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Opinions of legal professionals: Comparing child and adult witnesses' memory report capabilities

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ABSTRACT

The opinions of legal professionals about child and adult witnesses might influence the likelihood that a case is allowed to proceed through the different stages of the legal process. With the aim of knowing the opinions of legal practitioners about child and adult witnesses, 84 legal professionals (Swedish police, prosecutors, and attorneys) were surveyed about their beliefs about child and adult eyewitness memory (and metamemory) abilities. The respondents answered 27 questions relating to nine forensically relevant belief areas in which they compared the memory ability of children (ages 7 to 11 years) and adults. The results showed no differences in assessment among members of different professions and a general trend suggesting that, across the professions, children were believed to be poorer witnesses than adults regarding their memory abilities. Moreover, the professionals' within-group consensus was very low. These results are discussed in the context of eyewitness research findings and with respect to the implications for both legal and research practice.

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Opiniones de los profesionales del derecho: comparación de la capacidad para el informe de memoria de testigos niños y adultos

RESUMEN

Las opiniones de los profesionales del derecho sobre los testimonios de niños y adultos podrían influir en la probabilidad de que un caso prospere en las diferentes etapas del procedimiento legal. Con el objetivo de conocer las opiniones de los actores legales y judiciales sobre los testimonios de niños y adultos, se encuestó a 84 abogados, fiscales y policías suecos sobre sus creencias acerca de las habilidades de memoria (y metamemoria) de niños y adultos testigos presenciales. Los participantes respondieron a 27 preguntas relativas a 9 áreas de creencias relevantes para la práctica forense en las que informaban sobre las habilidades de memoria de los niños (de 7 a 11 años) y adultos. Los resultados no mostraron diferencias interprofesiones pero sí una tendencia general que sugiere, en la muestra global, que se percibía a los niños con peores habilidades de memoria a la hora de prestar testimonio que a los adultos. No obstante, el grado de consenso intra-grupo resultó muy bajo. Se discuten las implicaciones de los resultados para la investigación sobre el testimonio presencial y la práctica legal y judicial.

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Palabras clave:

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Crimes for which children are witnesses are fairly common. When a child witnesses or is a victim of crime, legal professionals such as police, judges, prosecutors, and defense attorneys must decide on the reliability of the child's memory in the context of event memory reports and face/person recognition in a lineup. Whether the witness is correct or mistaken, the consequences of how legal professionals handle eyewitness testimony can be very serious.

Eyewitness testimony plays an important role as evidence in the criminal justice system. For example, eyewitness error may be the main cause of mistaken convictions (e.g., Wise, Pawlenko, Safer, & Mayer, 2009). On the other hand, eyewitness testimony may be correct but not believed by the court or by the police. It is obviously important that all personnel in the legal system have correct and updated knowledge about child eyewitness memory and metamemory abilities (Bull, 2010).

The present study investigated and compared the beliefs of police personnel, prosecutors, and attorneys. The need for such studies is especially pertinent for prosecutors and defense attorneys because

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of the scarcity of research addressing their knowledge about eyewitness testimony for these groups (Wise et al., 2009). Moreover, Desmarais and Read (2011), on the basis of a meta-analysis of studies of lay person knowledge about eyewitness testimony, found that such knowledge appears to change over time, showing improvement. Similarly, knowledge about eyewitness issues among the various professions in the justice system is likely to change over time, as will knowledge arising from research on these issues. Therefore, continuous assessments of professions in the justice system with respect to their knowledge about eyewitness issues are important. Finally, many previous studies have included only one or two groups in the justice system, which makes it difficult to conduct systematic comparisons among different types of actors. Thus, an additional asset of the present study is that it includes many groups, making multiple comparisons possible.

The present study covered nine belief areas included in previous research on eyewitness memory reports (summarized in Table 2). Next, research on child and adult eyewitness abilities of relevance for the nine belief-areas is reviewed with a focus on differences between the two age groups. Finally, research findings on the opinions of legal professionals and jurors that are relevant for the same issues are briefly reviewed.

Research on Child and Adult Witness Event Memory Reporting Abilities

Question type, reliability, and completeness of memory report.

In general, for both adults and children, the type of question asked affects the accuracy of witness event memory reports. Open questions and free-recall reports are likely to be associated with a greater proportion of correct reports than closed questions. Moreover, children's memory reports can be highly accurate, especially free recall soon after the event. In fact, many studies show that children's open free-recall accounts come close or are equal to those of adults with respect to report accuracy, often at 85-90% correct (e.g., Allwood, Innes-Ker, Holmgren, & Fredin, 2008; Jack, Leov, & Zajack, 2014; Pipe, Lamb, Orbach, & Esplin, 2004). However, of importance, children's free recall is usually less complete compared to that of adults (e.g., Allwood et al., 2008; Jack et al., 2014; Knutsson, Allwood, & Johansson, 2011; Poole & White, 1991), requiring the use of additional open and closed questions to increase the forensic usefulness of the report.

With respect to *open* versus *closed* questions, both adults and children of various ages usually show lower accuracy in their memory reports when answering closed or option-posing questions than when answering open questions (Allwood et al., 2008; Poole & White, 1991) or giving free-recall reports (Pipe et al., 2004). However, compared to adults, children show lower correctness in response to option-posing questions (Poole & White, 1991, involving 4-8-year-olds) and misleading questions (Pipe et al., 2004). Even gentle probing, introducing no new information (e.g., "You just told me about a bus; could you tell me more about that bus?") has been found to give rise to less reliable testimonies in children (but not adults) as compared to free recall (Knutsson et al., 2011).

Coherence. Research shows that children's narratives of events are likely to be less coherent than narratives of adults and that children's stories often are loosely connected and, initially at least, skeletal in nature (Saywitz, 2002). Reasons may include that children lack adult knowledge of the features of a coherent narrative and also have a less developed ability to understand what another person needs to know (e.g., a less developed "theory of mind") to have a coherent and full understanding of an event.

Suggestibility. Witnesses are suggestible in many contexts. For example, witnesses may be influenced by leading and misleading interview questions, co-witness information, feedback on their

memory reports given by professionals in the justice system, and other people who take part in the witness's memories. In general, children appear to be more suggestible for these various forms of information than adults (e.g., Ghetti & Lee, 2011; Kassin, Tubb, Hosch, & Memon, 2001). These effects have usually been reported to be greater for younger children than for older children and adults and to be especially clear when witnesses are less sure about their memories (e.g., Quas, Thompson, & Clarke-Stewart, 2005). For example, Jack and Zajac (2014) found that the accuracy of the responses of 8-11-year-old children to cross-examination-style questioning 8 months after having seen a short film clip involving a non-violent crime was more sensitive than that of adults.

With respect to the effect of feedback on eyewitness confidence, confirmatory and disconfirmatory feedback may affect confidence levels differently. Children and adult confidence judgments appear to be equally affected by confirmatory feedback, but children's confidence judgments might be somewhat more affected by disconfirmatory feedback than those of adults (Allwood, Knutsson, & Granhag, 2006).

