Prof. Jan Widacki (corresponding author)
Department of forensics, Criminology and Police Science Andrzej Frycz Modrzewski Krakow University
jan.widacki@gmail.com
Karolina Dukała
doctoral student at the Institute of Psychology at the Jagiellonian University

Lie detection – of what?

Summary

The article discusses the issue of methods of „lie detection" in criminology and forensic psychology. Considerations are described in detail philosophical, linguistic and psychological associated with the concept lies. Approximate methods are commonly referred to as „used to detect lies" along with a thorough analysis of the subject of their detection and usability in practice. The article raised issues of credibility are also psychological and witness testimony.

Keywords deceit, lie detection, psychological credibility of the witness and testimony

Introduction

Classic criminologist Hans Gross claimed that "most of the work of forensics is a struggle against lies"[1]. No wonder that in the literature of criminology and forensic psychology, the name "lie detection", "instrumental detection of lies", "non-instrumental detection of lies" (*lie-detection*)[2] is often used. The literature also includes such terms as "fraud detection"[3], or more precisely, "deception" *(detection of deception)* and "a psychological evaluation of the reliability of testimony"[4]. Apart from this, forensic psychology uses the term "psychological credibility", which is a criterion for separating the sincere from the false.

Already in the nineteenth century, Pierre Simone de Laplace proposed dividing testimony into different categories. He distinguished true testimony, that is that which reflect reality, and sincere testimony, which are an accurate reflection of the subjective reality of the witness (i.e. the witness has intention to testify truly, according to what he remembers), but cannot reflect the objectively existing reality. These criteria allow for the creation of four types of categories of testimony:

- Genuine and sincere (reflecting objective reality and subjectively true)
- False and insincere (witness seeks to ensure that convey a false data that are inconsistent with the objective truth)
- False, but sincere (witness tries to testify in accordance with its knowledge and is convinced that telling the truth, but his statement, e.g. As a result of errors of memory, forgetfulness etc. untruthful objective) and
- Insincere, but real (very rare group of evidence, the witness wants to lie and testify accordance with what is remembered, but still provides information in accordance with objective truth).

Most current methods of "lie detection" therefore refer to a category of subjectively insincere and objectively false. It is possible to meet the claim that the object of the detection method is not a lie or sincerity but **"guilty knowledge"**

1 H. Gross, *Criminal psychology*: *A manual for judges, practitioners and students*, Little, Brown and Comp., Boston 1918, p. 474.

2 cf. e.g. C.D. Lee, *The instrumental detection of deception*, Ch. Thomas, Springfield 1953; A. Vrij, *Detecting Lies and deceit. The psychology of lying and implications for professional practice*, John Wiley & Sons, Chistester, 2000; J. Ulatowska, *Knowledge of cues to deception – looking for its determinants*, "Problems of Forensic Sciences" 2009, 80, 411–428; *Kryminalistyka*, J. Widacki (red.) C.H. Beck, Warsaw 2012, pp. 106–109, pp. 393–395.

3 K. Cantarero, *Detecting deceit in interpersonal communication*, „Social Psychology" 2009, 4, 167–176.

4 B. Wojciechowski *Psychological analysis of the content of the testimony of witnesses and evaluation of their credibility*, „Palestra" 2012, No. 1–2, pp. 70–80.

1. Do they call you, Rudy? [During the pre-test interview the examinee respondent that they usually call him "Rudy"]
2. Are you over 21 years of age? [When the examinee is actually aged 21 years, does not hide it or conceal]
3. Did you shoot John Jons last Saturday?
4. Are we now in Chicago? [If the test takes place in Chicago]
5. Did you kill John Jons?
6. In addition to what you said, did you steal something else?
7. Did you walk to school?
8. Did you steal John Jons watch last Saturday night?
9. Do you know who shot John Jons last Saturday?
10. Have you ever stolen anything from your workplace?

In this test, questions 1, 2, 4, 7 are neutral questions. Questions 3, 5, 8, 9 are the critical questions, questions 6 and 10 are the control questions.

The control questions examination technique does not compare reactions of critical questions (critical questions) to reactions to irrelevant questions isn't being compared (related) with reactions to irrelevant questions (irrelevant), as takes place in case of those based on the classic tests, but reactions to critical questions are being compared with reactions to control questions. The responses to questions 3 and 5 are compared with the responses to question 6, responses to questions 8 and 9 to the responses to question 10.

