-experienced event using the SI model or the NICHD protocol. Due to limited past research on the effectiveness of the two techniques with preschoolers, we used a two-tailed approach to examine differences between interviewing conditions in terms of children's productivity and accuracy. We expected to observe positive age trends, with older preschoolers providing more detailed and accurate reports.

Method

All preschools in the Gothenburg area were invited to take part in studies IV and V in connection with annual Science Fairs during 2018 and 2019. Nineteen preschools chose to participate in the experiment. Of the 168 children initially scheduled to take

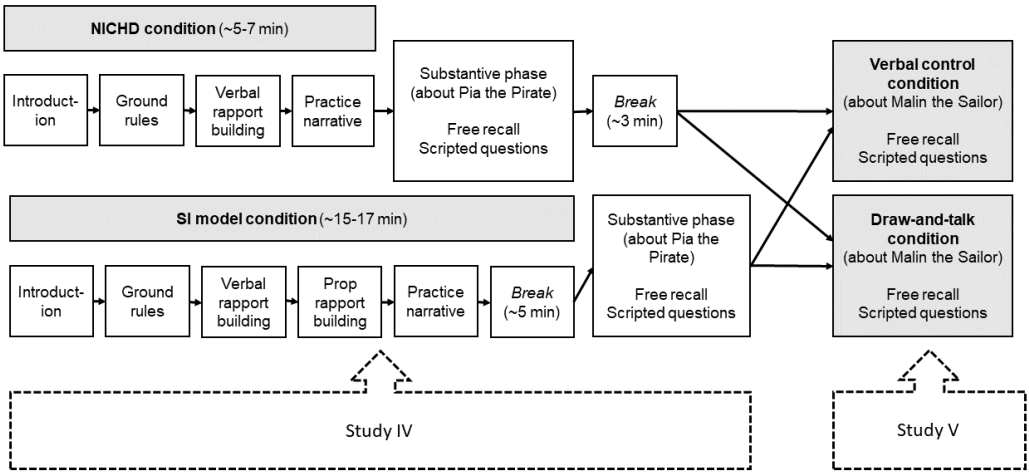
part, 88 children had written parental consent to participate and gave their verbal assent on the day of their interview. Four children were excluded from the sample due to deviations from the interview guide. The analyses are thus based on a sample of 84 preschool-aged children (53 girls and 31 boys, M_{age} = 61.7 months, *SD* = 8.75, range 42–75 months). Approximately one week before their interviews, the children took part in a staged event at their preschools that involved interacting with two adults dressed as the fictional characters 'Pia the Pirate' and 'Malin the Sailor'. During the event, the children got to dress up in pirate hats and have their pictures taken with the pirates (to simulate cases of sexual posing, see Brown et al., 2013). The pirates also showed the children a suitcase filled with different toys and read a story about friendly pirates searching for treasure. The pirate event took 20 minutes. Around one week later, the children arrived in small groups at the university for their interviews. Before their interviews, the children took part in a second staged event involving interacting with a researcher dressed up as the fictional character 'Detective Clever Clara' and playing with her soap bubble machine. During the practice narrative phase of the children's interviews, they were asked to describe their interaction with Clever Clara to ensure that all children discussed the same event. See Figures 6 and 7 for an overview.

Figure 6. Overview of the staged events.



The children's interviews were conducted by one of ten research assistants who were naïve as to the study hypotheses. We randomly allocated the children to the interviewing conditions, with 45 children (M = 62.8 months, SD = 8.6, 26 girls) in the NICHD condition and 39 children (M = 60.3 months, SD = 8.87, 27 girls) in the SI model condition. During the substantive phase of their interviews, the children were asked to give a free recall and respond to scripted questions about meeting Pia the Pirate. All interviews were video-recorded and transcribed verbatim. Trained research assistants coded the verbal content of the transcripts for the number and accuracy of details. Inter-rater reliability for 20% of the material was at an adequate level (Cohen's κ = .83–.87). The data-set was analysed using Welsh t-tests, hierarchical regression, Chi-square tests, and Fishers' exact test.

Figure 7. Overview of the data collection for studies IV and V.



Results

We found no significant difference in the number of details (log10 transformed) reported by children interviewed using the SI model and the NICHD protocol. However, we did observe a significant difference between conditions in children's accuracy

rates (logit transformed). Children interviewed using the NICHD protocol (M_{raw} = .86, SD = .10) exhibited slightly higher accuracy rates than did children interviewed using the SI model (M_{raw} = .79, SD = .15), $t(81.999) = 2.75$, $p = .007$, Hedges' $g = 0.59$, 95% CI [0.15, 1.03]. Child age in months was significantly associated with both the number ($b = 0.03$, $\beta = .255$, $p = .008$) and accuracy of details ($b = 0.03$, $\beta = .255$, $p = .008$) when controlling for interview condition, with older preschoolers outperforming the younger preschoolers. There were no significant interaction effects between age (in months) and interviewing technique ($p > .05$). During their interviews, some children (14.3%) provided worrisome false details that contained aggressive themes, including being stabbed by a sword and watching the pirate cutting someone across the throat.

Part II (non-experienced event)

The second experiment of Study IV aimed to examine whether children's accounts of a non-experienced event would differ as a function of the two interviewing techniques (i.e., the NICHD protocol versus the SI model). Specifically, we explored whether there would be a difference in terms of the false assent rate (H1) and the number of false details (H2) between the two conditions. Due to skewness and substantial ceiling effects in the number of false details, we were unable to study potential associations with child age in this experiment.

Method

The sample consisted of forty-five children (24 girls and 21 boys, M_{age} = 64.8 months, SD = 8.2, age range 47–81 months) recruited from 17 preschools in Gothenburg during the annual science fairs of 2018 and 2019. None of the children had participated in the pirate event. The children were separately interviewed by one of eleven research assistants (RAs) following the same interviewing guidelines (i.e., SI model vs. NICHD protocol) as in the previous experiment. Written parental consent and children's assent were obtained before the interviews. The children's interviews were video recorded and transcribed verbatim. Two RAs coded the verbal content of the children's accounts in terms of (i) whether or not the child falsely assented to witnessing the

pirate event (having met the fictional character 'Pia the Pirate') and (ii) the number of false details reported. An inter-rater reliability analysis of 20% of the material indicated an adequate agreement level (Cohen's κ = .86–.94).