Reality monitoring. Reality monitoring is defined as the ability to keep separate memories of events that have taken place and memories of imagined events. A short review of the research on reality monitoring by Granhag, Strömwall, and Hartwig (2005) showed that the results are somewhat mixed regarding whether children have poorer reality monitoring than adults. The conclusion may depend on contextual factors, including the quality of the interview. However, children's reality monitoring appears to be better for more serious events, compared to more trivial events.

Emotional events. Pezdek and Taylor (2002, as cited in Davies & Pezdek, 2010) reviewed research on various kinds of traumatic events (for example, medical procedures, natural disasters, violent events, and sexual abuse) and concluded that these events are not remembered better than more everyday events. The research also showed that "the cognitive factors that affect memories for non-traumatic events also affect memories for traumatic events" (Davies & Pezdek, 2010, p. 183). However, some research indicates that people remember emotional and non-emotional events differently (Christianson, 1992): central details in emotional events tend to be remembered better than central details in non-emotional events, whereas peripheral details in non-emotional events are better remembered than peripheral details in emotional events. In terms of differences between adult and child memory for emotional events, research is scarce and divergent (Cordon, Melinder, Goodman, & Edelman, 2013). For example, age-related improvement in both the amount of information recalled and the accuracy of recalled information has been found in children's memory for natural disasters and sniper attacks (Reisberg & Hertel, 2004). In some contrast, Cordon et al. (2013) found no developmental differences in memory for aversive content (emotional visual stimuli) when comparing 7-9-year-olds and adults, although memory for non-emotional information improved with age. These results may indicate that in general children do not remember emotional events worse than adults, at least not with respect to central visual details, and it is possible that fewer developmental differences exist for emotional than non-emotional information.

Accuracy for peripheral and central information. Children are more perceptive of other people's actions, as compared to descriptive information (i.e., the appearance), whereas adults are generally good at describing the appearance of other persons (Davies, 1996). Moreover, children and adults differ in what they tend to focus on, what they recall, and how accurate their recollections are when providing information about other persons (e.g., Davies, 1996; Davies, Tarrant, & Flin, 1989; Pozzulo & Warren,

2003). For example, 9-year-olds and younger children tend to focus more on the exterior features of other persons, such as the hair, instead of interior features, such as the eyes (Davies et al., 1989). In addition, older children (10-14 years) are less accurate than adults in their reports of other people's interior features (Pozzulo & Warren, 2003).

Accuracy and confidence. Generally, lineup research has found a significant correlation ranging from a weak to moderate effect size between confidence and accuracy (Memon, Vrij, & Bull, 2003). For event memory, a review by Luna and Luengo (2013) reported a somewhat high correlation of .64. Although a correlation of .64 might be useful for some purposes, it is fairly weak in a forensic context. In the context of eyewitness identification, Brewer and Wells (2011, p. 25) concluded that "when measured immediately after an identification, confidence does provide a meaningful guide as to the likely accuracy of decisions made by adult (but not child) witnesses."

In general, metacognitive abilities improve with age (Schneider, 2008). The confidence levels, compared between children and adults, are about equal or lower for children on free-recall report items and about equal or higher for children for option-posing questions (Allwood et al., 2008; Howie & Roebbers, 2007). Child witnesses usually show equal overconfidence for elementary statements in open free-recall reports (e.g., Allwood et al., 2008; Knutsson et al., 2011) and more overconfidence than adults for option-posing questions (Buratti, Allwood, & Johansson, 2013). With respect to the effect of repeated questioning and confidence accuracy, only one study appears to have evaluated adult-child differences, finding that accuracy in children's confidence judgments was somewhat worse after repetition of their open free-recall memory reports, which was not the case for adults (Knutsson et al., 2011). Finally, confidence accuracy for children and adults for voice identification does not seem to differ. Öhman, Eriksson, and Granhag (2011) found the confidence-accuracy relationship to be very poor for both groups, with only a weak non-significant correlation.

The forgetting curve. Much research shows that memories first decay very fast but that then the decay rate decelerates. Using a recognition memory task, Wagner (1978) reported no age differences in forgetting rates in the age range from 6 to 22 years. However, a study by Flin, Boon, Knox, and Bull (1992, cited in Davies & Pezdek, 2010) showed contrasting results. Flin et al. interviewed 6-and-9-year-old children and adults after they had witnessed an event (adults arguing). They found that the memory performance did not differ among the three age groups one day after the event, but after five months, the 6-year-olds' memory performance was worse than that of the 9-year-olds, and the 9-year-olds performed worse than the adults. Thus, differences in the forgetting curve for children and adults may depend on knowledge about the content encoded and type of memory task.

Time estimations. People are in general poor at estimating the duration of events. Yarmey (2000) reported that witnesses underestimate the duration of events longer than 20 minutes. Similarly, researchers have found that witnesses overestimate the duration of shorter events. Adults appear to be better at time estimations than children, in part because children have less well-trained categories for time units such as minutes or hours, compared with adults (Saywitz, 2002).

Cap effect (disguise). Common sense and research suggest that if a criminal is disguised, s/he will be more difficult to identify at a later time when not wearing the disguise, for example in a lineup (Wells, Memon, & Penrod, 2006). Given that children's memory abilities in general are more frail than those of adults (e.g., Davies & Pezdek, 2010; Saywitz, 2002) and that they focus less on internal facial features than do adults (Davies et al., 1989; Pozzulo & Warren, 2003), it may be expected that a disguise would diminish children's memory performance, but no specific research appears to have addressed this issue.

Professional Opinions About the Reliability of Children's Memory Reporting

Research on legal professional and juror opinions about child witness event memory reporting is scarce. Most previous studies have investigated opinions about "witnesses" in general without any reference to age (e.g., Magnussen, Melinder, Stridbeck, & Raja, 2010; Wise et al., 2009) or asked a very limited set of questions on children as eyewitnesses (Benton, Ross, Bradshaw, Thomas, & Bradshaw, 2006; Granhag et al., 2005; Kassin et al., 2001; Magnussen & Melinder, 2012). Only three studies appear to have focused on the opinions of legal professionals about children as eyewitnesses (Leander, Christianson, Svedin, & Granhag, 2007; Melinder, Goodman, Eilertsen, & Magnussen, 2004; Quas et al., 2005).

In brief, the majority of legal professionals (excluding judges, for whom the results are inconclusive) tend to view children as competent and reliable witnesses (Benton et al., 2006; Granhag et al., 2005; Melinder et al., 2004; Quas et al., 2005), although susceptible to suggestibility and less apt regarding reality monitoring (Benton et al., 2006; Granhag et al., 2005; Quas et al., 2005), highly vulnerable to emotional factors (Leander et al., 2007), and more prone to giving contradictory (Melinder et al., 2004) and incomplete (Granhag et al., 2005) testimonies. Thus, the evidence shows that legal professionals tend to view the testimony of children as more problematic than adult testimony. Research is largely lacking regarding differences in opinions about the metamemory capabilities of children and adults.

