

Decisions To Be Taken in the Use of Polygraph Examinations for Verifying Complaints About Violence: Analysis and Policy Recommendations[†]

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Abstract

The paper introduces the basic logic and assumptions underlying the most widespread polygraph technique, the Comparison Question Test. It then indicates that two of these assumptions encounter difficulties in cases involving victims of violence, which could increase the danger of error on the test. To handle this problem, it is required to take a few decisions related to specific professional procedures as well as to implement a special policy. Another line of problems stems from ethical considerations. The main point in this respect is that being polygraphed is quite an unpleasant experience. This is more so when the examinee is an authentic victim of violence whose complaint is under investigation. Polygraphing such a person adds to the suffering of the victim. The ethical question becomes a practical one, namely how to determine the situations in which polygraph examination on an alleged victim is, nevertheless, justifiable and differentiate them from other situations. A conceptual cost–benefit analysis is presented in this regard, and the need for taking specific decisions by the polygraph examiner, the criminal investigator, and the commanding officer, when facing the option of using the polygraph for investigating complaints about violence, is pointed out, together with a recommended policy. Copyright © 2013 John Wiley & Sons, Ltd.

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INTRODUCTION

Decision making in law enforcement and criminal justice systems is a complex and multi-factorial issue. Knowing the truth about the handled cases is one of the most important and

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basic factors in such systems. Basically, that is why we are looking for evidence. Evidence, so to speak, should be able to tell us the objective truth.

Although that might very well be the case when enough scientific ‘hard’ evidence is available, still, most of the cases are quite short of them. In those cases, we tend to rely upon statements or testimonies given by people who were either bystander witnesses or actually involved. We may either believe them or not, and by so doing, we supposedly gain knowledge about what, in fact, occurred, that is, ‘having our hands on the truth’. Alas, every reasonable person realises that this specific way of acquiring the truth is very vulnerable to human weaknesses. Those who make the statements might err owing to perceptual and memory dynamics (Loftus, 1979/1996) or deviate on purpose from the truth, that is, simply lie (Elaad, 2005; Vrij, 2008), and those who get them might err in their subjective decision to accept the statements or the testimonies as reliable descriptions of the actual truth or decide about their falsehood (Vrij, 2008). In fact, researches have shown that the ability of police officers to differentiate between liars and truth tellers is quite poor (e.g. Ekman & O’Sullivan, 1991; Vrij & Graham, 1997; Vrij, Mann, Kristen & Fisher, 2007; Vrij, 2008), although they performed somewhat better when real-life high stake cases were used (e.g. Mann, Vrij & Bull, 2004; Vrij, Mann, Robbins & Robinson, 2006; but see Vrij & Mann, 2001). Therefore, any techniques that might help validate the statements in a more objective way should be regarded as a useful and valuable tool for improving decision making. Methods that have been suggested for this purpose rely on three sources of outputs originated from the person who makes the statement or testify—verbal behaviour, non-verbal behaviour, and physiological activity. Over the years, several methods of deception detection or actually methods for differentiating truth tellers from liars have been developed on the basis of analysing these spontaneous or probed-by-the-investigator outputs (see Vrij, 2008, for quite a comprehensive review). As for now, the bottom line of all these attempts has been well summarised by Vrij in the following phrase:

A review of the scientific literature . . . reveals that truth and lies are detected well below perfection with each of these veracity assessment tools. However, it also shows that with several of these techniques truths and lies can be detected more accurately than by simply observing someone’s non-verbal and verbal behaviour. (Vrij, 2008, p.10)

Psychophysiological detection of deception (PDD), better known as polygraph examination, despite having a long controversial history, is one of these tools. Indeed, those who support its usage consider it to be a very powerful tool for improving decision making at various junctions that characterise the kind of work found in the law enforcement and criminal justice systems (e.g. Elaad, 1991; Matte, 1996, 2012; Raskin & Honts, 2002). However, there are quite a few opponents who point out its weaknesses, limitations, and potential dangers embedded in the use of polygraph or at least in certain types of methods and usages found in the field (Ben-Shkhar & Furedy, 1990; Iacono & Lykken, 1999; Ben-Shkhar, 2002; Vrij, 2008).