The Reid technique involved the construction of two identical control questions tests arranged according to the above scheme, moreover the "mixed questions" test containing all the same questions as the control questions test, but posed in another previously unknown order. Depending on needs and possibilities, as part of this examination technique, POT tests as well as supporting "yes" (Yes-test) test or the control questions test in the "silent version" (Silent Answer Test – SAT) may be performed as part of this technique. In the first of these tests, we asked the examinee that regardless of whether he would answer true or false, for every question answer "yes". According to the recommendations of Reid-Inbaua [31] this test is performed when the basic control questions test questions, including questions of the mixed test, gave no grounds for a determination but gave suspicion that the examinee during the study tried to manipulate their reactions. It is assumed that such a person is in the test who agree, will attempt to artificially induce a clear response to the critical questions in order to confuse the examiner. In the "silent version" the examinee is instructed not to answer aloud, only to answer in his mind, but truthfully. The "silent response" test, as the result of the practice, gave better results with certain personality types than the ordinary control questions test, during which the examinee must say aloud, "yes" or "no".

With the control questions technique, Reid, as an auxiliary diagnostic criteria, in addition to the assessment of the response recorded by the polygraph, incidentally took into account the assessment of the potential interference with the test records, verbal and nonverbal behavioral symptoms associated with the pre-test, during and after the test[32].

On the basis of all the conditions, responses to the critical questions (in relation to the response to the control questions), responses from the POT test, ancillary tests, assessing potential storage disorders, behavioural assessments (through the prism of verbal and non-verbal symptoms), the examinee belongs to one of following three groups: deceptive *(deceptive),* non-deceptive *(non-deceptive),* or inconclusive *(inconclusive).*

In the correct methodologically opinion, the examination should be written: ***"The examinee responds to critical test questions as usual individuals who answer such questions deceptively, that is, they are lying or concealing the fact of having information related to the case."***

While the answers to individual critical questions of the control questions test (along with the context of the question) may be statements logically false and, therefore, speak to the examiner of the intention that the statements recognized to be true, are lies, then **in the responses to each question were not assessed separately. Evaluation of the sincerity of the examinee is made as a whole, on the basis of the responses to all questions. It does not detect individual lies to individual critical questions, but generalizes the assessment of the whole test, classifying the test as "deceptive" or " non-deceptive" (or, in the absence of a clear reaction, the result is considered inconclusive).** Not evaluation, e.g. "the examinee lied, answering question 5", "examinee did not lie, answering question 9", but all reactions from the test are averaged, ranking the examinee to one of the above mentioned groups: "non-deceptive" *(non-deceptive* – NDI), "deceptive" *(deceptive* – DI), or "inconclusive" *(inconclusive* – INC). In addition, in the "silent testing ", which incidentally are also used in the evaluation, in general, we are not dealing with a lie in the above sense, because the examinee does not say anything knowingly and intentionally does not show.

Identical in this respect is in the control questions technique arising from the development of the techniques of Reid, and thus the Backster Zone

31 Ibidem, pp. 32–33.

32 J. Widacki, *The analysis of diagnostic premises in polygraph examinations*, Ed. University of Silesia, Katowice 1982, pp. 78–84.

Comparison Test or newer, and also for the Federal Zone Comparison Test, Utah Zone Comparison Test[33].

Thus, polygraph testing performed using the control questions technique does not detect a lie in response to particular questions of the test, but after all responses to individual critical questions, compared with reactions to control questions, are brought to a whole, whether the test, during the test is non-deceptive or deceptive, or more precisely, attempted to mislead the examiner, or not[34]. This applies both to qualitative methods of the analysis of records, as well as quantitative (numerical)[35].

It is worth paying attention to the professional scientific literature, from the United States at least since the 50s of the 20th century, they do not speak about a lie *(lie)* as the object of polygraph testing, but about "misleading", "insincerity", "deception" *(deception)*[36]. The word *"deception"* in the English language it is understood as a deliberate act to cause someone to believe in something that is not true[37], or the use of fraud, deception, misrepresentation[38], or a deliberate act or omission to provide information with the intention of misleading[39].

Lykken technique

In the years 1958/1959 Lykken conducted two experiments that aimed, he said, not to detect "lies", but "guilty knowledge" *(guilty knowledge)*[40]. In the Lykken experiments, questions were not asked according to the techniques of the control questions test technique or the classical technique. In every test, and a few of them were conducted, they were setting one, preceded by the specific introduction, entering the question, reading alternative replies later, from which one was really associated with the directed criminal event. The first of these questions was, "If you are the murderer, you will know that there was an unusual object present in the murder room. One of the following:

1. tape recorder?
2. easel?
3. box of chocolates?
4. chess piece?