Furthermore, the studies show differences between different professional groups and categories of people. Police officers appear to have the most faith in children's memory reporting whereas judges, prosecutors, and defense attorneys show somewhat greater skepticism towards child witnesses (Benton et al., 2006; Granhag et al., 2005; Melinder et al., 2004). However, the eyewitness researchers in the survey of Kassin et al. (2001) were considerably less optimistic as compared to both police personnel and judges (Benton et al., 2006).

The Present Study

This study investigated differences in the beliefs of legal professionals in nine belief areas (Table 2) concerning child and adult eyewitness skills, that is, their views on how different event memory performance-modifying factors affect child and adult performance. For belief areas 1-4, previous research on legal professionals provides information that allowed the formulation of the first four directed hypotheses (below). For belief area 5, regarding the general event memory reliability of child and adult witnesses, professional ratings were not expected to differ (Benton et al., 2006; Granhag et al., 2005; Melinder et al., 2004; Quas et al., 2005). Finally, for belief areas 6-9, no research appears to have addressed the attitudes of legal professionals about the skills of child and adult witnesses.

For all nine investigated belief areas, research (reviewed above) exists that provides the present understanding of child and adult witness-related skills. This research makes it meaningful to analyze professional attitudes about child and adult witness skills. Finally, the within-profession consensus among the three investigated professions (police, prosecutors, and attorneys) for the nine belief areas was also analyzed.

Our hypotheses were that all professional groups would rate children's memory reports to be

- (i) less complete than those of adults (Granhag et al., 2005);
- (ii) less coherent than those of adults (Melinder et al., 2004);
- (iii) more sensitive to suggestion than those of adults (Benton et al., 2006; Granhag et al., 2005; Quas et al., 2005);
- (iv) more affected by negative emotional factors, such as fear, compared to adults (partial support in Leander et al., 2007); and

(v) met with less skepticism by police officers than by the other legal professional groups (Benton et al., 2006; Granhag et al., 2005; Melinder et al., 2004).

Method

Participants

In total, 84 respondents completed the questionnaire (57 males and 27 females). Their ages ranged from 31 to 67 years ($M = 49$ years, $SD = 9$). Three groups within the legal system participated: 26 police personnel, 29 prosecutors, and 29 attorneys.

The response rates for the different groups in the present study were 55% (26 out of 47 questionnaires) for the police; 46% (29 out of 72) for prosecutors; and 48% (29 out of 60) for the attorneys. These response rates were on average somewhat lower compared to those from earlier comparable studies, although the response rates in the earlier studies vary widely between 28% to 88% (Benton et al., 2006; Granhag et al., 2005; Leander et al., 2007; Melinder et al., 2004). Educational background and experiences in dealing with eyewitnesses in the different professional groups are presented in Table 1.

Table 1
Experience and education of the legal professional groups in eyewitness testimonies

	Legal professionals		
	Police	Prosecutors	Attorneys
Mean years of service (<i>SD</i>)	17 (14)	11 (9)	20 (9)
Experience with child/adult testimonies	50%/100%	90%/100%	97%/100%
Attended seminars or lectures (mean number attended)	58% (5.2)	76% (3.0)	78% (2.6)
Read one or more articles on subject	77%	62%	93%
Read more than 5 articles on subject	23%	21%	39%
Read at least one book on subject	62%	59%	81%

Note. $N = 84$

Roughly two thirds of the professionals (across professions) had read at least one article and/or book and attended seminars and/or lectures on child/adult testimonies. Attorneys reported the most education in eyewitness research: 93% reported that they had read at least one article about eyewitness research, 81% that they had read a book on the subject, and 78% that they had attended lectures or seminars as compared to between 58-76% for police personnel and prosecutors.

Measurements

The questionnaire consisted of 27 questions asking the respondent to compare an adult's memory ability to a child's (7-11 years old). The questionnaire, translated from Swedish, is in Appendix A. The questions were answered by means of Likert scales ranging from 1 to 7 (*children much more difficulty to adults much more difficulty*, with 4 as *no difference*). The questions covered nine belief areas addressed in previous research on eyewitness memory reports. The relationship between the different questions and the belief areas is summarized in Table 2.

Questions on several background variables (summarized above and in Table 1) appeared last in the questionnaire.

Table 2

The nine belief areas and their related questions in a questionnaire related to witness memory and metamemory abilities and identification accuracy in witness memory research

Belief area	Question
1. Completeness	20, 21, 22
2. Coherence	23
3. Suggestibility	
a) Speaking to others	12, 19, 27
b) Wording of questions	5, 15
c) Reality monitoring	10
4. Negative emotions (fear)	6, 25, 26, 18
5. Event-memory report reliability	
a) Attention	11
b) General	3
c) Attitudes and expectations	13
d) Recognition performance	7
6. Metamemory capabilities	
a) Confidence realism	2, 4, 14, 16, 17
b) Repeated confidence	24
7. Forgetting curve	1
8. Time estimation	9
9. Cap effect/disguise	8

Procedure and Design

All questionnaires were distributed along with a pre-paid envelope for returning the questionnaire and with a cover letter stating that the survey was part of a Lund University research project on witness reports, funded by the Crime Victim Compensation and Support Authority in Sweden. Furthermore, it stated that the survey explored the opinions of different professions in the Swedish legal system regarding different aspects of witness reports. Respondent anonymity was also assured in the cover letter. The questionnaires were sealed in envelopes before distribution to key persons within police authorities and the offices of public prosecutors and attorneys, as described below.

An inquiry about participation was sent to the police (county) district commissioner who administered the distribution to police personnel with experience in eyewitness testimonies and interrogation within the district. All but five of the 25 districts in Sweden were addressed, with those five (Skåne, Blekinge, Halland, Stockholm, and Gothenburg) avoided because of other on-going related studies.

All Swedish prosecution authorities, except Stockholm and Gothenburg (because of other ongoing studies), were addressed through the chief public prosecutors of each county, who decided whether the offices would participate in the study and the number of questionnaires to be distributed within each office. The chief prosecutors then delegated the administration to administrative personnel.

Law firms employing attorneys with relevant background (experience with criminal proceedings) and who resided in the same cities as the chief prosecutors included in the study were addressed through the Swedish Bar Association public record of attorneys. To increase the number of respondents, inquiries about participation were also sent to all law firms in the major Swedish cities (all attorneys in Stockholm, Gothenburg, Malmö, and Lund). Each participating law firm requested questionnaires based on the number of attorneys within each firm. The questionnaires were distributed

locally by each law firm. A post hoc contrast of the sensitivity of the design for a sample size of 84 participants showed that the probability of detecting ($1-\beta$) significant differences ($\alpha < .05$) for a medium effect size ($d = 0.5$) performing a one-sample t -test, was 99.8%.

