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Comparison of Knowledge of Law Enforcement and Lay People Regarding Eyewitness Testimony^{*1}

1. Introduction

It has been repeatedly demonstrated in legal psychology writings that mistakes related to eyewitness testimony are one of the factors in many court errors.^{*2} The area of eyewitness testimony in legal psychology focuses mainly on problems related to identification and knowledge of the functioning of the witness's memory as well as the influences of a co-witness (e.g., how people remember certain events and what influences the accuracy of testimony). The errors in eyewitness testimony are considered to be misidentification (e.g., identification of an innocent individual instead of the suspect), misconceptions about the functioning of the witness's memory, reservations about the accuracy of testimony given by child witnesses and the elderly.

In the US, the investigation of old cases has been resumed after new technologies have been introduced (*Innocence Project*)^{*3} and to date^{*4} the conviction of 273 persons have been overturned as the results of a DNA analysis showed that they had not committed in the past the crimes of which they were convicted. Errors in eyewitness testimony had served as one of the causes for the conviction in three fourths of the cases^{*5} and they are not solely characteristic of the US but also exist in other legal systems in Europe.^{*6} As Magnussen *et al.* have indicated, the eyewitness testimony is important evidence in many criminal cases, while the court system need not defend the suspect as required against the emergence of such errors.^{*7}

¹ The survey was conducted within the framework of the project 'Interviewing minors in criminal proceedings', financed by the Ministry of Justice together with the European Social Fund through the Fund of Wise Decisions of the State Chancellery. The author would like to express his gratitude to Professor Jüri Saar for useful comments during the preparation of the article.

² B. Scheck, P. Neufeld, J. Dwyer. Actual innocence: Five days to execution and other dispatches from the wrongly convicted. New York: Doubleday 2000.

³ See innocenceproject.org.

⁴ As of 29 August 2011.

⁵ G. L. Wells, A. Memon, S. D. Penrod. Eyewitness evidence: Improving its probative value. – Psychological Science in the Public Interest 2006/2, pp. 45–75.

⁶ S. Sporer, R. S. Malpass, G. Köhnken (eds.). Psychological issues in eyewitness identification. Hillsdale, NJ: Lawrence Erlbaum 1996.

⁷ S. Magnussen, R. A. Wise, A. Q. Raja, M. A. Safer, N. Pawlenko, U. Stridbeck. What judges know about eyewitness testimony: A comparison of Norwegian and US judges. – Psychology, Crime and Law 2008/3, pp. 177–188.

It is difficult to eliminate the errors in eyewitness testimony completely, since distortions in our perception and memory are part of normal processing of information in human beings.^{*8} Therefore it is important that the participants in the legal system, such as judges, prosecutors and investigators who make important decisions be aware of the errors in eyewitness testimony and of the factors influencing them. For example, in the US, the judge can decide on the appearance of the lineup procedure and whether the accused has the right to the presence of his or her counsel during the lineup.^{*9} The judge also has the right to decide whether the procedure for the lineup was carried out as required or in a biased manner and point out to the jury the factors affecting the accuracy of the eyewitness testimony and the need for an expert witness.^{*10}

In several countries, the knowledge of and positions of law enforcement officials on eyewitness testimony have been studied and it has been established that both the knowledge of law enforcement officials in the field as well as the manner of taking the testimony significantly affect the reliability of the testimony.^{*11} Studies have been conducted with judges^{*12}, prosecutors^{*13} and preliminary investigators^{*14}, which have indicated limited knowledge of the factors affecting the eyewitness testimony. There have been also studies concerning what the representatives of the bodies conducting the proceedings know about areas such as lineup^{*15}, reliability of child witnesses^{*16}, and what the general beliefs of the public are in regards to the functioning of memory^{*17} or the factors affecting eyewitness testimony.^{*18}

Wise and Safer^{*19}, for instance, asked 160 US judges various questions about the factors affecting the accuracy of eyewitness testimony and established that the judges' knowledge of the eyewitness testimony was limited (on average, 55% of the propositions were assessed correctly). For example, the majority of the judges believed that the ability to recall details was a good indicator of accuracy (the surveys have not validated this) and were unaware of the process of normal forgetfulness. Such a lack of knowledge can affect their judgment of the eyewitness's testimony in criminal proceedings, which is also confirmed by the results of the Innocence Project so far. The results of the survey conducted among the US judges need not be applicable to judges in other countries and in different legal systems, which is why attempts have been made to also study the topic in other countries. Surveys involving Norwegian^{*20} and Chinese^{*21} judges have confirmed that the knowledge of judges regarding eyewitness testimony was also limited in these countries; hence, it can be regarded as a general problem in judicial practice.

Studies of lay people have identified a certain overlap between the opinion of experts^{*22} and that of law enforcement officials.^{*23} Yet, for example, the opinion about and the knowledge of the jury regarding

⁸ D. L. Schacter. The seven sins of memory: How the mind forgets and remembers. Boston, MA: Houghton Mifflin 2001.