Results

Approximately one-third of the sample (31.1%) falsely assented to witnessing the pirate event (that they had not actually experienced). We found no significant difference in terms of false assent rates between the SI model (8 of 22 children assented) and NICHD protocol (6 of 23 children assented). The children reported an average of 17.5 false details (*SD* = 44.6, range 0–185), with a mean of 21.4 (*SD* = 52.8, range 0–185) in the SI model condition and 13.8 (*SD* = 35.7, range 0–155) in the NICHD condition. However, there were large floor effects in both conditions, with most of the children reporting no false details (31 of 45 children). Seven (15.5%) of the children (3 in the SI model condition and 4 in the NICHD condition) gave a long false report that included more than 40 false details about meeting the fictional pirate character. Some of the false reports were highly vivid and contained plausible but incorrect information about meeting an adult dressed as a pirate.

Study V

The fifth study aimed to test the potential benefits and risks of asking young children to draw and talk (Butler et al., 1995) while describing an experienced (Part I) and non-experienced (Part II) event. Although the draw-and-talk technique (Butler et al., 1995) is one of the more promising lines of research into facilitating children's witness reports, research is scarce regarding the efficacy of drawing during interviews with preschool-aged children. The aim of this study was therefore to examine the potential benefits and risks of the draw-and-talk technique during interviews with preschoolers about self-experienced and non-experienced events.

Part I (self-experienced event)

In the first experiment, 83 preschoolers were interviewed about a staged pirate event (see Figures 6 and 7) using either the draw-and-talk technique or a verbal control condition. Based on previous research, the draw-and-talk technique was predicted to increase the number of details reported by the children (H1). Furthermore, in line with Butler et al. (1995, exp 2), we expected that age would moderate the expected beneficial effect such that the drawing effect would be more substantial for older than younger preschoolers (H2). We also explored whether there would be a difference in accuracy between the draw-and-talk and verbal control conditions. Lastly, we examined whether child age (in months) was associated with preschoolers' productivity and report accuracy.

Method

The analyses were based on a sample of 83 preschoolers from 18 preschools across Gothenburg (53 girls and 30 boys, M_{age} = 62 months, SD = 8.7, range 42–75 months). All children had written parental consent to participate; the children gave their verbal assent before their interviews. The recruitment and interview procedures are described in more detail in Study IV. During the last session of the children's interviews, they were allocated to the draw-and-talk condition or the verbal control condition. The children were then asked to give a free recall and respond to scripted questions about the second character ('Malin the Sailor') from the pirate event. The interviews were video recorded and transcribed verbatim. Research assistants who were unaware of the hypotheses coded the verbal content of the transcripts for the total number and accuracy of details. Inter-rater reliability analyses were conducted on 20% of the material (Cohen's κ = .79–.84). The data set was analysed using hierarchical linear regression, Welsh t-tests, equivalence tests, and non-parametric tests (i.e., Chi-square and Fisher's exact tests).

Results

At odds with our prediction and previous research (e.g., Butler et al., 1995), we found no significant difference between the draw-and-talk and verbal control condition in terms of the total number of reported details (log10 transformed) when controlling for child age, retention interval, and previous interview technique (Study IV) using hierarchical regression. However, the model explained approximately 28% of the variance in the total number of reported details, $R^2_{Adj.} = .277$, $F(4, 77) = 8.76$, $p < .001$. Both age and interview technique were significant predictors. Specifically, older children reported more information, $b = 0.05$, BCa 95% CI [0.02, 0.07], $\beta = .388$, $p < .001$, as did children who had previously been interviewed following the NICHD protocol rather than the SI model, $b = –0.68$, BCa 95% CI [–1.08, –0.31], $\beta = –.339$, $p < .001$. There were no observable interaction effects. With regard to accuracy rates (logit transformed), we again did not observe any significant differences between the draw-and-talk ($M_{raw} = .81$, $SD = .22$) and verbal conditions ($M_{raw} = .78$, $SD = .26$), $t(74.46) = 0.24$, $p = .812$, Hedges' $g = 0.05$, 95% CI [–0.39, 0.49]. A hierarchical linear regression analysis was conducted with age, retention interval, and the drawing manipulation as predictor variables. The model explained 8% of the variance in the children's accuracy rates, $R^2_{Adj.} = .082$, $F(3, 79) = 3.46$, $p < .020$. Specifically, there was a significant positive relationship between age (in months) and accuracy rates, $b = 0.07$, BCa 95% CI [0.02, 0.13], $\beta = .300$, $p = .007$. There was no significant interaction effect between age and the drawing manipulation.

Part II (non-experienced event)

In the second part of Study V, we interviewed 25 preschoolers about a non-experienced (false) event involving meeting a pirate character. Since the police sometimes interview children in unfounded cases about allegations that have not occurred, we wanted to descriptively explore whether the draw-and-talk technique would encourage children to provide false information about something they had not experienced. Due to the limited sample size, we did not conduct any inferential tests on the data.

Method

Children from five preschools across the Gothenburg area participated during the annual science fair of 2019.[2] The analyses are based on a sample of 25 preschool-aged children (15 girls and 10 boys, M_{age} = 65.2 months, *SD* = 8.0, range 47–75 months). None of the children attended preschools where other children had participated in the pirate event from the previous study. When arriving at the university for their interviews, the children first participated in the staged practice narrative event (interacting with 'Detective Clever Clara', see Study IV). The children were then interviewed by one of seven RAs who were unaware of the study hypotheses. All children assented to be interviewed and had written parental consent to take part in the study.