Results

The direction of the scale was reversed for questions 3, 15, and 27, so that all questions had the same direction in the analysis. The ratings on the different questions that were relevant for each of the nine belief areas, listed in Table 2, were summarized for each belief area, resulting in a mean score for each one. To compare group means, a between-subjects one-way ANOVA with three levels (police personnel, prosecutors, attorneys) was conducted for each belief area score. Table 3 shows the means and SD s of the professionals for each area.

As can be seen in Table 3, the ANOVAs showed no significant differences among professional groups in mean belief area ratings. Because the mean ratings were equal among the professional groups, the results for these groups were aggregated for each of the 27 questions to allow exploration of the direction of the legal professionals' ratings of child and adult memory capabilities.

A one-sample t -test was run for each question to compare the professionals' mean belief ratings with the scale midpoint (4, i.e., *no difference* between children and adults). In this way, it was possible to analyze whether the professionals' ratings differed significantly for child and adult witnesses. Attending to whether the level of the significant means was below or above 4 made it possible to see whether their rated beliefs were in line with the findings from eyewitness research. Table 4 shows the mean and SD of the professional ratings for each question for the hypothesis addressed, the t -tests statistics, the p -value, and the d -value. Because of the large number of significance tests, the p -value for significance was set at .01. The results for each eyewitness belief area are presented below.

Beliefs About Child and Adult Eyewitness Memory (and Metamemory) Abilities

For belief areas 1 and 2, *completeness* and *coherence*, the expectation was that professionals would rate children's memory reports as less *complete* (hypothesis i) and as less *coherent* than those of adults (hypothesis ii). Questions 20, 21, and 22 were relevant with respect to completeness. The results for question 22, "Children's testimonies are generally (much less ... much more) complete compared to adults" supported the hypothesis, ($M = 2.04$, $SD = 1.05$), $t(82) = -8.34$, $p < .001$, $d = 1.87$; however, the results did not differ for the two other questions, question 20, "Compared with adults, children remember (many fewer

... many more) details of the perpetrator's appearance" and question 21, "Compared with adults, children remember (many fewer ... many more) details of the perpetrator's actions". Thus, the support for hypothesis (i) was mixed at best.

In line with hypothesis (ii), the children's recall was rated as less coherent on question 23, "The different parts of children's testimonies generally are (much less ... much more) coherent than adults", ($M = 2.90$, $SD = 0.92$), $t(82) = -10.87$, $p < .001$, $d = 1.20$.

For belief area 3, *suggestibility*, hypothesis (iii) predicted that the participants (across professions) would rate children's memory reports as more vulnerable to suggestion compared to adults. Questions 5, 10, 12, 15, 19, and 27 addressed eyewitness suggestibility. The one-sample t -tests showed that the legal professionals rated child witnesses as having greater difficulties than adult witnesses on all six questions, including question 5, "Compared with adults, children's testimonies are (much more ... much less) influenced by the wording of interrogative questions", ($M = 2.05$, $SD = 0.88$), $t(84) = -20.41$, $p < .001$, $d = 2.22$. On question 10, children were rated as being less able to distinguish between experienced actual events and things they heard ($M = 2.88$, $SD = 1.10$), $t(83) = -9.31$, $p < .001$, $d = 1.12$. The same conclusion held for the four remaining questions question 12, "Children's recollections of central details (for example, color of hair, birthmarks, actions) are (much more ... much less) susceptible to social influence compared with adults' recollections of central details", ($M = 3.44$, $SD = 1.12$), $t(83) = -4.57$, $p < .001$, $d = 0.5$; question 15, "Children leave (much more ... much less) correct testimony than adults when interrogative questions are composed of proposed (option posing) alternatives", ($M = 3.55$, $SD = 0.90$), $t(84) = 4.51$, $p < .001$, $d = 0.5$; question 19, "Compared with adults, children find it (much harder ... much easier) to separate things they witnessed from things they heard from other people", ($M = 2.94$, $SD = 1.26$), $t(83) = -7.65$, $p < .001$, $d = 0.84$; and question 27, "Children's recollections of peripheral details (for example, people, objects, or events not directly related to the witnessed event) are (much more ... much less) susceptible to social influence compared with adults' recollections of peripheral detail", ($M = 3.55$, $SD = 1.26$), $t(82) = 3.22$, $p = .002$, $d = 0.36$. To summarize regarding suggestibility, all professional groups rated children as more susceptible than adults to social influence on all of the six relevant questions.

For belief area 4, hypothesis (iv) predicted that the professionals would rate children as more *affected by negative emotion* than adults. The four relevant questions were question 6, "It is (much harder ... much easier) for children to remember violent events compared to adults", question 18, "Compared with adults, it is (1) much harder ... (7) much easier for children to recall emotionally laden events", question 25, "Compared with adults, children recall (many fewer ... many more) central details (for example, color of hair, birthmarks,

Table 3
The nine belief areas and their related questions in the questionnaire

Belief areas (questions)	Police personnel	Prosecutors	Attorneys
1. Completeness (20, 21, 22)	3.72 (1.09)	3.38 (0.75)	3.45 (0.91)
2. Coherence (23)	3.12 (1.07)	2.75 (0.93)	2.86 (0.74)
3. Suggestibility (12, 19, 27, 5, 15, 10)	3.08 (0.93)	3.13 (0.59)	2.97 (0.68)
4. Negative emotions (6, 25, 26, 18)	4.06 (1.16)	3.89 (0.60)	3.80 (0.95)
5. Event-memory report reliability (11, 3, 13, 7)	3.99 (1.11)	3.60 (0.63)	3.74 (0.85)
6. Metamemory capabilities (2, 4, 14, 16, 17, 24)	3.86 (0.47)	3.78 (0.41)	3.71 (0.44)
7. Forgetting curve (1)	3.46 (1.56)	3.21 (1.42)	3.72 (1.60)
8. Time estimation (9)	2.65 (1.23)	2.24 (0.79)	2.17 (0.71)
9. Cap effect/disguise (8)	2.92 (1.26)	3.19 (1.11)	3.00 (1.00)

Note. Mean score for all questions within each belief area and SD within brackets. A mean score under 4 suggests that children are rated as performing more poorly than adults

Table 4
Results of *t*-tests for each of the 27 questions testing if the mean value for the question differed from 4 (= no difference between children and adults for police personnel, prosecutors, and attorneys, *N* = 84)