The present paper intentionally refrains from deeply discussing the existing controversy about the general use of polygraph and, in particular, the Comparison Question Test (CQT), for detecting deception (e.g. Honts, 2004; Iacono & Lykken, 1999; Kleiner (Ed), 2002a; NRC, 2003; Raskin & Honts, 2002; Raskin, Honts, & Kircher, 1997a, 1997b; Vrij, 2008). The importance of this controversy can hardly be overestimated in the deception detection arena, but for the purpose of this paper, it is somewhat out of focus. The fact of the matter is that polygraph examinations are used on a routine basis by law enforcement forces in tens of countries around the world that accept them as a means for improving the

process of decision making and by that, affecting scores of people. Given this fact, the author thinks it is important to point out for those who use the polygraph that even from a pro-polygraph perspective, its usage in cases of alleged victims of violence is problematic and needs special considerations and precautions to be taken not only by the examiners but also by other parties who are involved in the use of the polygraph, such as the investigator who orders the test or the commanding officer who is responsible for the policy adopted by the law enforcement unit. The purpose of this paper is to clarify the sources of these needs and to point at the specific steps to be taken in the decision-making process in this regard.

Violence, and especially sexual violence, by its very nature, usually takes place when only the offender(s) and the victim(s) are present. In many instances, it becomes entirely a matter of the words of the complainant(s) against the words of the accused offender(s). That seems to be a perfect case to be explored by PDD, and in many occasions in police forces that use the polygraph, polygraph testing might be suggested to the parties.

Two different types of problems (as specified later), however, face the use of the most common technique, the CQT¹, in these cases. One is professional, in essence, and the other relates more to the ethical sphere. The general professional problem is that under certain conditions, running the test on victims of violence might violate some basic reasoning and assumptions that underlies the CQT technique. Thus, although meant to improve the situation for decision making, one can end up with adversely affecting his or her capability to make a correct decision.

Unfortunately, many polygraph examiners and even more so the customers of the PDD results (i.e. police investigators, prosecutors, private attorneys, and judges) are not fully aware of this problem.

The general ethical or moral problem is the dilemma of deciding about the relative importance of pursuing the truth considering the expected unpleasant experience that the complainant, who might be a real victim, has to go through, when under the PDD test.

This paper intends to analyse the usage of CQT in cases of suspected violence, in relation to these two main types of problems.

GENERAL DESCRIPTION OF THE COMPARISON QUESTION TEST TECHNIQUE

For those who are not familiar with PDD techniques, the following is a short basic introduction to them. There are several different polygraph examination techniques for the detection of deception, but all of them rely upon measuring the examinee's involuntary physiological reactions to some sort of stimuli presented to him or her by the examiner, mainly verbal questions. It is a well-established fact that people tend to react with phasic changes in the autonomic nervous system activity, to such stimuli, and that many of these changes are detectable with various sensors that can be attached (physically or otherwise) to the person (Matte, 1996). When these attached sensors via transducers are connected on their other end to a machine that draws several graphs simultaneously, each representing, in an analogue mode, some of the detected continuous physiologic information, we are

¹Another polygraph technique that might be considered in such cases is the less controversial Guilty Knowledge Test known also as Concealed Information Test. This test is based on orienting reflex reactions to concealed information details that can be detected in guilty examinees because of their guilty knowledge. But owing to its nature, it is almost totally limited for testing the suspect and not the alleged victim. Also, in real-life situations, many of the incidents are not qualified for this test (Ben-Shakhar & Elaad, 2002, 2003;BPS Report, 2004; Elaad, 2011).

facing a physiological analogue polygraph in action. Nowadays, the analogue polygraph has been replaced in most instances by a digital computerised polygraph. However, to use the polygraph as 'lie detector', we must assume a few things, which go far beyond the simple detection and presentation of graphs that represent the physiological continuous activities and the phasic changes accompanying the introduction of stimuli, mostly questions, to the examinee.

Basically, we have to assume that it is possible to tell the difference between the questions in terms of their being answered truthfully or untruthfully by analysing the physiologic reactions. Alas, the fact is that there are no detectable specific physiological features representing deception or truth telling (Ben-Shakhar & Furedy, 1990).). As a matter of fact, one might say that the main concern of the various techniques or methods of polygraph examination has always been (sometimes without awareness) how to deal with this 'impossible' situation, namely how to differentiate between 'deceptive' and 'non-deceptive' physiological reactions in the absence of their actual existence.