The interviewers followed the interview guideline outlined in Figure 7 until the substantive phase, when the children were asked questions about the non-experienced event (i.e., a pirate visit to their preschool that the children had not experienced). During this phase, the children were first asked two initial prompts ('I heard that you met Pia the Pirate, do you remember that?' and 'Detective Clever Clara said that a pirate came and visited you at your preschool, tell me about that'). These prompts enabled us to exclude children who gave a false report before we had introduced the drawing material. If the child did not begin to elaborate on the non-experienced event, the interviewer proceeded to the drawing phase ('I thought we could try to draw Pia the Pirate together, can you help me with that?') and asked the child to elaborate using open-ended questions. An RA coded the verbal transcripts of the children's reports for the number of false details provided during the drawing phase. An inter-rater reliability analysis was carried out on 20% of the transcripts (Cohen's κ = .83).

Results

Twenty-one children (84%) initially denied experiencing the false event. However, after being asked if they could help the interviewer draw the fictional character 'Pia the Pirate', a total of 13 (61.9%) of the 21 children complied with the request and provided

[2] These data were collected only in 2019, resulting in a smaller sample size than in Study IV, for which the data were collected over two years (2018–2019).

false details. The remaining eight children explained that they could not draw the pirate. The children who did begin to draw reported between 2 and 59 false details (M = 17.0 details, SD = 16.8, Mdn = 10). Stereotypical details about pirates, including their attributes and general appearance, were frequent in the false reports. Most children did not report meeting the pirate themselves but rather described her appearance and actions. However, one girl (aged 75 months) explained during the drawing task that she had heard the pirate in the hallway of her preschool. Worryingly, after being asked to draw the pirate, a boy (aged 71 months) gave a longer false statement about meeting the pirate and sailing in her pirate ship.

General discussion

Young child witnesses are vulnerable in legal contexts. The aim of this thesis was to improve our understanding of the forensic interviewing of preschool-aged children. Specifically, the current studies were designed to:

- Collect and summarize practitioners' perceptions and experiences of conducting investigative interviews with children of different ages (Study I)
- Examine preschoolers' disclosure tendencies in substantiated legal cases concerning child sexual abuse (Study II)
- Interview preschoolers in controlled laboratory experiments to test the efficacy of different interviewing techniques (Studies III to V)
- Study age differences in preschoolers' witness abilities in terms of the number and accuracy of details they report (Studies II to V)

In the following sections, I will discuss different barriers and facilitating factors that can influence preschoolers' witness abilities and disclosure tendencies. The focus will then shift towards the strengths and limitations of preschoolers' testimonies, followed by a discussion of the different interviewing techniques studied in the thesis. Next, I will review the methodological and ethical considerations commensurate with this line of research. Lastly, I will present the potential practical implications of the current findings.

Preschoolers' witness abilities

Collective research efforts over the last four decades have substantially improved our knowledge of preschoolers' witness and recall abilities (Saywitz et al., 2018). By asking practitioners about their experiences of interviewing preschoolers, we identified several key areas linked with past research on preschoolers' witness abilities (e.g., Brubacher et al., 2019; Gagnon & Cyr, 2017; Poole et al., 2015). Specifically, the forensic interviewers discussed the need to modify their current practices to meet the needs of young children who were limited by their verbal abilities, short attention spans, and memory (see also Hritz et al., 2015). Difficulties approaching the topic under investigation and the limited time available before children start experiencing fatigue were described as major challenges facing these investigations. Similar concerns have been raised by Swedish prosecutors specializing in cases involving crimes against child (Ernberg et al., 2016).

Some forensic interviewers called into question whether preschoolers can meet the demands of criminal proceedings. For example, preschoolers struggle with time ('when did it happen?') and frequency ('how many times did it happen?') estimates, which can be required during police investigations (Ernberg et al., 2016, 2020). Furthermore, due to young children's developmental level, preschoolers can have difficulties fulfilling the credibility criteria used by Swedish courts (e.g., NJA, 2017, p. 316). For instance, these criteria stipulate that witness testimony should be clear, long, and rich in detail, which are atypical of young preschoolers' accounts (see Ernberg et al., 2018b). Based on these observations, knowledge from fields such as developmental psychology and linguistics may help guide practitioners when planning and assessing the content of forensic interviews with preschoolers.

Preschoolers' disclosure tendencies

Taken together, the findings from this thesis indicate that while many preschoolers could report sensitive information about their past experiences, a range of factors could influence their disclosure process. Before discussing these factors further, it is important to note that 25% of the children in Study II did not disclose sexual abuse, even

though there was clear evidence (e.g., photographic evidence) that they had been abused. These findings are consistent with past research showing that some child victims do not disclose their experiences of abuse, even in legal cases with strong corroborative evidence substantiating the allegations (Paz-Alonso et al., 2013). Our qualitative analyses of the court documents shed light on the characteristics of non-disclosing children (see also Lemaigre et al., 2017), including limited language capacities, fatigue, short attention spans, and memory issues. The data also reflected different socio–emotional barriers that could hinder disclosures, including perceived future consequences and demands for secrecy from the perpetrator. The role of secrecy was further explored in Study III, in which 17% of the child participants in our lab study did not disclose the secret about an unfamiliar adult's transgression.

Another important finding of Study II was that among the children who did disclose, a substantial number of preschool-aged victims delayed their disclosure. Worryingly, only 25.8% of the children disclosed within the first month after the abuse and 34.9% waited for more than one year before disclosing. Delayed disclosures are problematic for several reasons (Wallis & Woodworth, 2020). Young child abuse victims may not be identified without their disclosure. Delays can also have a detrimental effect on the children's recall due to gradual memory loss (Poole, 2016). Furthermore, children may be more vulnerable to misinformation or changes in their memory recollection through repeated retrieval attempts over time (Lamb et al., 2018). What is more, long delays might limit the accessibility of corroborative evidence, which in turn could negatively influence practitioners' ability to investigate and prosecute a case (Ernberg et al., 20016, 2018a, 2020). The prompts for early disclosures among young child abuse victims are vital issues for future research to address.