Belief area	Question	M (SD)	<i>t</i>	<i>p</i>	<i>d</i>
1. Completeness	20. Number of details of perpetrator appearance	3.70 (1.28)	-2.15	.034	
	21. Number of details of perpetrator actions	3.80 (1.66)	-1.60	.113	
	22. Completeness of testimony	2.04 (1.05)*	-8.34	.000	1.87
2. Coherence	23. Level of congruency of the parts of a testimony	2.90 (0.92)*	-10.87	.000	1.20
3. Suggestibility	5. Phrasing of question influence on testimony	2.05 (0.88)*	-20.41	.000	2.22
	10. Level of difficulty reality monitoring	2.88 (1.10)*	-9.31	.000	1.12
	12. Susceptibility to social influence and impairment on memory for central details	3.44 (1.12)*	-4.57	.000	0.50
	15. Degree of accuracy in answers to option-posing questions	3.55 (0.90)*	4.51	.000	0.50
	19. Source monitoring	2.94 (1.26)*	-7.65	.000	0.84
	27. Susceptibility to social influence and impact of susceptibility on memory for peripheral details	3.55 (1.26)*	3.22	.002	0.36
4. Negative emotions	6. Memory for violent events	3.93 (1.17)	-0.56	.577	
	18. Ease/difficulty for memory for emotional events	4.35 (1.19)*	2.67	.009	0.29
	25. Effect of fearful event on memory for central details	3.80 (1.25)	-1.50	.138	0.16
	26. Effect of fearful event on memory for peripheral details	3.58 (1.27)*	-3.03	.003	0.33
5. Event-memory report reliability	3. Degree of free-recall accuracy	3.69 (1.29)	2.20	.031	
	7. Ability to recognize perpetrator in witness confrontation	3.62 (1.15)*	-3.01	.004	0.33
	11. Ability to focus attention on event	3.51 (1.04)*	-4.32	.000	0.47
	13. Influence of preconceptions on testimony	4.22 (1.44)	1.37	.174	
6. Metamemory capabilities	2. Degree of confidence in free recall	4.21 (1.41)	1.40	.166	
	4. Degree of confidence in free recall as a credibility indicator	3.54 (1.14)*	-3.65	.000	0.40
	14. Degree of confidence in answers to multiple-choice questions	3.73 (1.39)	-1.80	.075	
	16. Confidence in answers to option-posing questions as an indication of accuracy	3.39 (1.01)*	-5.54	.000	0.60
	17. Degree of confidence in voice recognition	4.16 (0.97)	1.49	.139	
24. Level of change of degree of confidence of repeated description	3.64 (1.03)*	-3.19	.002	0.35	
7. Forgetting curve	1. Rate of forgetting details	3.46 (1.52)*	-3.22	.002	0.36
8. Time estimation	9. Reliability of time estimate of the duration of an event	2.35 (0.94)*	-16.17	.000	1.76
9. Cap effect/disguise	8. Impairment of perpetrator wearing a cap on identification	3.04 (1.11)*	-7.67	.000	0.51

Note. Mean values less than 4 suggest that children are seen as showing poorer performance than adults on the aspect in question
**p* < .01, the test indicates that mean value differs from 4.

actions) if the event was frightening”, and question 26, “Compared with adults, children recall (many fewer ... many more) peripheral details (for example, people, objects, or events not directly related to the witnessed event) if the event was frightening”.

The *t*-tests showed that the participant mean ratings did not differ significantly from the *no-difference* between child and adult witnesses scale rating on questions 6 and 25. On question 18, however, child witnesses were rated as having an *easier* time recalling emotionally laden events compared to adults, ($M = 4.35$, $SD = 1.19$), $t(82) = 2.67$, $p = <.001$, $d = 0.29$. Finally, on question 26, child witnesses were rated as recalling fewer peripheral details than adult witnesses if the event is frightening, ($M = 3.58$, $SD = 1.27$), $t(82) = -3.03$, $p = .003$, $d = 0.33$. Thus, overall, hypothesis (iv) received little support.

Belief area 5 concerned eyewitness *event memory report reliability* and the relevant questions were 3, 7, 11, and 13. The professional ratings of witness performance were not associated with significant differences from the scale midpoint (4, i.e., *no difference*) on two of the questions, question 3, “Children’s free-recall recollections (i.e., recall made without focused/leading questions being asked) are generally (much more ... much less) correct than adults free-recall recollections”, ($p < .04$) and question 13, “A witness’s preconceptions influence the testimony (much less ... much more) when the witness is a child compared to when the witness is an adult”. However, the results for the *t*-test on question 7, “Compared with adults, it is (much harder ... much easier) for children to recognize a perpetrator at a later witness

confirmation”, ($M = 3.62$, $SD = 1.15$), $t(81) = -3.01$, $p = .004$, $d = 0.33$, and on question 11, “Compared with adults, it is much (much harder ... much easier) for children to sustain their attention during the witnessing of an event”, ($M = 3.51$, $SD = 1.04$), $t(83) = -4.32$, $p < .001$, $d = 0.47$, showed that children were rated as having significantly worse event memory report abilities compared to adults.

Belief area 6 concerned eyewitness *metamemory capabilities*. The professional opinions about age differences in eyewitness metamemory capabilities were explored with questions 2, 4, 14, 16, 17, and 24. Participant ratings did not differ significantly from rating 4, *neither inferior nor superior*, on three out of six of the relevant questions: question 2, “Children are generally (much more ... much less) confident than adults in the correctness of their free recall (i.e., recall made without focused/leading questions being asked)”, question 14, “Children are (much more sure ... much more insecure) compared with adults that their answers are correct when interrogative questions are composed of proposed (option posing) alternatives”, and question 17, “Compared with adults, children are (much more sure ... much more insecure) in their ability to correctly identify a perpetrator’s voice”.

However, significant differences from 4, *no difference*, were found for the three remaining questions: question 4, “Compared with adults, children’s estimations of how sure they are about the correctness of their free recalls (i.e., recall made without focused/leading questions being asked) are a (much less ... much more)

reliable criterion of the actual correctness of the testimonies”, ($M = 3.54, SD = 1.14, t(82) = -3.65, p < .001, d = 0.40$; question 16, “Compared with adult confidence judgments, children’s confidence judgments of the reliability of their answer to interrogative questions composed of proposed (option posing) alternatives are (much less ... much more) reliable as an indicator of the actual correctness of their answer”, ($M = 3.39, SD = 1.01, t(82) = -5.54, p < .001, d = 0.60$; and question 24, “Compared with adults, children’s change in confidence is generally (much greater ... much less) between the first and the second times they describe a witnessed event”, ($M = 3.64, SD = 1.03, t(82) = -3.19, p = .002, d = 0.35$). Thus, on these three questions, the participants supported that children have greater metacognitive difficulties than adults.

The last three belief areas, 7-9, concerned the *forgetting curve*, *time estimation*, and *effects of disguise*. The results for belief area 7 regarding differences between child and adult witness forgetting curves, question 1, “Children forget details for a witnessed event (much faster ... much slower) than adults”, showed that the professionals rated children’s forgetting rate as faster, ($M = 3.46, SD = 1.52, t(83) = -3.22, p = .002, d = 0.36$, than that of adults.