⁹ *United States v. Ash*, 1973; *Kirby v. Illinois*, 1972; V. Stinson, J. L. Devenport, B. L. Cutler, D. A. Kravitz. How effective is the presence-of-counsel safeguard? Attorney perceptions of suggestiveness, fairness, and correctability of biased line-up procedures. – *Journal of Applied Psychology* 1996/1, pp. 64–75.

¹⁰ *Neil v. Biggers*, 1972.

¹¹ S. M. Kassin, V. A. Tubb, H. M. Hosch, A. Memon. On the 'general acceptance' of eyewitness testimony research: A new survey of the experts. – *American Psychologist* 2001/5, pp. 405–416; S. Magnussen *et al.* (Note 7); R. A. Wise, M. A. Safer. What US judges know and believe about eyewitness testimony. – *Applied Cognitive Psychology* 2004/4, pp. 427–443; R. A. Wise, N. Pawlenko, M. A. Safer, D. Meyer. What US prosecutors and defence attorneys know and believe about eyewitness testimony. – *Applied Cognitive Psychology* 2009/9, pp. 1266–1281.

¹² S. Magnussen *et al.* (Note 7).

¹³ V. Stinson *et al.* (Note 9).

¹⁴ A. D. Yarmey, H. P. T. Jones. Is the psychology of eyewitness identification a matter of common sense? – S. Lloyd-Bostock, B. R. Clifford (eds.). Evaluating witness evidence. Chichester, England: Wiley 1983, pp. 13–40.

¹⁵ V. Stinson, J. L. Devenport, B. L. Cutler, D. A. Kravitz. How effective is the motion-to-suppress safeguard? Judges' perceptions of the suggestiveness and fairness of biased line-up procedures. – *Journal of Applied Psychology* 1997/2, pp. 211–220.

¹⁶ A. Melinder, G. Goodman, D. E. Eilertsen, S. Magnussen. Beliefs about the child witness. A survey of professionals. – *Psychology, Crime and Law* 2004/4, pp. 247–365.

¹⁷ S. Magnussen *et al.* What people believe about memory. – *Memory* 2006/5, pp. 595–613.

¹⁸ R. P. Schmeichel, T. P. O'Toole, C. Easterly, E. F. Loftus. 'Beyond the ken?' Testing jurors' understanding of eyewitness reliability evidence. – *Jurimetrics* 2006/2, pp. 177–214.

¹⁹ R. A. Wise, M. A. Safer (Note 11).

²⁰ S. Magnussen *et al.* (Note 7).

²¹ R. A. Wise, X. Gong, M. A. Safer, Y.-T. Lee. A comparison of Chinese judges' and US judges' knowledge and beliefs about eyewitness testimony. – *Psychology, Crime and Law* 2010/8, pp. 695–713.

²² An expert opinion based on research is meant in this context.

²³ R. P. Schmeichel *et al.* (Note 18); T. R. Benton, D. F. Ross, E. Bradshaw, W. N. Thomas, G. S. Bradshaw. Eyewitness memory is still not common sense: Comparing jurors, judges, and law enforcement to eyewitness experts. – *Applied Cognitive Psychology* 2006/1, pp. 115–130.

the topic, as exemplified by the US, can significantly differ from that of the experts in the area, and consequently, it has become an established practice to educate the jury by using expert witnesses about the factors that can affect eyewitness testimony. The studies conducted by Magnussen as well as Wise and Safer^{*24} about the knowledge of judges have indicated that although their knowledge of legal psychology was also limited, they were of the opinion that the jurors knew even less about the field. Benton^{*25} confirmed with his survey that an average juror knew considerably less than an average judge about the factors affecting eyewitness testimony. To sum it up, the studies have demonstrated that the knowledge of the jurors regarding eyewitness testimony can be rather unrealistic.^{*26}

1.1. Objective of survey

The large majority of studies in the area of eyewitness testimony have been carried out in the Anglo-Saxon jurisdiction in North America or in the United Kingdom; thus, the results of the studies conducted in these countries need not be immediately applicable to the Continental jurisdiction and local context. This study examined the knowledge of eyewitness testimony that Estonian judges, prosecutors, preliminary investigators and juvenile police officers (hereinafter the officials are referred to as 'law enforcement') have, comparing them with the expert opinion based on research.^{*27} The study (1) examined the knowledge that law enforcement has of the field, (2) observed the difference in the knowledge of various officials, and (3) compared the knowledge of law enforcement with the base level, i.e., that of lay people who did not have a specialised education in psychology or law. The objective of the survey is to establish the familiarity of law enforcement with different factors affecting eyewitness testimony and identify the main differences between the opinion of law enforcement and the expert opinion based on research.

2. Participants and method

The body of participants in the study comprised 69 law enforcement officials and 96 lay persons. Of the law enforcement officials, 16 (23%) were judges, 11 (16%) prosecutors, 26 (38%) preliminary investigators and 16 (23%) juvenile police officers. According to regional division, 36 (52% of the respondents) worked in the Northern district, 24 (35%) in the Western district, 3 (4%) in the Eastern district and 6 participants (9%) in the Southern district. There were 56 females (81%) and 13 males (19%) among the participants. The average age of the participants was 39, ranging between 21 and 65. On average, a participant had served in his or her current position for 8.8 years, from a period of a few weeks up to 40 years.