The most common facilitator of disclosures discussed in Study II was whether someone had asked the child directly about his or her abuse suspicions or asked if something was wrong. Being provided with an opportunity to tell has previously been discussed as an important factor helping children disclose maltreatment (Lemaigre et al., 2017). Furthermore, young children may not be aware of the societal expectation to report abusive experiences due to a lack of knowledge of, for example, criminal acts and the legal process (Faller, 2016). Since preschoolers cannot report their experiences

directly to the police, targeted information campaigns could be directed towards common disclosure recipients (e.g., preschool staff). Our findings point towards a need to develop and test age-appropriate techniques and interventions that may encourage preschool-aged children to disclose experiences of child maltreatment. At the same time, such interventions must not encourage false disclosures.

In Study II, we also found support for several of our hypotheses derived from past research regarding disclosure tendencies among children of all ages. First, in line with previous studies (e.g., London et al., 2008), preschoolers who had made an informal disclosure were more likely to disclose during their police interview than were children who had not made an informal disclosure. Second, preschoolers who had fallen victim to intra-familial abuse by a family member were more likely to delay their disclosure than were preschoolers who had fallen victim to extra-familial abuse. These findings replicate those of numerous studies that have found longer disclosure delays and more non-disclosures among children who have had a close relationship with the perpetrator than among those who have not (e.g., Schaeffer et al., 2011; Sjöberg & Lindblad, 2002). Expanding our knowledge of the intra-familial abuse of young children is essential, particularly considering that preschoolers are more vulnerable to repeated abuse in their home environment than are older children (Fischer & McDonald, 1998).

Preschoolers' competency as witnesses

Our analysis of court cases in Study II demonstrated that many preschoolers could report at least one central piece of information about the allegation during their forensic interview. In our laboratory studies, most preschoolers could provide reliable testimony about self-experienced events that had recently occurred. It is essential to note that, when describing a self-experienced event, the young children varied greatly in the amount of detail they provided. The children's accuracy rates were positively skewed with mean percentages around 80 to 83% accurate details after a delay of approximately one week. Remarkably, in Study III, in which we did not include any misleading questions, the children's average accuracy rates were between 94 and 96% when interviewed immediately after the event. Even when faced with more inappropriate questioning techniques, including option-posing and misleading questions in Study IV (Exp. I)

and Study V (Exp. I), most preschoolers did not yield to the suggestions when describing a self-experienced event.

Age was a consistent significant predictor of preschoolers' witness performance. Specifically, age was a significant predictor of the total number of reported details, with older preschoolers reporting more information than did younger preschoolers. We also found age to be positively associated with the number of correct details (Study III) and the overall accuracy rates (Studies IV and V). These observations are in line with past field and laboratory research on age trends among preschoolers (e.g., Gagnon & Cyr, 2017; Hershkowitz et al., 2012; Lamb et al., 2002; Melinder et al., 2006). Arguably, age could be seen as a proxy for a range of developmental changes occurring during the preschool years that are likely to explain these findings (e.g., changes in linguistic ability, social skills, memory, theory-of-mind, executive functions, source monitoring, and expanding knowledge base). This topic will be addressed in more detail in the section 'Future directions'.

Another interesting finding of Study III was that our youngest participants (aged 33 to 35 months) could provide some central details about a target event. Few witness studies have included children below the age of 3 years, as 2-year-old children are typically not interviewed by the police (Ernberg et al., 2018a). However, as discussed by several scholars in the field (Brubacher et al., 2019; Goodman et al., 2017; Merchant, 2013), there are criminal cases in which 2-year-old children have provided details of value for an investigation. Legal practitioners should therefore not directly rule out the potential of talking to children who have not yet turned 3, but rather consider their verbal and cognitive abilities before making this decision. However, given the research on *infantile amnesia,* young children should not be expected to provide testimony about pre-verbal events (Peterson & Rideout, 1988). Furthermore, cases involving very young children (around 3 years of age) require considerable expertise and practical skills in interviewing preschoolers (Merchant, 2013).

Preschoolers' false reports

While most children participating in studies IV and V did provide accurate accounts, some children gave inaccurate testimony during their interviews. The errors

included a broad spectrum of reports, from falsely agreeing with suggestive statements to providing long (more than 40 words) false reports about a non-experienced event. Among children who had participated in the staged pirate event, false information containing aggressive themes was sometimes embedded in otherwise accurate descriptions of the event. One participant, for example, first accurately described meeting 'Pia the Pirate' at the preschool, but then gave an elaborate false report about going home with the pirate after the interviewer asked her to 'Tell more about what happened'. In that case, the invitation to elaborate could have been suggestive given that the child had no more information to provide. Hence, although open-ended questions are most likely to produce accurate responses, even these prompts can at times elicit errors (e.g., Brubacher et al., 2019; Hritz et al., 2015; Lamb et al., 2018).

The problem of false reports became more pronounced when children were interviewed suggestively about a non-experienced event. For example, 15% of the participants in Study IV gave a long false report after two suggestive topic prompts followed by open-ended questions. Notably, the false reports were often both detailed and contained plausible information, which could make it challenging to distinguish these accounts from true reports without corroborative evidence. Past research has indeed found that adults can have difficulty assessing the credibility of preschoolers' true and false reports (Ceci & Huffman, 1997). Notably, it can be highly problematic if children create a false belief about the event after exposure to a suggestive influence that could irreparably alter the original memory trace (Loftus, 2017).