The results for belief area 8, about witnesses’ abilities to estimate time, question 9, “Children’s estimations of the actual duration of a witnessed event are (much less ... much more) reliable compared to adult estimations of the actual duration of the event”, ($M = 2.35, SD$

$= 0.94, t(83) = -16.17, p < .001, d = 1.76$, showed that the professionals rated children as significantly less able than adults to estimate time.

Finally, the results for belief area 9, about the memory effects of perpetrator disguise, question 8, “For a child, compared to an adult, it is (much harder ... much easier) to recognize a perpetrator wearing a cap during the crime at a later witness confrontation, where the perpetrator does not wear a cap”, the professionals rated children as less able than adults to identify a perpetrator wearing a cap, ($M = 3.04, SD = 1.11, t(78) = -7.67, p < .001, d = 0.51$). To summarize, for belief areas 7-9, all professional groups rated children compared to adults as forgetting faster, estimating time worse, and being more vulnerable to the negative effects on recognition memory of disguise.

Consensus within the Three Professional Groups

In line with Granhag et al. (2005), level of consensus was defined as three quarters (75% or more) of the respondents in a professional group providing ratings in one of the three rating categories “1-3,” “4,” or “5-7.” The rating category “1-3” indicated that the professionals rated children as having greater difficulties than adults, “4” indicated no difference between children and adults, and finally rating category “5-7” indicated the belief that adults have more difficulties than children. Table 5 shows the consensus level for the police personnel, prosecutors, and attorneys in each of the three rating categories.

Table 5
Police personnel, prosecutor, and attorney responses to questions 1-27 on the questionnaire

Question/Rating	Police personnel			Prosecutors			Attorneys		
	1-3	4	5-7	1-3	4	5-7	1-3	4	5-7
1	42.3	42.3	15.4	51.7	37.9	10.3	41.4	31	27.6
2	26.9	38.5	34.6	24.1	41.4	34.5	24.1	24.1	51.7
3	26.9	38.5	34.6	37.9	55.2	6.9	44.8	31	24.1
4	46.2	30.8	23.1	44.8	48.3	6.9	44.8	24.1	27.6
5	92.3*	3.8	3.8	96.6*	3.4	0	100*	0	0
6	23.1	50.0	26.9	13.8	82.8*	3.4	37.9	37.9	24.1
7	42.3	34.6	23.1	34.5	58.6	0	37.9	37.9	24.1
8	65.4	23.1	7.7	48.3	41.4	3.4	58.6	31	3.4
9	76.9*	11.5	11.5	96.6*	3.4	0	93.1*	6.9	0
10	69.2	26.9	3.8	72.4	24.1	3.4	65.5	31.0	3.4
11	34.6	53.8	11.5	37.9	62.1	0	41.4	51.7	6.9
12	38.5	50.0	11.5	51.7	41.4	6.9	55.2	31.0	13.8
13	38.5	7.7	53.8	27.6	41.4	31.0	20.7	44.8	31.0
14	42.3	23.1	34.6	27.6	55.2	17.2	34.5	41.4	24.1
15	34.6	53.8	11.5	20.7	79.3*	0	41.4	51.7	3.4
16	34.6	50.0	15.4	34.5	62.1	3.4	51.7	41.4	3.4
17	26.9	50.0	23.1	3.4	65.5	24.1	24.1	44.8	27.6
18	23.1	26.9	50.0	13.8	65.5	20.7	20.7	37.9	41.4
19	73.1	11.5	15.4	58.6	37.9	3.4	75.9*	17.2	3.4
20	34.6	34.6	30.8	34.5	44.8	17.2	41.4	34.5	24.1
21	30.8	38.5	30.8	27.6	62.1	6.9	41.4	31	27.6
22	46.2	38.5	15.4	82.8*	13.8	0	72.4	17.2	10.3
23	69.2	23.1	7.7	72.4	24.1	0	82.8*	17.2	0
24	26.9	53.8	19.2	34.5	55.2	10.3	51.7*	37.9	6.9
25	30.8	26.9	42.3	27.6	48.3	20.7	41.4	41.4	17.2
26	42.3	38.5	19.2	27.6	44.8	24.1	44.8	31.0	24.1
27	57.7	23.1	19.2	34.5	48.3	13.8	55.2	20.7	24.1

Note. The three columns under each professional group show the percent distribution of chosen answers within scale rating categories “1-3”, “4”, or “5-7”. Rating category “1-3” indicated that the professionals rated children as having greater difficulties, “4” indicated no difference between children and adults, and “5-7” indicated the belief that adults have more difficulties than children.

* = consensus (i.e., 75% or more of the professionals rated in this category).

For police personnel, consensus was found for three questions (out of 27). These were questions 5, 9, and 19, all in the direction of children having greater difficulties than adults with event memory. For the prosecutors, consensus was found for five questions (5, 6, 9, 15, and 22). Questions 5, 9, and 22 were in the direction of children having greater difficulties and questions 6 and 22 showed consensus in the no-difference rating category (4). For the attorneys, consensus was found for four questions (5, 9, 19, and 23), all in the direction of children having greater difficulties. Consensus on two of the questions coincided across professions: These were question 5, for which 96% of the professionals (across professions) rated that children's testimonies are affected to a higher degree by the phrasing of interrogative questions compared to adults, and question 9, for which 89% of the professionals (across professions) rated that children's estimations of the duration of an event are less reliable compared to adults'. Using a more relaxed criterion of 70% resulted in consensus on three more questions in the direction of children having greater difficulties (question 10 for prosecutors, 19 for police personnel, and 22 for attorneys). None of the three additional questions reached consensus across professions. In summary, using the 75% criterion consensus within the professional groups was fairly low because it was found for only between three and five of the questions in each of the professional groups (11-19% of the 27 questions).

Discussion

It is important that legal professionals at various stages in the legal process have appropriate knowledge about the strengths and weaknesses of different categories of witnesses, such as children compared to adults. By identifying knowledge gaps in the current understanding of legal professionals, research can help educational programs for the respective professional groups improve the training provided about the credibility of children (and adult) testimony in court and about the information that children give to the police during police investigations. In this context, it can be pointed out that most of the participating legal professionals reported at least some education on eyewitness research.

Before discussing differences in beliefs that legal professionals hold about child and adult witnesses, it should be noted that the premises for children and adults witnessing in Swedish court are very different. Children seldom, if ever, appear in court and do not swear an oath to a court of law. Instead, filmed interviews are shown. Adult witnesses, on the other hand, swear an oath to the court of law and can be held accountable to the law if they lie in court (facing a prison sentence). Thus, legal professionals, especially those participating in court, are likely to have very different experiences with child and adult witnesses, which may have influenced their answers.

One important question is whether legal professionals are aware of differences that have been confirmed in eyewitness research regarding the event memory report capacities of children and adults. The results indicate that, in general, they mostly are. Here, the results are discussed in relation to each of the nine belief areas assessed.