The most common technique used by polygraph examiners in testing specific incidents (as distinct from general screening tests) is some variation of the so-called Comparison Question Test (CQT), previously known as Control Question Test. Originally, the CQT was introduced by John Reid in the late 1940s and since then has evolved in several routes to more than a dozen variations (for historical perspective, see Matte, 1996, 2012).

The CQT includes three basic types of questions:

- 1) Relevant questions—These questions deal directly with the issue under investigation; for example, 'Did you steal the golden ring from the drawer in Mr. Smith's office?' Because it is possible to ask in this technique only 2–5 relevant questions, they should focus on the important and critical aspects of the case from the point of view of the investigation, as well as being central from the presumed psychological perspective of the examinee. The questions should be very precise in nature, to preclude any potential misunderstanding, and the examinee must know for sure whether he or she is lying or telling the truth when answering each question, meaning that the possibility of answering them whilst being uncertain of their truth should be avoided. Therefore, the questions should be focused on specific actions rather than intentions, thoughts, sentiments, or interpretations that by nature might be more fluid.
- 2) Irrelevant questions—These are usually insignificant neutral questions to which the ground truth answers are known; for example, 'Are we now in Boston?'
- 3) Comparison questions—Questions that the physiological reactions to them should be compared with those of the relevant questions. These questions usually, but not necessarily, deal with some probable misdeeds of the examinee that resembles the relevant issue; for example, 'Have you ever taken, without permission, something of value that did not belong to you?'

Contrary to the relevant questions, the comparison questions are purposely designed not to be very precise, which brings people many times to wonder about the real truth of their own answers. The generic term of this type of questions is probable-lie comparison questions, and it should be distinguished from another type of comparison questions, the directed-lie questions, which has been proposed as a remedy for some problems inherent in the probable-lie questions. Both types are part of the CQT (Raskin & Honts, 2002), but unless mentioned specifically, when the CQT is dealt in this paper, it relates to tests that use probable-lie and not directed-lie comparison questions.

All the questions (two to five of each type) are designed to yield a single-word reply of yes or no and are developed through a specially designed pre-test interview, between the examiner and the examinee, that typically lasts for an hour. During the interview, the case is discussed in a non-interrogative manner, and the comparison questions are developed in such a way that the examinee tends to choose to lie about them or at least has internal doubts about the truthfulness of his or her chosen answers. The whole list of questions must be approved by the examinee during the pre-test interview, and no extra question may be added in later stages unless the examinee consents to each one of them, following a specific discussion procedure.

During the pre-test interview, the examiner also explains to the examinee the general procedure and introduces the polygraph. At the end of the pre-test, the examinee is connected to the physiological sensors, and the test phase begins. The test usually consisted of three to five repetitions of the same series of questions in different orders, with breaks between them. Each repetition takes about 5 minutes, and during the intermissions, some sort of short conversation occurs at the initiation of either the examinee or the examiner, according to the specific needs.

Although the atmosphere must be more of an interview rather than interrogative in nature, it is always an unpleasant situation and often includes a significant amount of intensive and concentrated tension. People also may feel as if their privacy has been invaded, either due to the type and content of the discussion, which is developed during the pre-test interview, or just due to the feeling that they are 'X-rayed by the polygraph'.

The claimed rationale behind the CQT² is that guilty people, knowing that they are lying, will focus their anxiety on the relevant questions. Innocent people, in contrast, will be more concerned with the comparison questions in which they have been skilfully manipulated by the examiner to choose answers that were probable lies, or at least they could not be certain of their truthfulness. This differentiation in concerns between the guilty and innocent examinees will be manifested in the locus of their most vigorous psychophysiological autonomic reactions.

The decision rule is that when comparing the strength of the reactions within each examinee between the relevant and comparison questions, those who manifest stronger reactions to the relevant questions are considered deceptive with respect to the relevant issue, whereas those who manifest stronger reactions to the comparison questions are probably telling the truth regarding the relevant issue. In case the difference between the strength of reactions to the relevant and the comparison questions is not big enough (subjects to certain criteria) or not consistent, the test is deemed inconclusive. For more detailed description of the test, the interested reader is referred to Matte, 1996, 2012 or Raskin & Honts, 2002.

Another way of explaining the CQT assumes that on average, guilty people's minds are much more pre-occupied with the relevant issues than those of the innocents, and therefore, their ability to pay attention to the comparison issues is limited relative to the non-guilty examinees. This idea has been introduced and termed by Ginton (2009) as Relevant Issue Gravity (RIG) strength. There are many reasons to believe that it is a valid assumption, but for the present purposes, I will mention only one.