The average age of lay people involved in the study was 35, ranging between 17 and 71. As to education, 4 (4%) had a basic education, 29 (31%) a secondary education, 18 (19%) a secondary specialised education, and 43 (46%) a higher education. The lay participants had to confirm that they were unrelated to psychology or law by their education or profession.

2.1. Questionnaire

The participants in the study completed a questionnaire prepared on the basis of Kassin *et al.* as well as Wise and Safer.^{*28} In the original questionnaire, the relevant American and European researchers^{*29} were asked to assess statements; based on the positions of 64 researchers, it was presumed whether the statements of the questionnaire were considered truthful, false or there was no common position yet among researchers

²⁴ S. Magnussen *et al.* (Note 7); R. A. Wise, M. A. Safer (Note 11).

²⁵ T. R. Benton *et al.* (Note 23).

²⁶ J. D. Read, S. L. Lay. Knowledge of Eyewitness Issues: A Canadian Evaluation. – *Applied Cognitive Psychology* 2009/3, pp. 301–326.

²⁷ S. M. Kassin *et al.* (Note 11); R. A. Wise, M. A. Safer (Note 11).

²⁸ S. M. Kassin *et al.* (Note 11); R. A. Wise, M. A. Safer (Note 11).

²⁹ The researchers participating in the study had, as of the moment of conducting the study, carried out surveys in the area of legal psychology within the past ten years and their research had been published in peer-reviewed journals or books.

at that point in time. The authors deemed that there were no expert opinions in those statements regarding which sufficient surveys were not yet available or where research had yielded controversial results.

The Estonian questionnaire comprised 32 statements (see Table 1) that the participants were asked to assess on a three-point Likert-type scale (agree, disagree, do not know). The law enforcement officials completed the questionnaire in the smartsurvey.co.uk environment and it was forwarded to them by the representatives of the Supreme Court, Public Prosecutor's Office and the Police Board; the lay people completed a paper and pencil version.

Table 1. Statements in the questionnaire.

Keyword	Statement
Identification speed	The more quickly a witness makes an identification upon seeing the lineup, the more accurate he or she is likely to be.
Effects of headwear	It is significantly harder for a witness to recognise a perpetrator who is wearing headwear during the commission of a crime.
Minor details	A witness's ability to recall minor details about a crime is a good indicator of the accuracy of the witness's identification of the accused later on.
Attitudes and expectations	An eyewitness's perception and memory of an event may be affected by his or her attitudes and expectations.
Conducting lineups	A preliminary investigator who knows which member of the lineup is the suspect should not conduct the lineup.
Effects of post-event information	Eyewitness testimony about an event often reflects not only what a witness actually saw but also information obtained later on from other witnesses, from the media, etc.
Confidence-accuracy	At trial, an eyewitness's confidence is a good predictor of his or her accuracy in identifying the suspect.
Confidence malleability	An eyewitness's confidence can be influenced by factors that are unrelated to identification accuracy.
Weapon focus	The presence of a weapon in the incident can impair an eyewitness's ability to accurately identify the perpetrator.
Mug-shot-induced bias	Exposure to mug shots of a suspect will increase the likelihood that the witness will later choose the same person from a lineup.
Lineup format	Witnesses are more likely to misidentify someone when a lineup is presented in a simultaneous (all members of a lineup are presented to the witness at the same time) as opposed to a sequential procedure (all members of a lineup are presented to the witness/victim individually).
Forgetting curve	The greatest source of risk after the event is the rate of memory loss for the event (i.e., memories about the event decrease over time).
Stress	High levels of stress impair the accuracy of eyewitness testimony.
Showups ³⁰	The use of a one-person showup instead of a full lineup increases the risk of misidentification.
Lineup fairness	The more members of a lineup that resemble the suspect, the higher the likelihood that identification of the suspect is accurate.
Lineup instructions	Instructions by an official can affect an eyewitness's willingness to make an identification accurately during the lineup.
Exposure time	The less time an eyewitness has to observe an event, the less well he or she will remember it.

³⁰ Not to be confused with §77 of the Code of Criminal Procedure, i.e., confrontation; in this context, it is meant that only one person is presented to the witness/victim for identification.

Colour perception	Judgments of colour made under monochromatic light (e.g., an orange streetlight) are often unreliable.
Wording of questions	An eyewitness's testimony about an event can be affected by how the questions put to that witness are worded.
Unconscious transference	Eyewitnesses sometimes identify as a suspect someone they have seen in another situation or context.
Trained observers	Police officers consider themselves no more accurate as eyewitnesses than the average eyewitnesses or victims.
Hypnotic accuracy	Hypnosis increases the accuracy of an eyewitness's reported memory.
Hypnotic suggestibility	Hypnosis increases suggestibility to leading and misleading questions.
Event violence	Eyewitnesses have more difficulty remembering violent than non-violent events.
Cross-race bias	Eyewitnesses are more accurate when identifying members of their own race (compared to members of other races).
Alcoholic intoxication	Alcoholic intoxication impairs an eyewitness's later ability to recall persons and events.
Long-term repression	Traumatic experiences can be repressed for many years and then recovered.
False childhood memories	Memories people recover from their own childhood are often false or distorted in some way.
Discriminability	It is possible to reliably differentiate between true and false memories.
Child witness accuracy	Young children are less accurate as witnesses than are adults.
Child suggestibility	Young children are more vulnerable than adults to interviewer suggestion, peer/group pressures and other social influences.
Elderly witnesses	Elderly eyewitnesses are less accurate than are younger adults.