The examinee, to these questions did not answer, but listened, and a psychogalvanometer recorded their reactions. To strengthen the motivation of the respondents, additional electric shock electrodes, indicating that when the GSR change pointed to guilty, they would receive a painful shock[41]. As you can see in the Lykken experiments, the examinees did not respond to questions, so it is difficult to speak about "lie" (*lie*) and "deception" (*deception*).

The object of detection in polygraph testing performed using the control questions technique and the Lykken technique

It has been said that the control questions technique aimed to detect lies and the Lykken technique (Guilty Knowledge Test – TCH, Concealed Information Test – CIT) aimed at detecting "guilty consciousness", "hidden information" or "knowledge of the deed". Indeed, are these techniques used for a detection of something else? Is there another object of recognition?

The literature points out **that in both the control questions technique and the Guilty Knowledge Test technique, the object of detection is essentially the same thing**[42]. **It is the – variously called – insincerity of the examinee, diagnosed after the entire examination, and not the insincerity of the responses to individual test questions.**

What is the difference between saying, "The examinee's answer to critical questions is

33 Widacki J. (eds.), *Criminology*, C.H. Beck, ed. 2, Warsaw 2012, p. 383.

34 cf. Widacki J. (Eds.), *Polygraph testing in Poland,* Publishing House AFM, Cracow 2014, p. 196.

35 Cf. for example. J.A. Matte, *Forensic psychophisiology. Using the polygraph,* J.A.M. Publications, Williamsville, New York 1996, p. 398 et seq.; D.C. Raskin, Ch. Honts, J.C. Kircher (ed.), *Credibility assessment. Scientific research and applications*, Elsevier – Academic Press, 2012, pp. 4–7, 161–210, pp. 305–307.

36 cf. e.g. C.D. Lee, *The instrumental detection of deception,* Ch. Thomas, Springfield, 1953; J.E. Reid, F.E. Inbau, op.cit.; Ch.R. Honts, *Psychophysiological detection of deception*, Current Directions in Psychological Sciences 1994, pp. 77–82; Vendemia J., *Detection of deception*, "Polygraph" 2003, 32, 97–106; D.C. Raskin, Ch.R. Honts, J.C. Kircher (ed.), op. cit., pp. 86-88.

37 *Oxford advanced learner's dictionary*, Oxford Univ. Press 2010, p. 391.

38 *The American Heritage dictionary*, Houghton Mifflin Comp., Boston 1985, p. 371.

39 D. Krapohl, S. Sturm: *Terminology reference for the science of psychophisiological detection of Deception*, APA, Chattanooga. 27–29, 1997, p. 20.

40 D.T. Lykken, *The GSR...*, op cit.; D.T. Lykken, *The validity...* op. cit.

41 D.T. Lykken, *The GSR...*, op. cit. A more late technique of polygraph testing called the Guilty Knowledge Test technique (GKT) or Concealed Information Test (CIT) is based on these experiments.

42 J. Widacki, *On the choice of Polygraph testing technique. Is technique based on GKT tests (CIT) is better than techniques based on CQ tests*? „Problems of Criminalistics," 2011, 273, pp. 5–10; J. Widacki, *Logical identity of Conclusions from polygraph testing performer in Control Question Test (CQT) and Guilty Knowledge Test (GKT) techniques*, European Polygraph, 2011, 1 (15), pp. 1–10.

e.g. different choice of words, used in a different way, especially all embracing, another level of refinement of expression etc. Until now, more than 200 linguistic clues have been identified that could directly indicate insincere testimony[61]. It is worth noting that linguistic analysis takes into account all of the testimony, not excerpts. In other words, in the case of linguistic analysis one cannot talk about the detection of lies, defined as a single statement, but rather of assessing the sincerity of the entire expression (the entire testimony) on the basis of an analysis of its verbal characteristics.

Lie detection on the basis of an analysis of the content of the statement

One of the directions of research into the detection of lies/insincerity in testimonies is related to trying to answering the question of whether it is possible to find, in the content of the testimony of the witnesses, the deliberate falsification of elements and what that could be. In the beginning, they tried to set different criteria and methods for the assessment of the content of the testimony (apart from that of the witness) that would indicate the existence of insincere, spurious[62] elements, And later they sought to group these criteria in a uniform method based on a systematic analysis of the evidence in order to find the so-called insincerity criteria[63].