²There are several suggested theoretical frameworks, to mention two of them: The so called 'psychological set' suggested by Cleve Backster in the early 1960s and the 'differential salience', which has been presented by several authors lately (for further clarifications of both concepts, see Senter, Weatherman, Krapohl & Horvath, 2010).

The guilty person in usual cases, for example, the thief, the arsonist, the murderer, and the rapist, are people who carry in their memories the actual events, which are the basis for the investigation. The criminal act that they are suspected of committing is not an abstract issue but rather a real event for them.

That is not the case for most of the innocent suspects who face these kinds of allegations. For the innocent suspect, the specific crime that he or she is suspected of committing is just an abstract idea. They do not have real memories in that respect. This difference shapes the kind and the intensity with which they are processing the event in their minds, cognitive wise as well as emotionally, and, in turn, influences differentially their ability to disengage from the relevant issue and divert their attention to the comparison issues, when those are brought up by the examiner.

It is important to note that the test is not about detecting specific deceptive physiological reactions; 'Pinnocchio effect' does not exist. Rather, it is about detecting physiological reactions that correlate with the relative significance or salience of the stimuli (the questions), for the examinees during the test, and the level of concern that they induce in them (Ginton & Ber, 1992; Kleiner, 2002b; Senter, Weatherman, Krapohl & Horvath, 2010). Thus, one should never forget that the very same physiological activity may occur owing to other reasons that bear no relation whatsoever to deception (e.g. outside noise, an unexpected question, a certain mental association, or even a spontaneous physiological activity).

Assuming that every examinee, whether guilty or innocent, is worried about the relevant issue and each relevant question might be very significant for them, reactions are expected to occur to these questions. The essence of the CQT method is that by introducing the comparison questions, the focus of concern and saliency for the truth tellers is diverted from the relevant issue to these questions, resulting in stronger reactions compared with the reaction induced by the relevant questions. It is critical that this should be achieved without changing the focus and level of concern and saliency that the deceptive examinees have towards the relevant questions. Clearly, it is a very delicate matter to succeed in diverting the attention of the truth tellers without so doing to the deceptive examinees (Ginton, 2009). Needless to say, at that stage, the examiner does not know who is who. The best way to achieve it is by adopting a tailor rather than a factory made manner in the way the comparison questions are developed and their specific contents are formulated, namely adjust the way of conducting the pre-test interview to the case and to the specific person who is being tested. This practice required psychological sensitivity, sophistication, and skill on the part of the examiner in order to obtain an accurate outcome and by nature resulted in reduced standardisation, an issue that has been pointed out by the critics as one of the basic flaws of the CQT (e.g. Ben-Shakhar, 2002; Vrij, 2008).

The rationale and the practical framework of the CQT, as well as its validity, are very controversial issues (OTA, 1983; Ben-Shakhar & Furedy, 1990; Raskin & Honts, 2002; NRC, 2003). Whereas some have claimed the accuracy of the decisions made on deceptive examinees to be in the region of 90% and 80% for truth tellers (e.g. OTA report, 1983; Elaad, 1991; Raskin & Honts, 2002; Ginton, 2012), other have suggested a much lower figures or argued that it is not possible to have any reliable estimation owing to a lack of a good body of research (Ben-Shakhar & Furedy, 1990; Iacono & Lykken, 1999; Vrij, 2008). A comprehensive review of the then existing body of knowledge made by The Committee to Review the Scientific Evidence on the Polygraph, which was appointed by the National Research Council of USA (2003), resulted in the following conclusion:

Notwithstanding of the limitations of the quality of the empirical research and the limited ability to generalize to real world settings, we conclude that in populations of examinees such as those represented in the polygraph research literature, untrained in countermeasures, specific-incident polygraph test can discriminate lying from truth telling at rates well above chance, though well below perfection. (NRC, 2003 p.4)

This statement is based on Receiver Operating Characteristic (ROC) analyses³ that reached a median accuracy index of 0.86 in laboratory studies (p.122) and 0.89 in field studies (p.125).

Beyond the validity issue, one should keep in mind that in real life, because the measured physiological reactions are not unique to deception and may be affected by many noise or irrelevant factors and owing to the need to keep the right balance between the relevant and comparison questions, it is a very complicated and delicate test that is vulnerable in many ways (see also Vrij, 2008); being a victim is one of them.