3. Results

3.1. Law enforcement knowledge of eyewitness testimonies

The opinions of law enforcement officials were similar to or coincided with those of the experts in the majority of the cases (see Table 2).^{*31} Just as the experts, the law enforcement officials found that child witnesses were more inaccurate and could be more easily led than adults. In the question about the lineup, law enforcement and experts alike thought that the speed of identifying the persons was related to the accuracy of their identification; it was more difficult to identify a disguised perpetrator; the presence of a weapon in the incident reduced the accuracy of identification, while exposure to a mug shot before the identification increased the likelihood of identifying the same person later on. In the statements concerning memory, it was reckoned similarly to the experts that the witness's attitudes influenced the perception of an event; the influence of co-witnesses on eyewitness testimonies was significant; alcoholic intoxication influenced the way the event was remembered and what questions were asked affected the eyewitness testimony.

Statistically significant differences ($p < .05$) between law enforcement and expert opinions appeared in six statements by using chi-square (χ^2) test^{*32}, in relation to lineup in four cases, and in perceiving the nature of the memory in two cases.

³¹ The asterisk in Table 2 shows the opinion of the experts about the statement; if the percentage of the law enforcement choosing the rating is low, this demonstrates the contradiction between the opinions expressed by the law enforcement and experts.

³² The chi-square test measures the difference between the frequency distribution of responses given by the groups compared.

Table 2. Distribution of assessments to statements by law enforcement and lay people related to eyewitness testimony (in percentages).

	Law enforcement					Lay people					p		
	Agree	N	Dis-agree	n	Do not know	n	Agree	n	Dis-agree	n	Do not know		
Identification speed	84%*	58	9%	6	7%	5	75%	72	18%	17	7%	7	Ns
Effects of headwear	73%*	50	12%	8	15%	10	90%	86	6%	6	4%	4	.023
Minor details	81%	56	4%*	3	15%	10	74%	71	11%	11	15%	14	Ns
Attitudes and expectations	87%*	60	6%	4	7%	5	89%	85	4%	4	7%	7	Ns
Conducting lineups	23%*	16	52%	36	25%	17	58%	56	21%	20	21%	20	.001
Effects of post-event information	84%*	58	7%	5	9%	6	71%	68	18%	17	11%	11	Ns
Confidence-accuracy	48%	33	28%*	19	24%	17	38%	36	42%	40	20%	20	Ns
Confidence malleability	60%*	41	10%	7	30%	21	61%	59	9%	9	30%	28	Ns
Weapon focus	56%*	39	13%	9	31%	21	62%	60	23%	22	15%	14	.03
Mug-shot-induced bias	86%*	59	4%	3	10%	7	81%	78	13%	12	6%	6	Ns
Line-up format	8%*	5	46%	32	46%	32	25%	24	35%	34	40%	38	.03
Forgetting curve	96%*	66	4%	3	0%	0	89%	85	8%	8	3%	3	Ns
Stress	87%*	60	4%	3	9%	6	77%	74	12%	12	11%	10	Ns
Showups	23%*	16	26%	18	51%	35	31%	30	23%	22	46%	44	Ns
Lineup fairness	32%*	22	40%	28	28%	19	26%	25	60%	58	14%	13	.029
Lineup instructions	55%*	38	29%	20	16%	11	58%	56	23%	22	19%	18	Ns
Exposure time	56%*	39	34%	23	10%	7	66%	63	24%	23	10%	10	Ns
Colour perception	45%	31	19%	13	36%*	25	64%	61	4%	4	32%	31	.005
Wording of questions	84%*	58	9%	6	7%	5	91%	87	6%	6	3%	3	Ns
Unconscious transference	64%*	44	9%	6	27%	19	71%	68	6%	6	23%	22	Ns
Trained observers	33%	23	36%	25	31%*	21	16%	15	58%	56	26%	25	.01
Hypnotic accuracy	9%	6	12%*	8	79%	55	28%	27	14%	13	58%	56	.005
Hypnotic suggestibility	22%*	15	3%	2	75%	52	30%	29	9%	9	61%	58	Ns
Event violence	43%	30	29%	20	28%*	19	42%	40	46%	44	12%	12	.029
Cross-race bias	57%*	39	11%	8	32%	47	79%	76	8%	8	13%	12	.006
Alcoholic intoxication	97%*	67	1.5%	1	1.5%	1	98%	94	1%	1	1%	1	Ns
Long-term repression	96%	66	0%*	0	4%	3	92%	88	2%	2	6%	2	Ns
False childhood memories	41%*	28	24%	17	35%	24	51%	49	25%	24	24%	23	Ns
Discriminability	18%	12	40%*	28	42%	29	16%	15	49%	47	35%	34	Ns
Child witness accuracy	47%*	32	44%	30	9%	7	49%	47	26%	25	25%	24	.004
Child suggestibility	96%*	66	1%	1	3%	2	92%	88	4%	4	4%	4	Ns
Elderly witnesses	52%*	36	28%	19	20%	14	62%	60	19%	18	19%	18	Ns