In the case of methods based on the analysis of the content of speech, it is difficult to talk about the direct detection of lies because these methods are often based on the so called Undeutch hypothesis[64] whereby,

a. statements based on personal experience of the witness will differ in terms of the form and contents (qualitatively and quantitatively) from insincere statements and
b. the person testifying honestly will differ from those who insincere in terms of motivation, which translates into the content of the testimony.

It also indicates that according to the model of reality monitoring (Johnson, Raye, 1981), memories of real events differ from imagination and false memory. True memories of real personal experiences reflect perceptual processes occurring in the course of their acquisition (e.g. contain information about smells, tastes, colours etc.), and emotions and memories based on ideas contain more reasoning and cognitive processes. This model has been adapted by researchers for the assessment of the evidence on the need to create tools to detect insincere testimony (Reality Monitoring – RM, Reality Monitoring)[65].

It is easy to figure out methods that are created on the basis of the aforementioned hypotheses can indeed differentiate between testimony based on an actually survived factual event and the testimony of the completely imaginary, but do not allow the detection of which **items** are inaccurate events (inconsistent with reality) or deceptive (as to which elements of the testimony are made up). It is not difficult to imagine a situation in which an honest witness tells a true account, e.g. bank robbery, but conceals some information (e.g. small elements of his behavior) or inaccurately recalls some things (e.g. appearance of the perpetrators). In this case, the use of methods based on an analysis of speech content can be problematic, because it will only indicate that the viewer actually survived a bank robbery but it will be very difficult to point out which parts of his speech are intentionally falsified. In other words, as similar to the case of linguistic methods or other methods based on the analysis of behaviour, in methods based on analysis of a statement, the detection of an isolated lie is not an object of interest as to a single detail or – as in a polygraph examination – to an area limited by the test questions, only the evaluation of the frankness of the witness, understood as related to the event which indeed was survived.

Therefore, initially such methods as CBCA (Criteria-Based Content Analysis, based on the criteria of evaluation of evidence) were used only to evaluate the testimony of sexually abused children[66], and now it can be said that these methods are useful even in the testimony of children – victims of other types of crime[67],

61 V. Hauch, I. Blandon-Gitlin, J. Masip, S. Sporer, *Are computers...*, op. cit.

62 e.g. F. Arntzen, *Psychology testimony of witnesses*, PWN, Warsaw, 1989.

63 M. Steller, G. Kohnken, *Statement analysis: Credibility assessment of children's testimonies in sexual abuse cases,* [in:] D.C. Raskin (ed.), *Methods in Psychological criminal investigation and evidence*, pp. 217–245, New York, NY: Springer 1989.

64 U. Undeutsch, Beurteilung von der Glaubwürdigkeit Zeugenaussagen, [in:] U. Undeutsch (ed.), *Handbuch der Psychologie*, Band 11: Forensische Psychologie, Göttingen: Hogrefe 1967.

65 S.L. Sporer, *Reality monitoring and detection of deception*, [in:] P.A. Granhag, L.A. Strömwall (ed.), *Deception of detection in forensic contexts*, Cambridge University Press, Cambridge, 2004, pp. 64–102.

66 Mainly in order to determine whether abuse has actually taken place – e.g. A. Craig, R. Scheibe, D.C. Raskin, J.C. Kircher, D. Dodd, *Interviewer questions and content analysis of children's statements of sexual abuse* „Applied Developmental Science," 1999, 3, pp. 77–85.

67 K. Pezdek, A. Morrow, I. Blandon-Gitlin, G.S. Goodman, J.A. Quas, K.J. Saywitz, *Detecting deception in children: Event familiarity Affects Criterion-Based Content Analysis ratings,* „Journal of Applied Psychology" 2004, 89, pp. 119–126.

children witnesses[68], adult witnesses[69], adult victims[70] and offenders[71].

To sum up, in the case of methods based on the analysis of the content of testimony, it is difficult to talk about "lie detection" (as in the case of polygraph testing); the term "assessment of the sincerity of testimony" seems more accurate or, more precisely, the "assessment of how likely it is that the witness survived the event in the broad outline described".