POLYGRAPHING VICTIMS OF VIOLENCE: A PROBLEMATIC ISSUE

Violation of two fundamental aspects and assumptions

Because this paper does not intend to function as a comprehensive professional guide for polygraph examiners in dealing with polygraphing victims, only the problems that seem to be important for understanding the various policy recommendations are discussed. Nonetheless, it is worthy just to mention that some important factors, in which the need for their considerations in any polygraph examination is regarded common knowledge amongst the examiners, might deserve special attention in the case of victims of violence. That includes, for instance, health conditions in terms of physical and psychological aspects, a reasonable rest period before the test, and the existence of a clear full statement about the case.

More specific professional problems that seem to be quite unique to the situation of polygraphing victims of violence stem from the violation of two fundamental aspects and assumptions of the CQT. The first has to do with a main aspect in the reasoning behind the assumption that the deceptive examinees tend to focus mainly on the relevant issues whereas the non-deceptive are expected to focus on the comparison questions. As described earlier, one of the factors contributing to this differentiation in common cases whilst testing suspects is the existence of real memories about the incident in the mind of the deceptive suspect contrary to a total lack of such relevant memories in the mind of the innocent examinee. This difference results in different amounts of pre-occupation of their mind with the relevant issue and affects their capabilities to switch their attention from the relevant issue to the comparison questions when they are introduced to the examinees. That very reasonable assumption is violated when dealing with certain kinds of victims. It is the complainant who tells the truth who has the memories to tie him or her to the relevant issue and by that makes it more difficult for him or her to divert the attention to the comparison issues. Note that due to the traumatic nature of these memories, this effect is even augmented. In the same vein, the false complainant might have nothing to remember because nothing did happen, and therefore, his or her attention could easily be maneuvered to focus on comparison issues.

³Receiver Operating Characteristic (ROC) analysis is a method used in signal detection theory to measure detection accuracy. The method has been adopted for evaluating success of medical and behavioural tests. In a ROC curve the true positive rate (Sensitivity) is plotted in function of the false positive rate (1-Specificity) for different cut-off points of a parameter. Each point on the ROC curve represents a sensitivity/specificity pair corresponding to a particular decision threshold. The area under the ROC curve (AUC) is a measure of how well a parameter can distinguish between two diagnostic groups (e.g. diseased/normal or liars/truth-tellers).

Because there are also other factors contributing to the differentiation in the locus of attention, between innocents and deceptive examinees, (Reid & Inbau, 1977; Kleiner, 2002b), and those have not been violated, the aforementioned violation is not enough for totally turning the differentiation upside down. Rather, its contradictory effect compared with those of other factors might result in a higher proportion of errors.

Another problem stems from the need to formulate relevant questions that ought to be central to the issue, from the investigation perspective, and from the psychological state of mind of the examinee; very precise in nature; and not containing the possibility to be answered in an uncertain way. Unfortunately, there are cases where the very nature of the event makes it hard to achieve all of these. Consider the following example:

A teenager girl complained of being raped 2 days earlier by a driver who gave her a lift in his car. The man, who has been located, denied the allegations. According to his version, he tried to make a pass at her in a legitimate manner, and although at the beginning she refused, eventually, she agreed to have sexual intercourse with him and was fully cooperative in this respect. To support his version, he also stated that she fully undressed herself voluntarily. Contrary to that, her version was that she objected to his attempts to make a pass at her; however, he kept trying to persuade her, and his persisting attempts frightened her, and she felt she could do nothing against him. At that stage, she became almost paralysed and stopped arguing with him. As a result, he could take her clothes off and raped her in the car. Although she did not mention any use of brutal force, physical struggling, or even explicit acts of threatening her, still she denied any cooperation from her side and claimed that the sexual intercourse was against her will.

Without getting into the legal problem of whether that should be considered a rape, suppose it does make a difference for the investigation to find who is telling the truth. From a polygraphic perspective, it is impossible to ask a relevant question strictly targeted to the rape issue, because it has to do with thoughts and intentions and not with actions. The action was sexual intercourse, but whether it was rape or not, in terms of the psychological state of mind of both parties, is a matter that cannot be tested using the polygraph. The only objective difference between the two versions is her undressing, and that might be suitable for formulating proper relevant questions. However, that might be incompatible with the need to concentrate on the most important aspects of the case in terms of the psychological perspective of the examinee. It is expected that the act of the intercourse might be psychologically more important for her than the undressing issue. Sometimes, it occurs that the only available details suitable for formulating relevant questions are even more insignificant pieces of information in terms of their psychological significance. Asking relevant questions, which are not central to the complaint and to the presumed psychological state of the alleged victim, violates a main point in the rationale of the CQT and might increase the error rate in detecting deceptive examinees.