In the second experiments of studies IV and V, many children inaccurately complied (i.e., 'yielded') with suggestive questions. However, when asked open-ended follow-up questions, only a smaller subset gave longer false reports. Instead, the children who initially acquiesced often shifted their responses when asked to elaborate. This included correctly explaining that they did not know the answer or had no memory of the event. Concerning the longer false reports, a few cases were classified as potential source-monitoring errors in which children may have confused meeting 'Pia the Pirate' with other pirate-related events. For the children who gave rich false accounts about meeting the fictional pirate character at their preschool, it is difficult to establish the mechanisms underlying these statements. Potentially, children may have started to

confabulate a narrative to comply with the perceived expectation from of interviewer. For example, one participant told her mother afterwards that she had made up a story because she did not want to disappoint the interviewer. Another explanation is that some children may have misinterpreted the question as an invitation to confabulate. This explanation is plausible considering that preschoolers are often invited to guess the answer to questions or create fantasy stories during conversations with adults (Poole, 2016). On the other hand, at the beginning of their interviews the children had practiced the ground rules of the conversation (including saying 'I don't know' and correcting the interviewer). To further explore why some children gave rich false reports, future research could examine the relationship between ground rule understanding and preschoolers' responses when asked to describe a non-experienced event.

Child interviewing techniques

Transitioning to substantive issues

When coding the court documents in Study II, it came to light that judges sometimes discussed the need for direct prompting about the abuse during the police interview to encourage disclosures. While some child victims of CSA had spontaneously disclosed their experiences, the majority required some form of prompting according to the written verdicts. Similar concerns were raised by the practitioners in Study I. Specifically, the forensic interviewers described a need for more direct questioning in cases in which a child did not spontaneously approach the topic under investigation. Furthermore, the practitioners reported that preschoolers could have difficulties responding to broad, open-ended questions. On the other hand, the use of suggestive questions was seen as problematic, as suggestions could both reduce the reliability of children's reports and be criticized in court. Similar concerns have been raised by Swedish prosecutors who specialize in handling legal cases involving children (Ernberg et al., 2016, 2020).

Study III further illustrated the dilemma of how to approach the topic under investigation. Specifically, many children kept a secret for an unfamiliar adult when asked

to give an open-ended free recall of the event. However, most children disclosed the secret when asked more leading questions about the event, followed by open-ended questions to elaborate. The results from studies IV and V illustrated, on the other hand, the risks of using suggestive questions when interviewing preschoolers about non-experienced events. Although most children correctly denied having met the pirates, some yielded to the suggestion and began providing false reports after misleading prompts.

In real investigations, striking a balance between asking specific questions (e.g., to focus a child's attention on to the topic of investigation) and not being misleading can be notoriously difficult. There is a substantial body of evidence demonstrating that misinformation could taint preschoolers' narratives (Ceci & Bruck, 1995). Forensic interviewers should therefore primarily rely on open-ended non-leading questioning strategies to reduce the risk of obtaining false information (Powell, 2005). On the other hand, preschoolers may not understand the purpose of their interview and could have difficulties responding to broad invitations (e.g., 'Tell me why you are here today'). Furthermore, as discussed by Swedish forensic interviewers (Study I) and experienced child abuse prosecutors (Ernberg et al., 2016, 2020), preschoolers could become exhausted or start guessing following too many free-recall requests. Similarly, field studies have found that preschoolers tend to be more responsive to more focused cued-recall prompts than to broad free-recall invitations (Gagnon & Cyr, 2017; Hershkowitz et al., 2012; Lamb et al., 2003). Following current guidelines, practitioners should begin with broad, open-ended topic prompts and thereafter become progressively more specific if a child is non-responsive (Prosecution Authority, 2018). If a preschooler does not approach the topic in response to open-ended questions, interviewers might consider scheduling a second interview rather than posing suggestive questions that could reduce the reliability of the child's report.

The question of how to transition to the substantive phase of an interview also raises an important ethical question regarding children's role as complainants in criminal proceedings. Specifically, should children have the right to receive information about why they are called to a police interview? At the time of writing, it is recommended that Swedish child interviewers to not provide information beforehand to

minimize the risk of suggestive influence. In contrast, Norway recently changed its legislation to ensure that all children have the right to information about the purpose of the police interview before giving legal testimony (Melinder et al., 2020). One could question whether children are being given the opportunity to express their views about matters affecting their lives (as specified in the Convention on the Rights of the Child, 1989, article 12) when they are not informed of the purpose of the police interview. Conversely, the risk involved in introducing suggestive information needs to be considered. If asking suggestive questions impairs children's ability to provide reliable testimony, a suggestively phrased explanation of the interview purpose might also limit children's opportunity to express their views. The question of how to address the topic of concern may be particularly important for countries where children do not testify in court, but instead give their testimony via their video-recorded police interview.

Rapport building strategies

In Study III, we examined the potential effects of two different rapport building strategies currently used in Scandinavian field settings. Specifically, we compared using a prop-based rapport activity (i.e., jigsaw puzzle) with asking verbal questions about personal interests. We did not find any significant differences between the two rapport building strategies. However, these findings should be interpreted cautiously due to the limited sample size. Since few studies have examined rapport building techniques during child interviews, more research is needed to understand the benefits and risks associated with different techniques (Saywitz et al., 2015). Beyond assessing the indirect effects of rapport on children's disclosure productivity and accuracy, future research could focus on developing and testing methods for operationalizing and measuring the direct effects of rapport (see e.g., Johnston, Brubacher, Powell, & Fuller-Tyszkiewicz, 2019).

Pre-substantive phase

The fourth study of this thesis consisted of a laboratory experiment examining the potential effects of the pre-substantive phase of the SI model and NICHD protocol.

No significant difference was observed between the interview techniques in preschoolers' recall of details about a self-experienced event. It is, however, interesting to note that we did observe a small but significant difference in children's accuracy. Specifically, preschoolers in the SI model condition exhibited slightly lower accuracy than did preschoolers in the NICHD condition. This observation could potentially be a result of fatigue. The length of the pre-substantive phase can influence children's accounts, particularly among young children with limited attention spans (Teoh & Lamb, 2010). Davies, Westcott, and Horan (2000), for example, reported that rapport building sessions that lasted more than eight minutes were associated with less informative accounts during the substantive phase. For practical reasons, we included a shorter five-minute break after the pre-substantive phase than the 45–60 minutes typically recommended when using the SI model (Langballe & Davik, 2017). However, a five-minute break may not have been enough to mitigate potential fatigue effects. Future studies could focus on developing a fuller picture of the optimal time and content of the pre-substantive phase of interviews with preschoolers.