Note: the asterisk (*) marks the prevailing expert opinion about the statement (Kassin *et al.* (Note 11); Wise and Safer (Note 11)); in some categories, the experts do not have a common opinion about the manifestation of an effect because the results of surveys have been contradictory; that is why the experts have submitted the answer 'cannot tell' to some statements.³³ The table shows the distribution of the ratings as percentages and as absolute values (n); while the statistical significance (p) has also been presented. Ns here shows the absence of a statistically different variation.

³³ S. M. Kassin *et al.* (Note 11); R. A. Wise, M. A. Safer (Note 11).

A witness's ability to recall minor details about a crime is a good indicator of the accuracy of the witness's identification of the suspect later on. Law enforcement officials agreed with the statement; however, research has found that at best, the connection between the ability to recall details and the accuracy of identification is not significant.^{*34} The difference here is that different sections of memory are used for active recollection and identification and there is no one-on-one relationship between them.^{*35} This can lead to a situation in which an individual remembers details of the incident but cannot identify the person or *vice versa*.

At trial, an eyewitness's confidence is a good predictor of his or her accuracy in identifying the suspect. Law enforcement agreed with the claim, but research has shown that the relationship between the confidence of the witness and the accuracy of identifying the suspect is not significant.^{*36} The witness's social skills and personality traits (e.g., an excellent and persuasive appearance in court) are only loosely related to the quality of his or her memory (the accuracy of identifying the suspect). For instance, it has been established in the US that the witness's confidence has a particularly significant effect on the jurors, who can be misled by that (since they need not know much about judicial procedures and psychology of memory).^{*37}

A preliminary investigator who knows which member of the lineup is the suspect should not conduct the lineup. In the case of this statement law enforcement officials believed that the lineup administrator did not have an effect on the identification of the suspect, whereas research has established that the administrator can lead the outcome in a suitable direction, for instance, transmit unwittingly nonverbal or verbal signals when instructing the witness (changes in the tone of voice or speaking speed, unintended gestures).^{*38}

Witnesses are more likely to misidentify someone when a lineup is presented simultaneously (all members of a lineup are presented to the witness at the same time) as opposed to sequentially (all members of a lineup are presented to the witness/victim individually). Contrary to the survey results^{*39}, law enforcement thought that a simultaneous lineup would decrease misidentification. One of the most important debates in legal psychology over the past decades has been which lineup format has the fewest negative side-effects, that is, misidentification. To date, the prevailing opinion is that if persons are presented to the witness sequentially, that is, one by one, then in the case of each person seen the witness compares him or her to the memory of the perpetrator that he or she has and such an absolute judgment process is more accurate. However, simultaneous lineup starts a process of relative judgment in which the witness can erroneously identify a person who resembles the most (but not precisely) the image that he or she has of the perpetrator in his or her memory.^{*40}

In the case of the two latter statements, law enforcement officials thought that their activities did not have an effect on the witness's ability to identify the suspect. Yet it has to be kept in mind that errors made upon identification, particularly if this is one of the few pieces of evidence there is against the suspect, can lead to misidentification.

Eyewitnesses have larger difficulty remembering violent than non-violent events. Law enforcement considered the statement truthful, although based on research the experts are currently of the opinion that there could be no conclusive assessment on the effect of violent events on witnesses.^{*41} Some studies have found that it is more difficult to recall violent events (when actual crimes and their witnesses have been studied, i.e., studies carried out in an uncontrolled environment), whereas other studies have not identified such an effect (studies carried out in a laboratory and controlled environment where there is no immediate threat to the person's life).^{*42} Hence, according to experts, it is difficult to have a common position about the effect of violent events on human memory.

Traumatic experiences can be repressed for many years and then be recovered. Law enforcement is of the opinion that such a relationship existed, while there is no common opinion about the proposition

³⁴ S. M. Kassin *et al.* (Note 11).

³⁵ R. C. L. Lindsay, D. F. Ross, J. D. Read, M. P. Toglia. *Handbook of eyewitness psychology: Memory for People*. Mahwah, NJ: Lawrence Erlbaum 2006.

³⁶ S. M. Kassin *et al.* (Note 11); R. A. Wise, M. A. Safer (Note 11).

³⁷ G. L. Wells, A. Memon, S. D. Penrod. *Eyewitness Identification Procedures: Recommendations for Line-ups and Photo-spreads*. – *Law and Human Behavior* 1998/6, pp. 603–647.