No one knows exactly what the actual impact of these two fundamental violations on the error rate in polygraphing victims of violence is, but there are some empirical indications that show higher rates of errors in such cases when compared with the average rate found in other cases (Ginton 1986,⁴ Horvath 1977, Raskin 1986).

For the situation to be remedied, some very specific professional steps should be taken in the way the test is conducted. For instance, in order to compensate for the first violation mentioned earlier, the examiner should act to weaken the potentially adverse effect on the test that vivid memories from the incident carried by a true victim might have. That can be

⁴Analysing pairs of real-life examinations in which two opposite versions were given by two examinees per case showed that physical violence cases contributed a disproportionate number of errors relative to other kinds of contradicting versions.

achieved by avoiding direct relevant questions on the test such as 'Did Jack slapped on your face last Sunday evening in his apartment?' and substitute it with a written statement confirmatory test, in which the examinee writes a very short statement describing certain main points in his or her complaint, and the relevant questions on the test will be, 'Did you lie to me on the first point in the written statement you have just gave?' By so doing, the focus of the relevant questions during the test moves from the probably traumatic incident with all the vivid memories to the act of telling the truth or lying on the test.

Then, another step should be taken by the examiner to strengthen the relative salience of the comparison issue during the pre-test interview in order to increase the probability that alleged victim who tells the truth will divert her/his attention from the relevant sphere to the comparison one. Unfortunately, that might increase the sense of uneasiness that the examinee usually has towards the test, since it is achieved by deeply digging into personally embarrassing matters.

These two measures aimed at lowering the load of the relevant questions and elevate the load of the comparison questions in order to cope with the increased rate of false positive expected to occur when applying CQT for testing alleged victims of violence, owing to the violation of a basic assumption as specified earlier. By so doing, it is hoped to prevent this danger. However, there might be a cost to this achievement, namely an increase in the likelihood of false-negative errors, a phenomenon that has been described by Ginton (2010) as the short blanket phenomenon.

Nevertheless, these suggested steps and some more of a similar kind cannot successfully compensate for all the complications that these violations might arise. It is therefore important that the issue should be addressed with a specific policy.

Moral considerations

Being a victim is obviously a painful experience. When a victim complains about being attacked or abused, most of the time, she or he ought to go through some basic checking and questioning procedures that might revive the psychological aches associated with the incident. Some of these procedures, especially in rape cases, are considered by most people to be unnecessarily humiliating. This raises a moral issue of how much of the inflicted pain, caused by the investigative process, to the already suffering victim, could be justified as unavoidable by-products of necessary means in handling the case. That of course is weighted against the cost for the society of proceeding with an investigation in a wrong direction owing to a shortage of information received from the complainant, or his or her deliberate lying that, in its extreme end, may get to false accusation that might result in inflicting suffering on an innocent suspect.

Whereas that is an issue to consider in any regular questioning procedure, it is even more problematic with the polygraph. As mentioned earlier, being under a polygraph examination is considered to be a very concentrated stressful situation. A specific factor that adds to this uneasiness is the comparison questions that are developed during the pre-test interview. By design, they intend to induce some discomfort and stress, especially to the innocent examinees. Thus, victims who are telling the truth, meaning they have really been victimised, found themselves in a situation in which they might feel of being 'victimised' by the examiner. That feeling might even be enhanced by the examiner's attempts to compensate for the first violation mentioned earlier, through intensifying the digging in some personally embarrassing matters. Thus, in order to achieve a reasonable accuracy in testing victims, professional measures must be taken that might increase the harsh feelings that the examinees usually have during and after the test. Is it always worthy? The circumstances under which this is worthy should be defined. Again, that calls for a specific policy to be developed.