Drawings

Study V examined the effects of using the draw-and-talk technique with preschool-aged children (Butler et al., 1995). Contrary to most published studies on drawing with older children (e.g., Drissenack, 2005), we found no significant improvements when children drew while describing a self-experienced event compared with a verbal-only control condition. Drawing did, however, encourage false reports among some preschoolers who were interviewed suggestively about a non-experienced event. The link between drawing and false reports should be interpreted cautiously due to the small sample and lack of a control condition. Taken together, our findings are mainly in line with the current recommendations of the Swedish Prosecution Authority (2018), stating that drawing may be used as a memory retrieval technique during child interviews providing that the interviewer does not ask suggestive questions while the children are drawing. Building on recommendations from other researchers, drawing should only be employed after having exhausted the children's free recall using verbal questioning

(Brubacher et al., 2020). As illustrated in Figure 8, we do not recommend that practitioners interpret the content of children's drawing for forensic purposes.

Figure 8. Examples of drawings from Study V.

Future directions

Future studies of preschoolers' witness abilities might benefit from more extensive developmental assessments to advance our understanding of age trends in young children's witness performance. Drawing on past research into children's memory and suggestibility, several developmental theories might provide additional pieces of the puzzle. Attachment theory has, for example, been proposed as a framework for understanding children's autobiographical memory of adverse life events (Chae et al., 2011). Theory-of-mind development could be important for children's episodic memory, understanding of conversational norms, suggestibility, and deception abilities (e.g., Melinder et al., 2006; Talwar & Crossman, 2012). Executive functions, including inhibitory control, might help explain children's resistance to suggestive questions and false reporting tendencies (e.g., Poole et al., 2014; Roberts & Powell, 2005). Children's

linguistic skill is another factor found to correlate with children's suggestibility (Bruck & Melnyk, 2004; Klemfuss & Olaguez, 2020). By including different developmental tests and using more sophisticated statistical methods, future research could help disentangle what age-related changes contribute to the positive age trends among preschool-aged witnesses.

Another promising but under-researched area concerns the use of different interviewer strategies to overcome children's reluctance during forensic interviews. In the child interviewing field, a paradigm shift has been occurring over the last decade. From primarily focusing on the influence of cognitive factors on children's witness abilities, researchers have begun to shift their attention towards the socio–emotional aspects of child interviewing. For example, the NICHD protocol was recently updated to encompass an increased focus on interviewer supportiveness and rapport building (see Lamb et al., 2018). While different countries, including Sweden, are beginning to adopt the revised version of the NICHD protocol, we are still lacking controlled laboratory experiments assessing the effects of the technique on children's report accuracy. Furthermore, few studies have tested the efficacy of different socio–emotional components (e.g., rapport building tactics and strategies for overcoming disclosure barriers) used with preschool-aged children. Taken together, more research is needed on different tools to help the police during investigations involving preschool-aged children.

Methodological considerations

Some methodological concerns need to be addressed. Since we employed different methodologies to approach our research question, our five studies have different strengths and limitations. Study I consisted of a survey and is therefore dependent on the perceptions of practitioners. However, their reports may have been affected by a range of biases, including social desirability effects (Tourangeau, Rips, & Rasinki, 2000). There could be a gap between practitioners' self-reported attitudes and their actual behaviours during child interviews. Study II was based on real-life court cases and should thus exhibit high external validity. On the other hand, the analyses treated

information from written court documents produced by judges, and as such, the documents could have been prone to memory errors and biases. We were also limited by the information available in the court documents, which conveyed varying amounts of detail on the cases. Future studies would benefit from examining case files and interview transcripts to gain a fuller picture of the disclosure process. Furthermore, it is important to note that we studied a unique sample of cases that contained corroborative evidence of strong evidential value. In general, such strong corroborative evidence is uncommon in alleged CSA investigations (Ernberg et al., 2018b). We only included cases in which children was between 3 and 7 years of age at the time of the police interview. Hence, cases in which children might have delayed their disclosure for a more extended period were excluded since we focused on preschoolers' disclosure tendencies.

Studies III to V consisted of laboratory experiments intended to examine the isolated effects of different factors. Their external validity is limited since the experimental procedures did not mirror the complex factors involved in real cases of child maltreatment (Ceci & Bruck, 1995). On the other hand, this procedure did enable us to conduct in-depth analyses of the children's statements under controlled conditions in terms of, for example, their accuracy, which cannot be done in field studies. Experiments are also crucial to help determine the potential causal effects of our variables of interest on preschoolers' reports. It is important to note the limited sample size in some of the experiments in studies III to V.

The sample size issue derived from recruitment difficulties. This resulted in some analyses being underpowered, which could decrease the chance of detecting effects as well as the ability to study interaction effects. The significant effects should also be interpreted with caution as limited sample sizes can be associated with inflated effect sizes. Similarly, we observed substantial variability between children, resulting in large standard deviations for some of our measures, and some distributions were heavily skewed (e.g., ceiling effects concerning children's accuracy). We used non-parametric options or data transformations (i.e., log10 and logit) when the data did not fulfil the assumptions of the inferential tests. While data transformation is widely used in clinical and basic research, the procedure has been criticized due to issues concerning the

reliance on mean data estimates and the alteration of the natural variability within samples (e.g., Feng, Wang, Lu, Chen, He, & Lu, 2014). For a more detailed discussion of the limitations of transformations, see Speelman and McGann (2013) and Lo and Andrews (2015).

Ethical considerations

Since this thesis touched on sensitive topics, we obtained ethical approval for all studies from the Regional Ethical Board in Gothenburg, Sweden. As we used a variety of research methods, I will discuss the specific ethical considerations for studies I, II, and III–V separately. However, before giving more detailed descriptions of the particular concerns relating to each type of study, some more general remarks regarding this line of research are in order.