The first belief area concerned completeness of event memory reports. Hypothesis (i) predicted that professionals would see children's memory reports as less complete than those of adults. This hypothesis received mixed support because only one out of three question ratings were in line with what was expected. Although the professionals (correctly) believed children's reports overall to be less complete than adults', they did not believe that children would differ regarding the number of reported details of a perpetrator's appearance or different actions in the event. This result is only partially in line with those of current eyewitness research (Allwood et al., 2008; Knutsson et al., 2011; Poole & White, 1991).

Belief area 2 concerned the coherence of memory reports. Hypothesis (ii) predicted that children's memory reports would be

seen as less coherent than those of adults, which the results supported. Here the professional views were in line with current research.

The third belief area concerned suggestibility. Hypothesis (iii) predicted that the professionals would rate children as being more influenced than adults by suggestions of different kinds. The results for all six questions on this belief area clearly supported this hypothesis. Even though previous surveys indicate that professionals may be *overly* pessimistic about children's suggestiveness (e.g., Quas et al., 2005), the belief that children are more vulnerable to suggestion indeed has support in eyewitness memory research (e.g., Knutsson et al., 2011; Pipe et al., 2004; Wells et al., 2006).

With respect to belief area 4, hypothesis (iv) predicted that the professionals would rate children's memory reports to be more affected by emotional factors, such as fear, than those of adults. The results showed mixed support. For 2 out of 4 questions in this belief area, the professionals did not think that children would have greater difficulties than adults in remembering violent events. These questions concerned children's ability to remember violent events in general and *central* details, such as color of hair and the perpetrator's actions. With respect to *peripheral* details, however, children's recall was seen as more likely to suffer when the event was frightening. Interestingly, the professionals believed that children's event memory would be better compared to that of adults when asked about differences in event memory and the type of emotion was unspecified, i.e., when they were asked about emotionally laden events in general. As discussed in the introduction, research, although scarce and inconclusive, may indicate that fewer developmental differences exist for emotional information than non-emotional information. Thus, the views of the professionals seem fairly well in line with current research.

Regarding belief area 5, general reliability of child and adult witnesses, adult witnesses and child witnesses were seen as equally reliable in two of the four questions, which also were the most straightforward questions, one on free-recall correctness (question 3) and the other on the effect of witness preconceptions (question 13). In contrast, for the questions on recognition memory and the ability to focus attention on events, children in both cases were judged to be poorer witnesses than adults. For at least two of the four questions (question 3 on correctness in free recall and question 7 on recognition memory), the result was well in line with findings in research: children have been found to be as reliable as adults with respect to proportion correct in free recall, and results from lineup research (although complex) indicate that children have poorer recognition memory than adults. More specifically, children's recognition performance in target-present lineups may be as good as that of adults, but their performance in target-absent lineups may be worse unless special precautions are taken, such as adding a silhouette signifying a "not-there" choice alternative (Havard, 2013). Also, on question 11, the professionals rated children as having a harder time than adults focusing their attention on events, which is a reasonable belief because children's ability to focus on, shift from, and maintain attention on events (and objects in it) matures over time (Damasio, 1999). Finally, for question 13, the conclusions from research with respect to whether witness preoccupation at the time of the event influences children's memory more than it does adult memory are not clear. In brief, the professionals' beliefs were fairly well in line with research on the general event memory reliability of children.

In addition, professionals' opinions on the metamemory of children and adults, belief area 6, were explored. For three out of six questions, the professionals thought that children would perform worse than adults. Two of these questions concerned confidence accuracy. On one, children's confidence in their free recall was judged to show poorer confidence accuracy than adults'. Here the professionals' view is not in line with earlier findings because the

confidence accuracy of children (older than about age 8 years) and adults for the statements in their free recall repeatedly have been found to be about equal (Allwood et al., 2008; Knutsson et al., 2011). On a similar question, but for answers to the option-posing questions, children's confidence accuracy was again believed to be poorer than that of adults. Here, the professionals' ratings are more in line with previous research (e.g., Buratti et al., 2013). Finally, the respondents rated that children's confidence will show a greater increase with repeated recall compared to adults. Again, research suggests results in line with the views of these professionals (Knutsson et al., 2011). For the remaining three questions in this belief area, the professionals saw no differences between children and adults. Thus, the level of confidence of children and adults as such (for free recall and option-posing questions) was not seen to differ, and they were not seen to differ in their level of confidence for voice identifications. Here, the professionals' opinions seem to be in line with research for free recall (e.g., Allwood et al., 2008). For the option-posing questions, the results in research are more mixed (e.g., Allwood et al., 2008; Howie & Roebbers, 2007). Finally, with respect to confidence accuracy of children and adult for voice identification, the professionals' opinions were in line with research, as no difference between the two groups in this context has been found (Öhman et al., 2011).

For the forgetting curve, belief area 7, participants rated children as forgetting details of a witnessed event faster than adults. As reviewed in the introduction, research shows that the forgetting curves for children and adults may differ or not, depending on specific details such as memory task (for example, recognition or free recall) and the extent to which children are knowledgeable about various aspects of the witnessed event. Because the question on the forgetting curve (question 1) concerned details of an event, the legal professionals' answers were in line with present research (Flin et al., 1992, cited in Davies & Pezdek, 2010). For belief area 8, the professionals thought children were poorer with respect to ability to estimate time, which is in line with current research results. Finally, turning to the results for effects of perpetrator's disguise (belief area 9), the children were again rated as more affected than adults. Although no research that directly pertains to this issue appears to be available, children might be expected to be more affected, given that their memory ability might in general often be more fragile than that of adults. In brief, for belief areas 7-9, the professionals had a more negative view of children as witnesses, compared with their view of adults. Research conclusions in this context tend to be somewhat complex because the results depend on children's knowledge and type of memory task, but in general the professionals' ratings seem to be in line with research findings.

Hypothesis (v) concerned differences among the three legal professions with respect to their beliefs about children and adults as eyewitnesses. Here, the police were expected to be less skeptical than the other professional groups towards the child witnesses compared to adults. There was no support for this hypothesis, however, as the police personnel did not differ significantly from the other professional groups in any belief area. The reason is not clear because such differences have been evident in previous studies (Benton et al., 2006; Granhag et al., 2005; Melinder et al., 2004). One possibility is that the education level in the relevant areas has increased in all the professions (Desmarais & Read, 2011), thus making it harder to detect differences in attitudes towards children as witnesses, but there could be other reasons.

The results for consensus *within* the professional groups are of interest, considering the principle of equality before the law. The results showed that within-group consensus was very low. To handle error variance in the question ratings, consensus was defined fairly conservatively as over 75% of the respondents in a professional group rating in the same direction relative to the scale's midpoint. The low level of consensus could, of course, also point to different legal professionals having different experiences with witnesses, perhaps

because of different roles within the legal system. If the finding reflects a true lack of consensus, such "within-profession" differences in perceiving eyewitness evidence might influence the likelihood that a case is allowed to proceed through the different stages of the legal process, as the assessments of the reliability of the witness testimony may vary depending on the specific professional who happens to be assigned the case. Further education of legal professionals on eyewitness psychology, the admittance of expert witnesses, and guidelines for assessments (written for different professional groups) based on eyewitness research might jointly serve to mitigate the problem.