One of the most frequently used methods of assessing the sincerity of the content of the testimony by experts in the US, Germany and the Netherlands, is the SVA (Statement Validity Analysis, Quality Evaluation Testimony) procedure[72]. This procedure consists of four parts. Firstly, the expert acquaints himself with the case file, mainly to look for information about the witness and the event and to pre-analyse the testimony. The second part is a structured examination of the witness, which should be recorded and then transcribed because the next part of the procedure relates solely to the analysis of the content of speech. Analysis carried on video, for example, is wrong because the assessment of an expert can affect the behavior of the witness, his appearance or other non-substantive factors. Also incorrect is to conduct analyses the content of testimony based on the record of hearings, because in general they do not contain accurate witness statements, but only reformulated and drawn up by the examining person. Moreover, the scope of the statement of the examinee, strengthened in the form of a protocol, is often stimulated with questions of the examiner which are not recorded in the protocol.

The third element of the SVA procedure is Criteria Based Content Analysis (CBCA previously mentioned), and the last, the so-called Validity Checklist, which works in testimony obtained from psychological characteristics (e.g. if the witness speaks appropriate to their age and knowledge), the characteristics of the hearing itself (e.g. if it was not conducted in a prompted manner), aspects of incentive (e.g. why the witness decided to give evidence), and compatibility with other testimony or laws of nature.

In the words of the developers[73], the most important step in the SVA is the interrogation, and then the CBCA. The CBCA itself consists of 19 criteria related to the semantic features of the content of the testimony, which more often appear in non-deceptive testimony (concerning the events of which were actually witnessed) than deceptive (on imaginary events). These criteria are, for example, the logical structure of the statements (criterion 1), number of details (criterion 3) or reconstruction of the statements (criterion 5). It is assumed that the testimony of the true criteria will be of a greater intensity than a false testimony. More specifically, in the testimony of sincere people, those trained in the use of CBCA methods should more often state the existence of the logical structure of the statements, diagnose a greater number of details or more likely to state the existence of a statements or parts of conversations cited in their original form than in imaginary testimony. The 19 truth criteria were identified on the basis of many years of experience and observation and have been verified in numerous scientific studies. In general we can say that most of the criteria actually occur more frequently and with greater intensity in sincere testimony, i.e. on experienced, true events[74].

A similar, though not such comprehensive method for assessing the content of the testimony, is the Reality Monitoring (RM). This tool is comprised of 8 or 7 criteria[75]. These criteria are based on well-described and validated psychological theories concerning the formation of memories and relate, for example, spatial information (in a sincere testimony there should be more), transparency (sincere testimony should be more lively and transparent) and feelings (the more the emotions described in testimony, the more likely it is based on the actual survived event). Although it may seem that methods such as SVA or RM, are fairly easy to learn, the researchers suggest that in order to be proficient in seeking out the criteria requires lengthy training[76].

Evaluating testimony using CBCA or RM is more or less the same way and is usually done in two phases. In the first phase, the expert seeks criteria for the

68 A. Vrij, L. Akehurst, S. Soukara, R. Bull, *Let me inform you how to tell a convincing story: CBCA and Reality Monitoring Scores as a function of age, coaching and deception*, „Canadian Journal of Behavioural Science," 2004, 36, pp. 113–126.

69 Ibidem.

70 K. Landry, J. Brigham, *The effect of training in Criteria-Based Content Analysis on the ability that detect deception in adults*, „Law and Human Behavior" 1992, No. 16, pp. 663–675.

71 S. Porter, J.C. Yuille, D.R. Lehman, *The nature of real, implanted, and fabricated memories for emotional childhood events: Implications for the recovered memory debate*, „Law and Human Behavior" 1999, 2, pp. 517–537.

72 M. Steller, G. Kohnken, *Statement*..., op. cit.

73 G. Kohnken, *Statement Validity Analysis and the detection of the truth*, [in:] P.A. Granhag, L.A. Strömwall (ed.), *The detection of deception in forensic contexts*, Cambridge University Press, Cambridge, 2004, pp. 41–63.

74 R. Volbert, M. Steller, *Is this truthful testimony, fabricated, or based on false memory? Credibility assessment 25 years after Steller and Köhnken* (1989), „European Psychologist" 2014, pp. 207–220.

75 S.L. Sporer, *Reality*..., op. cit.

76 V. Hauch, S.L. Sporer, S.W. Michael, Ch.A. Meissner, *Does training improve the detection of deception? A meta-analysis*, „Communication Research" 2014.

only a cautious inference about the sincerity as a whole of a specifically defined statement, whereby there seems to be no doubt that the diagnostic value of the polygraph test is, of all these methods, the highest, comparable to the diagnostic value of others routinely used in forensic identification methods, sufficient for any indirect evidence.

Translation Ronald Scott Henderson

Source

Tab. 1: authors

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