³⁸ *Ibid.*; R. A. Wise, M. A. Safer (Note 11).

³⁹ S. M. Kassin *et al.* (Note 11); R. A. Wise, M. A. Safer (Note 11).

⁴⁰ G. L. Wells *et al.* (Note 37); G. L. Wells *et al.* (Note 5).

⁴¹ S. M. Kassin *et al.* (Note 11); R. A. Wise, M. A. Safer (Note 11).

⁴² K. A. Deffenbacher, B. H. Bornstein, S. D. Penrod, E. K. McGorty. *A meta-analytic review of the effects of high stress on eyewitness memory*. – *Law and Human Behavior* 2004/6, pp. 687–706.

among the experts.^{*43} Studies of traumatic experiences have demonstrated that the incidence of errors is significant when recalling repressed experiences compared to other memories, although there is no objection to the fact that memories could be repressed and then recovered after a period.^{*44} As a result, experts do not have a very clear position related to the surfacing of traumatic repressed experiences (which also highly depends on the individual).

It appeared across the three following statements (where there was no statistically significant difference compared to the experts) that the law enforcement officials were not certain in their assessments and rather replied 'do not know', while the experts shared a clear opinion based on the results of the survey.

Slightly more than one-half of law enforcement officials (51%) could not assume a position about the showup statement. Experts believe that the statement is truthful, that is, if a witness sees a presumed suspect and has to decide whether he or she is the person who attacked the witness, there is greater likelihood that the witness identifies the suspect compared to a situation in which the witness saw the suspect in a lineup with five or six persons.^{*45} Nearly 80% of the law enforcement officials responded to the statement about the hypnotic accuracy that they did not know; experts think that such a statement is false as the survey results have not confirmed the positive effect of hypnosis on the accuracy of eyewitness testimonies.^{*46} Of the law enforcement officials, 75% claimed that they did not know about hypnotic suggestibility, while the experts considered the statement as truthful. Surveys have confirmed that hypnosis increases susceptibility to leading questions, which is manifested as an increase in inaccurate information in the responses given by the witness.^{*47}

3.2. Knowledge of law enforcement according to office

When analysing the assessments submitted by judges, prosecutors, preliminary investigators and juvenile police officers to the statements separately, no differences emerged in most cases. This is indicative of a uniform approach to the preparation and training of law enforcement officials and could have been enhanced by the partial specialisation that has taken place among them (e.g., persons conducting proceedings only in offences against minors).

Statistically significant differences between the bodies conducting proceedings were revealed by chi-square test in the following five propositions (see Table 3, probability level $p < .05$), of which one was related to the role of memory in recalling the events and four statements were related to identification. In the case of a statement related to the role of memory (violent nature of events), the agreement rate among judges and juvenile police officers was higher, the preliminary investigators disagreed and the prosecutors rather did not know. The experts are of the opinion that there is no conclusive and common position yet about the effects of violent experience on human memory.^{*48}

The positions of the representatives of various offices differed about the identification as regards the following propositions. The assessments submitted to the statement of lineup format by the preliminary investigators were mostly negative, whereas the rest of the participants predominantly said that they did not know. The prosecutors, preliminary investigators and juvenile police officers had mostly agreed to the statement about unconscious transference, just as the experts, whereas the judges had rather answered that they did not know. In the case of the proposition about conducting a lineup, the judges had similarly to the experts' position mostly agreed with it, while the preliminary investigators and prosecutors had mostly disagreed. Like the experts, the judges and prosecutors had rather agreed with the statement regarding lineup instructions and the preliminary investigators had disagreed.

⁴³ S. M. Kassin *et al.* (Note 11); R. A. Wise, M. A. Safer (Note 11).

⁴⁴ I. M. Cordón, M.-E. Pipe, L. Sayfan, A. Melinder, G. S. Goodman. Memory for traumatic experiences in early childhood. – *Developmental Review* 2004/1, pp. 101–132.

⁴⁵ B. W. Behrman, S. L. Davey. Eyewitness Identification in Actual Criminal Cases: An Archival Analysis. – *Law and Human Behavior* 2001/5, pp. 475–491.

⁴⁶ S. M. Kassin *et al.* (Note 11).

⁴⁷ P. T. Malinoski, S. J. Lynn. The plasticity of early memory reports: Social pressure, hypnotizability, compliance, and interrogative suggestibility. – *International Journal of Clinical and Experimental Hypnosis* 1999/4, pp. 320–345.

⁴⁸ *Ibid.*

Table 3. Distribution of assessments by law enforcement officials to the statements (in percentages).