Following the Convention on the Rights of the Child (1989, article 12), which became Swedish law in January 2020, all children have the right to express their views in matters affecting them. Furthermore, children's best interests should always come first in all actions concerning their lives (article 3). These principles hold true in forensic as well as scientific investigations involving child witnesses (Thompson, 2019). Children should be provided with the prerequisites to give accurate testimony while feeling safe and protected from further harm (Wolpe & Goodman, 2019). It is clear that poorly conducted forensic interviews can have severe ethical consequences for all involved. The child and the suspect's right to a fair trial is affected if the child interview technique does not meet the child's developmental level (Melinder et al., 2020). In the present studies, we focused partially on examining different techniques to facilitate young children's witness abilities. However, I would like to acknowledge that there is likely no 'one-size-fits-all' solution for forensic child interviewing (Magnusson et al., 2017b). While best practice guidelines provide interviewers with valuable structure and concrete tools to use in their line of work, efforts should be made to identify the specific needs of individual children. This will require a certain degree of flexibility to ensure that all children have equal rights to be heard when giving testimony (Saywitz et al., 2018).

Let us turn the spotlight towards some of the key ethical considerations involved in the current studies. Study I consisted of an online survey asking forensic interviewers to reflect on their line of work. Before being able to access the survey, the participants were provided with detailed information about their ethical rights (e.g., that participation was voluntary and could be withdrawn at any time) and they were asked for their informed written consent. No personally identifiable information was collected, to protect the confidentiality of the participants. The researchers' contact information to permit further questioning was provided at the beginning and end of the survey. Study II consisted of an archival study of written legal verdicts concerning CSA of preschoolers. The primary ethical consideration for this type of research concerns confidentiality issues. Written verdicts are public records according to Swedish law. While the identity of child complainants is always classified in CSA cases, the verdicts do contain personal information regarding the suspects. I have therefore refrained from referring to specific court cases throughout this thesis. Importantly, we did not collect or store any personally identifiable information during coding. The purpose of this procedure was to protect the identities of all individuals involved in the cases. Furthermore, all quotations used to illustrate the qualitative analyses were slightly revised to prevent identification.

Lastly, the ethical aspects of studies III–V are considered. Experimental child witness research has been criticized for sometimes overlooking children's own experiences in favour of emphasizing their productivity and accuracy of detail (Thompson, 2019). Striking a balance between the multiple conflicting objectives involved in child witness research can be difficult. However, it is essential to incorporate a clear 'children's rights' perspective when developing and testing different interview techniques. In our studies, we actively strove to include a child-friendly approach throughout our research. Before our data collection phase, we gathered feedback from both legal practitioners and preschool-aged children on our experimental designs and procedures. The different experiments aimed to provide educational activities for preschoolers on themes relating to good and bad secrets (Study III) and human memory (Studies IV and V). All experiments ended with a developmentally appropriate debriefing, including a fun activity relating to the staged event (i.e., playing with a soap bubble machine or going on a pirate treasure hunt).

During the interviews, additional safeguards were put in place to ensure the children's wellbeing. All interviewers had previous experience working with children and received specialist training, before the data collection phases, in how to handle difficult situations that might arise during an interview. Information letters containing detailed descriptions of the ethical rights of participants were sent to all legal guardians, and their written consent was required before children could be asked to participate. In line with Swedish ethical guidelines for research involving children, no compensation was offered as an incentive for participation. The children were given age-appropriate information sheets with pictures of the interviewers and a brief description of the task before their visit. All children were asked for their assent to be interviewed. As saying 'no' to an adult may feel frightening, the children were asked for their active assent by either saying 'yes' or pressing a big green start button. After their interview, the children were thanked for their participation and given the opportunity to ask additional questions of the interviewer. Contact information was provided to all legal guardians for further questions about the study.

In Study III, the child participants were asked by an adult to keep a secret, which poses specific ethical challenges beyond the considerations described above. Although the 'broken toy' paradigm is widely used for examining children's disclosures of transgression (e.g., Talwar et al., 2018), it is important to note that children may experience temporary discomfort during the procedure. The knowledge potentially gained from the experiment must therefore outweigh the risks involved in the study. This question was examined by the ethical review board that granted us permission to carry out the experiment. To avoid any unnecessary discomfort, we chose the least intrusive version of the broken toy paradigm (in other versions of the procedure, children are actively involved in the transgression or are asked to promise to keep the secret, e.g., McWilliams et al., 2019). Immediately after their interviews, the children were asked about their feelings talking to the interviewer. To provide an age-appropriate debriefing, the adult who initially broke the toy said that he felt sad and therefore needed to tell the secret to the toy owner. Together, the adults talked to the children about good/bad secrets and fixed the broken toy so the children could play with soap bubbles.

Practical implications

From an applied perspective, extending our knowledge of young children's witness abilities during investigative interviews can be of value for a range of professions, such as police investigators, prosecutors, judges, defence attorneys, policymakers, psychologists, and child protection workers. It is vital to raise awareness of the fact that it is not uncommon for child abuse victims to delay their disclosure (London et al., 2008). This holds true also in situations in which the children are preschoolers, as observed in our second study. Furthermore, identifying situations in which abused children are more reluctant to make an allegation (e.g., in cases involving intra-familial abuse) can help focus police resources and might facilitate healing in families who are coping with the aftermath of abuse.

Based on the results of Study II, it might be useful to provide research-based information to potential disclosure recipients, such as primary caregivers and preschool teachers, about how to act and react if a child discloses information of concern. A supportive environment during the first disclosure may facilitate later disclosures and could bolster children's well-being. However, distrust and other negative emotional reactions, as well as suggestive questioning from the disclosure recipient, could cause distress and taint the reliability of the child's statement during later stages of the legal process.