In summary, police personnel, prosecutors, and attorneys are generally aware that children are as able as adults to give reliable *free recalls* of experienced events, although children are more vulnerable to suggestions of different kinds and have a higher rate of forgetting. These professionals are also aware that children have a harder time estimating time and giving complete and coherent memory reports. In brief, the professionals' views were often quite well in line with current conclusions in research. The one clear exception to this was the metamemory belief area: the professionals did not seem to attend sufficiently to the effect on witness confidence accuracy of *the type of memory report question* posed. Here, the participants seemed to lack awareness of the importance of distinguishing whether the witness was given a free-recall question or other types of memory questions, such as directed questions or two (or more) answer-alternative questions. Training for professionals in the justice system should therefore attend more to the differences among different types of memory questions in witness memory reports and confidence accuracy. In this context, it may also be suitable to make trainees aware of Koriat and Goldsmith's (1996) concept of *report option* (i.e., memory effects when forced recall is not enforced). Such a training, based on research, is likely to make acquiring more useful information from children and other vulnerable witnesses possible (Bull, 2010).

Some limitations of the present study should be noted. First, the sample of professionals used in this study may have limited representativeness. Even though the recruitment of respondents was planned to provide a good foundation for valid generalizations, it was not possible to analyze the characteristics of respondents dropping out, because the distribution of the questionnaires for the groups was done locally by key persons within the different organizations. However, at the same time, the response rates were quite good and only somewhat lower compared with those of similar studies in the literature.

In addition, surveys and questionnaires have some inherent well-known constraints. For example, the belief areas of eyewitness research and eyewitness testimonies are fairly complex and sometimes hard to convey in precise and short questions. As a consequence, some of the questions may have been difficult to answer. Unfortunately, the respondents were not asked about how easy the questions were to understand. Furthermore, individual response styles (e.g., Weijters, Geuens, & Schillewaert, 2010) and scale construction affect survey answers, which calls for caution when generalizing findings about professional opinions from surveys to actual legal contexts. The correspondence between respondent ratings, actual beliefs, and, even more so, actual behavior in court rooms, is difficult to assess.

The results, nevertheless, provide interesting insights into Swedish legal professionals' beliefs about the reliability of child and adult witnesses. Even though the beliefs of police personnel, prosecutors, and attorneys, in general, are in line with findings within eyewitness research, legal professionals *within* the same professional group seem to vary widely in their opinions. Consensus (three quarters of the respondents within a professional group rating in the same direction) was reached on only a few of the 27 questions. Possibly as a consequence of the large variation in response patterns

within professional groups, differences between groups were small when comparing child and adult witnesses. Even though there was a lack of consensus within the professional groups, there was an overall trend in that they believed children ages 7-11 years to be worse witnesses than adults, regarding both memory and metamemory abilities.

Conflict of Interest

The authors of this article declare no conflict of interest.

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Appendix A

Questions in the questionnaire (translated from Swedish). The children mentioned in the questions refer to children ages 7-11 years

1. Children forget details for a witnessed event **(1) much faster ... (7) much slower** than adults.
2. Children are generally **(1) much more confident ... (7) much less confident** than adults in the correctness of their free recall (i.e., recall made without focused/leading questions being asked).
3. Children's free-recall recollections (i.e., recall made without focused/leading questions being asked) are generally **(1) much more ... (7) much less ...** correct than adults' free-recall recollections.
4. Compared with adults, children's judgments/estimations of how sure they are about the correctness of their free recalls (i.e., recall made without focused/leading questions being asked) are a **(1) much less ... (7) much more** reliable criterion of the actual correctness of the testimonies.
5. Compared with adults, children's testimonies are **(1) much more ... (7) much less** influenced by the wording of interrogative questions.
6. It is **(1) much harder ... (7) much easier** for children to remember violent events compared to adults.
7. Compared with adults, it is **(1) much harder ... (7) much easier** for children to recognize a perpetrator at a later witness confrontation.
8. For a child, compared to an adult, it is **(1) much harder ... (7) much easier** to recognize a perpetrator wearing a cap during the crime at a later witness confrontation where the perpetrator does not wear a cap.
9. Children's estimations of the actual duration of a witnessed event are **(1) much less ... (7) much more** reliable compared to adults' estimations of the actual duration of the event.
10. Compared with adults, it is **(1) much harder ... (7) much easier** for children to separate things they actually experienced from things they have imagined.
11. Compared with adults, it is much **(1) much harder ... (7) much easier** for children to sustain their attention during the witnessing of an event.
12. Children's recollections of central details (for example, color of hair, birthmarks, actions) are **(1) much more ... (7) much less** susceptible to social influence compared with adults' recollections of central details.
13. A witness preconception influences the testimony **(1) much less ... (7) much more** when the witness is a child compared to when the witness is an adult.
14. Children are **(1) much more sure ... (7) much more insecure** compared with adults that their answers are correct when interrogative questions are composed of proposed (option posing) alternatives.
15. Children leave **(1) much more ... (7) much less** correct testimony than adults when interrogative questions are composed of proposed (option posing) alternatives.
16. Compared with adult confidence judgments, children's confidence judgments of the reliability of their answer to interrogative questions composed of proposed (option posing) alternatives are **(1) much less ... (7) much more** reliable as an indicator of the actual correctness of their answer.
17. Compared with adults, children are **(1) much more sure ... (7) much more insecure** in their ability to correctly identify a perpetrator's voice.
18. Compared with adults, it is **(1) much harder ... (7) much easier** for children to recall emotionally laden events.
19. Compared with adults, it is **(1) much harder ... (7) much easier** for children to separate things they witnessed from things they heard from other people.
20. Compared with adults, children remember **(1) many fewer ... (7) many more** details of the perpetrator's *appearance*.
21. Compared with adults, children remember **(1) many fewer ... (7) many more** details of the perpetrator's *actions*.
22. Children's testimonies are generally **(1) much less ... (7) much more** complete compared to adults'.
23. The different parts of children's testimonies generally are **(1) much less ... (7) much more** coherent than adults'.
24. Compared with adults, children's change in confidence is generally **(1) much greater ... (7) much less** between the first and the second times they describe a witnessed event.
25. Compared with adults, children recall **(1) many fewer ... (7) many more** *central* details (for example, color of hair, birthmarks, actions) if the event was frightening.
26. Compared with adults, children recall **(1) many fewer ... (7) many more** *peripheral* details (for example, people, objects, or events not directly related to the witnessed event) if the event was frightening.
27. Children's recollections of *peripheral* details (for example, people, objects, or events not directly related to the witnessed event) are **(1) much more ... (7) much less** susceptible to social influence compared with adults' recollections of peripheral details.