Statement	Agree (%/n)	Disagree (%/n)	Do not know (%/n)
Event violence	43%	29%	28%*
Judge	44 (7)	38 (6)	18 (3)
Prosecutor	45 (5)	0	55 (6)
Preliminary investigator	31 (8)	54 (14)	15 (4)
Juvenile police officer	69 (11)	0	31 (5)
Lineup format	8%*	46%	46%
Judge	19 (3)	13 (2)	68 (11)
Prosecutor	18 (2)	36 (4)	45 (5)
Preliminary investigator	4 (1)	73 (19)	23 (6)
Juvenile police officer	0	31 (5)	69 (11)
Unconscious transference	64%*	9%	27%
Judge	44 (7)	0	56 (9)
Prosecutor	73 (8)	9 (1)	18 (2)
Preliminary investigator	69 (18)	19 (5)	12 (3)
Juvenile police officer	75 (16)	0	25 (4)
Conducting lineups	23%*	52%	25%
Judge	50 (8)	19 (3)	31 (5)
Prosecutor	18 (2)	55 (6)	27 (3)
Preliminary investigator	4 (1)	85 (22)	11 (3)
Juvenile police officer	25 (4)	38 (6)	38 (6)
Lineup instructions	55%*	29%	16%
Judge	82 (13)	12 (2)	6 (1)
Prosecutor	73 (8)	18 (2)	9 (1)
Preliminary investigator	31 (8)	65 (17)	4 (1)
Juvenile police officer	56 (9)	0	44 (7)

Note: the asterisk (*) marks the current prevailing opinion of foreign experts about the statements.⁴⁹ Absolute values are given in brackets.

In the case of a statement related to the role of memory (violent nature of events), the agreement rate among judges and juvenile police officers was higher, the preliminary investigators disagreed and the prosecutors rather did not know. The experts are of the opinion that there is no conclusive and common position yet about the effects of violent experience on human memory.⁵⁰

The positions of the representatives of various offices differed about the identification as regards the following propositions. The assessments submitted to the statement of lineup format by the preliminary investigators were mostly negative, whereas the rest of the participants predominantly said that they did not know. The prosecutors, preliminary investigators and juvenile police officers had mostly agreed to the statement about unconscious transference, just as the experts, whereas the judges had rather answered that they did not know. In the case of the proposition about conducting a lineup, the judges had similarly to the experts' position mostly agreed with it, while the preliminary investigators and prosecutors had mostly disagreed. Like the experts, the judges and prosecutors had rather agreed with the statement regarding lineup instructions and the preliminary investigators had disagreed.

⁴⁹ R. A. Wise, M. A. Safer (Note 11).

⁵⁰ *Ibid.*

3.3. Comparison of assessments of law enforcement and lay people

When comparing the accuracy of the assessments of law enforcement officials with that of lay people, it appears that both were incorrect to an equal degree in their assessments (27.4%, see Table 4). The lay people were more accurate in considering the statements; law enforcement officials were more cautious and more often stated that they did not know, compared to the lay people. Such a result obviously stems from the fact that law enforcement has to weigh their judgments very carefully and they do not assume a position when they do not, for example, have the information, while lay people tend to form a judgment also when information is insufficient.

Table 4. Accuracy of assessments to the statements by law enforcement and lay people (in percentages).

	Accurate	Inaccurate	Do not know
Law enforcement	50.2% (n=1135)	27.4% (n=619)	22.4% (n=506)
Lay people	55.2% (n=1700)	27.4% (n=844)	17.4% (n=536)

Note: absolute values are given in brackets.

A statistically significant difference between the bodies conducting proceedings and lay people was identified in chi-square test in eleven statements (see Table 2). In some statements, the assessments of the lay people resembled more those of the experts than the assessments submitted by law enforcement. For example, in the statement about conducting the lineup, 58% of the lay people thought similarly to the experts that the lineup procedure had an effect on the accurate identification of the suspect (compared to 23% among the bodies conducting proceedings). A similar outcome appeared regarding the lineup format (sequential lineup decreases the number of erroneous identification compared to simultaneous lineup), use of head-wear for disguise (makes identification later on more difficult) and cross-race bias (people of the same race as the witness are identified more accurately than people of other races).

In some statements, the statistically significant difference between the assessments of law enforcement and lay people was caused by one or the other group choosing more often the answer 'I do not know' (such as law enforcement in lineup fairness and focus on a weapon and the lay people in child witness accuracy). As regards the violent nature of events, the lay people tended to rather agree or disagree with it, although no conclusive opinion could be detected among the law enforcement officials (and experts). A similar effect appeared to a lesser extent in the statement about the colour perception. The lay people thought more often than the law enforcement officials that the experience had no effect; law enforcement and lay people knew equally little about hypnotic accuracy, while the agreement rate concerning the statement was lower among law enforcement officials (responding more often that they did not know) than lay people.

4. Discussion

When comparing the assessments of law enforcement with the opinions of the experts regarding eyewitness testimony, they coincided in most parts. The largest differences were concerning accurate identification when comparing the opinions of law enforcement and experts (as well as between law enforcement officials themselves), especially regarding lineup and the factors affecting it. In Estonian law, the regulation of the procedure for a lineup is rather scanty⁵¹, namely that 'a person, thing or other object shall be presented for identification with at least two other similar objects'. It has not been expressly described how the act of presentation should be carried out (e.g., simultaneously or sequentially). Hence, it is understandable that Estonian law enforcement officials thought that a simultaneous lineup would be more efficient as this method is mainly used in practice. It can also be that law enforcement either (1) is not aware of the strengths and weaknesses of different lineup methods, or (2) there is no procedural precedent of using sequential lineups.