Exploring the potential impacts of different factors on children's disclosures could also provide guidance for the ongoing refinement of research-based child interviewing practices. According to Study I, forensic interviewers are currently using a range of modifications to adapt their interview technique when questioning preschoolers. Creating standardized semi-structured guidelines for interviewing preschoolers could potentially help improve interview quality and reduce variation between interviewers. This could include optimizing the duration and content of the pre-substantive phase of interviews with young children. Based on the findings from Study IV, a briefer pre-substantive phase appears preferable to a more extensive rapport building phase including a five-minute break (see also Davies et al., 2000; Teoh & Lamb, 2010). However, a greater focus on rapport building exercises may be beneficial in cases in which children are exhibiting distress (Saywitz et al., 2015). According to court cases examined

in Study II, many young children displayed signs of reluctance during their interviews. Some of these children expressed fears of disclosing (e.g., that the interviewer would be upset) and misconceptions about the crime and police investigation (e.g., that they had done something wrong and would go to prison). Hence, it could be valuable to identify potential barriers to disclosure and to address these with children during the forensic interview.

The question of how to provide specific but non-leading topic prompts to preschoolers remains a conundrum for future research to address. More specific questions may help facilitate disclosures among victims of abuse. However, the risks associated with asking specific questions are substantial, considering the increased probability of obtaining false information. While our findings confirm that preschoolers can be competent witnesses during investigative interviews, the presence of misinformation or other forms of interviewer bias can have a detrimental impact on their reliability. Preschoolers need age-appropriate scaffolding techniques that encourage their free memory retrieval without introducing case-relevant information or prompting guessing (e.g., see Saywitz & Camparo, 2014).

Practitioners will also need to set realistic expectations regarding preschoolers' abilities, including the fact that we cannot expect preschoolers to provide information beyond their developmental level (e.g., to accurately make time and frequency estimates). This can be problematic in legal contexts in which prosecutors are often required to specify, for example, the frequency and duration of criminal acts. Clearly, young children's testimony needs to be placed in a broader investigative context. Additional information may need to be obtained from other sources to help understand children's statements and this can require careful advance preparation regarding the child's vocabulary and knowledge of their everyday life. Likewise, systematically considering and falsifying alternative hypotheses regarding allegations of suspected child abuse will provide a better decision basis for assessing the reliability of young children's statements (Korkman, Pakkanen, & Laajasalo, 2017).

Further access to specialized experts on preschoolers' developmental capacities and witness abilities may be required to help practitioners in their line of work (Ernberg et al., 2020). Unlike Sweden, other countries, including England and Wales, have

implemented systems to routinely consult with specialists in child psychology or speech and language development (i.e., intermediary services) in connection to young children's forensic interviews (Mattison & Dando, 2020). Furthermore, in Finland, interviews with young children are conducted by forensic psychologists who specialize in interviewing preschoolers and children with intellectual disabilities (Korkman et al., 2017). While no similar system has been implemented in Sweden, the Swedish handbook on investigating crimes against children does encourage prosecutors and forensic interviewers to seek expert knowledge on child psychology in cases involving preschoolers (Prosecution Authority, 2019, p. 40).

Specialized training initiatives may be another way forward to improve practitioners' knowledge of how to adapt their practices when interviewing preschoolers. The Norwegian Police University college has, for example, implemented a tier system in its child interview training, in which police trainees are first offered training in interviewing school-aged/adolescent children and can thereafter apply for specialized training in interviewing preschoolers and children with intellectual disabilities (Langballe & Davik, 2017). As of yet, no similar in-depth training course on interviewing preschoolers is offered to Swedish practitioners. Considering the difficulties involved when questioning preschoolers, this type of specialized knowledge may be necessary to ensure high-quality interviews with young children. Given the literature on forensic interviewing training, such initiatives should be followed up by ongoing supervision and feedback to ensure long-term effects (Powell, 2008).

Conclusions

The current studies contribute to the growing literature on the forensic interviewing of preschool-aged children. A wide range of observed factors could delay or hinder young children from disclosing sensitive information. From a developmental perspective, preschoolers' witness abilities can be limited by their cognitive and socio–emotional development. In line with past research, our studies show that young children's witness abilities increase in a linear fashion over the preschool years. Different emotional and motivational aspects could also affect preschoolers' disclosures, including

the role of secrecy, loyalty to the perpetrator, and internal feelings of shame, guilt, or fear of upsetting their caregiver. Young children might not understand the purpose of the police investigation or the expectations placed on them. Similarly, forensic interviewers report experiencing difficulties approaching the topic under investigation when using open-ended questions with young children. Preschoolers' limited attention was also identified as a major obstacle during forensic interviews. Practitioners described having to work under time pressure to elicit information before children start experiencing fatigue. Researchers and legal professionals must continue to search for viable ways to facilitate young children's truthful disclosures without compromising their reliability. An essential part of this endeavour is evaluating and adapting current child interviewing procedures to meet the unique needs of preschool-aged children. Taken together, our studies indicate a demand for additional evidence-based guidelines on how to interview young children in forensic settings.

Since January 2020, the Convention on the Rights of the Child (UNCRC, 1989) has been Swedish law, which means that all practitioners working with children must follow the articles specified in the convention. As stated in article 12, all children have the right to express their views in any judicial proceedings affecting them. Adaptations should be made depending on the child's age and developmental status. As young children do not testify directly in Swedish courts, their only chance to express their views is during their forensic interview. If the quality of the interview is poor, their likelihood of receiving a fair hearing will be limited. Today there is a robust body of literature showing that preschoolers can be reliable witnesses if we provide them with the necessary prerequisites. In this thesis, we found that preschoolers could deliver reliable testimony about self-experienced events if research-based interview recommendations were followed. However, some children embedded false details in their reports, or provided rich false statements when asked misleading questions. The task of questioning preschoolers clearly requires considerable knowledge and practical skills. Specialized training and access to experts on child psychology and language development may help improve the quality of these interviews. As the consequences of poorly conducted police investigations involving preschoolers can be severe, ensuring that young children are given the prerequisites needed to tell their stories should be a priority.

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Appendix

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