The difference between law enforcement and lay people was larger in areas that presumed better knowledge of legal psychology compared to common knowledge (e.g., alcoholic intoxication has an adverse effect

⁵¹ Subsection 81 (2) of the Code of Criminal Procedure (kriminaalmenetluse seadustik). – RT I 2003, 27, 166; RT I, 14.03.2011, 3 (in Estonian).

on a person's memory). The law enforcement officials were more cautious when assessing the statements, claiming more often that they did not know. Hence, if law enforcement officials are not confident about the truthfulness of the statement, they remain undecided and hypothesise less about the effect compared to the lay people, as the professional judgments of law enforcement are often quite weighty and consequential.

When we attempt to evaluate the knowledge of Estonian law enforcement with the factors having effects on eyewitness testimony, we must first underline that law enforcement officials (i.e., judges, prosecutors and preliminary investigators) were examined in Estonia, while judges have been examined elsewhere. The surveys carried out on judges in foreign countries have revealed that the judges' knowledge is rather limited.^{*52} In the case of US judges, the accuracy of assessing statements similar to the present survey amounted to 55%^{*53}, in China to 47%^{*54}, in Norway to 63%^{*55} (and 50.2% in Estonia). For example, in Norway, the authors believed that as the country was compact and there had been several high-profile cases (which had been discussed in the media), they had attracted more attention and the awareness of the factors having effects on the eyewitness testimony was better.^{*56} At the same time, it is emphasised that the surveys help identify shortcomings in the judges' knowledge and, for example, prepare relevant guidelines for improving their knowledge. Hence, it may be concluded that the knowledge of law enforcement in Estonia is similar to the results identified in other countries regarding the assessment of factors that influence eyewitness testimony.

It is important to highlight two areas to which law enforcement should pay more attention than before. The first concerns eyewitness testimony related to pre-trial procedure. This includes, for instance, the required lineup procedures as well as the efficient interviewing of witnesses and victims, proceeding from their peculiarities (and that of the event). This survey revealed that whereas the judges and prosecutors agreed to the statement that the instructions by an official could have an effect on the eyewitness's willingness to make an identification accurately in the lineup, the preliminary investigators disagreed. The instances in which a lineup is conducted by an investigator working on the case are rather frequent.^{*57} It is particularly dangerous in light of the outcome of the Innocence Project, where there are already enough examples of the adverse effect of eyewitness testimony on wrongful convictions. It is understandable that it complicates the work of the person conducting the proceedings if the lineup procedure is to be conducted by someone else (as this reduces the threat that the lineup administrator 'leaks' nonverbal information about the suspect); at the same time, the involvement of another person in conducting the proceedings increases the reliability that the witness/victim makes as accurate a decision as possible based on the memories that he or she has. Thus, better knowledge of eyewitness testimony would help achieve a more transparent pre-trial procedure than before. That is why it would be important to train the relevant law enforcement officials in the factors influencing eyewitness testimonies, for example, how to conduct lineups in an even more transparent manner.

Also, if in judicial proceedings, the judge is more familiar with the area of eyewitness testimony (has passed relevant training or read guidelines), he or she can (engaging an expert, if necessary) better evaluate the evidence collected during both the pre-trial and judicial proceedings (the person's testimony and reliability, issues related to lineups). In the Estonian legal system, an expert in forensic psychology often plays the role of a clinical psychologist (e.g., in the issues of the person's intellectual abilities or manifestation of emotional agitation) but the expert can also educate the court about issues regarding the memory and identification.^{*58} That is why besides using relevant training and guidelines, the author encourages using the help provided by experts for educating the parties in judicial proceedings.

⁵² R. A. Wise, M. A. Safer (Note 11); S. Magnussen *et al.* (Note 7); R. A. Wise *et al.* (Note 21).

⁵³ R. A. Wise, M. A. Safer (Note 11).

⁵⁴ R. A. Wise *et al.* (Note 21).

⁵⁵ S. Magnussen *et al.* (Note 7).

⁵⁶ *Ibid.*

⁵⁷ G. L. Wells *et al.* (Note 37).

⁵⁸ See, e.g., decision No. 1-10-3575 of the Tallinn Circuit Court, paragraph 6.

5. Conclusions

In conclusion, it can be said that the survey confirms the results of previous studies which have established that in some areas the opinions of law enforcement are very close to those of experts and some areas are characterised by larger differences.^{*59} As the lay people, based on their common knowledge, did not make considerably more mistakes than law enforcement, this implies the latter's limited knowledge of eyewitness testimony. To avoid the effect of erroneous eyewitness testimony on the legal system and the decisions made within its framework, it would be important to harmonise the knowledge of law enforcement with the area and keep up to date with the latest research results. Guidelines, training days or instructions about eyewitness testimony and the related factors would contribute to it.

⁵⁹ S. M. Kassin *et al.* (Note 11); R. A. Wise, M. A. Safer (Note 11); S. Magnussen *et al.* (Note 7); R. A. Wise *et al.* (Note 21).