The benefits of correctly detecting the truth about the case and the cost of an error

When considering whether to opt for a polygraph testing or not, one should bear in mind three things. One is the cost of doing the test, in terms of time, effort, equipment, and so forth, and also in terms of the psychological cost for the examinee. The second is the expected benefit of correctly identifying the truth about the case, as well as the cost of an error. The third thing to consider is the validity of the test and the expected error rates. Until now, we have considered some aspect of the first and third points; however, the second one, which reflects the motivation for having polygraph testing, has not been yet addressed.

Generally speaking, knowing the truth is an important factor in decision making; however, that might not be the most important one in every real-life situation. A fair example to that might be the legal situation known as ‘the fruit of the poisoned tree’.⁵ So, there might be reasons beyond the truth, which might affect the intensiveness by which the truth is pursued. Assuming, for the moment, that the polygraph is a hundred percent accurate, still in our society, for reasons that are beyond the scope of this paper, a polygraph testing would not replace the decision of a jury or a judge. Rather, at most, they might consider its result whilst making their decision (see the fingerprint issue for getting the sense of that dynamics). Of course, the matter is even more so, when considering a test whose accuracy rate is well below perfection.

There are situations in which the decision maker, owing to various reasons, is not going to let the polygraph change his or her pre-determined decision, although he or she might be very pleased by a polygraph result that supports his or her decision. Thus, from a point of view that considers the polygraph as a tool for improving decision making, the test is totally useless in such cases. The potential user of the polygraph should ask himself in advance, ‘Would my decision be changed if I had a polygraph result?’. In many cases, the answer is that no matter what the polygraph results will be, the rest of the existing information and the relevant conditions have already determined the decision how to proceed with the case. Whereas in many cases, this kind of answer might reflect ignorance with respect to the potential of polygraph usage, still in some cases, that might also be the answer of a person who is very familiar and knowledgeable with the polygraph. It is important to add that whereas clearly, there is no reason to apply a polygraph test in such cases as long as it is considered to be but a tool for improving decision making, still other considerations do exist that might eventually lead to conduct the test.

Even when the answer to the question of the expected benefit from a polygraph test in a particular case is positive, the cost of a mistake must still be considered. So, for instance, an error of falsely identifying a truthful victim complainant as deceptive will add injustice to the suffering that he or she has already been through. Similarly, a test that fails to identify a deceptive complainant as such will cause damage to an innocent suspect.

A reasonable usage of polygraph testing as a tool for decision making, or for other purposes, must evaluate in advance the expected benefits and costs of having a correct result or making an error in every particular case. The fact that some of the considerations in this respect are different in the case of victims of violence is also a good reason for developing a special policy for examining victims.

⁵The *fruit of the poisonous tree* is a legal metaphor: Evidence seized in an illegal arrest, search, or interrogation by law enforcement is excluded from a criminal trial.

HOW TO DEAL WITH THE ISSUE: A RECOMMENDED POLICY

The policy should be regarded as a means to address the problems raised by the unique encounter between the special characteristics of victims of violence and the very delicate and complex assumptions and procedures that comprise the core of the CQT, in the polygraphic detection of deception. Working within the framework of the policy should increase the probability to achieve a desirable balance between efficiency in working out the truth and other moral considerations. The following recommendations are only those that might be at odds with a more general policy regarding the use of polygraph, or considered to be special extensions or elaborations of the basic policy.

The suggested policy that indicates the kind of decisions to be taken in the use of CQT for testing alleged victims of violence addresses the following questions:

- A. Why or why not to opt for a polygraph examination of an alleged victim of violence in a particular case?**
- B. The question of timing; when should or should not the examination be conducted relative to the time that the incident of violence (as claimed to be by the complainant) took place and relative to the development of the investigation?**
- C. Which questions or specific issues should or should not be addressed?**
- D. What are the expected moves to follow the test? And how should different possible results affect them?**
- E. Whose initiation it should be?**
- F. Who are the potential examinees in each case, and who should be the examiners?**

A. Why or why not opt for a polygraph examination of an alleged victim of violence in a particular case?

It should be cleared that the present paper does not intend to convince police forces that do not use the polygraph to change their minds and start using it (e.g. police forces in the UK, France, and Italy), and therefore, the aforementioned question and the whole recommended policy are relevant only for those that already use the polygraph in criminal investigations to some degree or may do it in the future.

The main reason for using the polygraph in general is to gain more information about the case and, by so doing, to increase the probability that the truth will be reached. Because in polygraphing victims of violence, the existing potential costs and dangers are higher than usual, PDD should be regarded almost as the last resort, and even then, only when the expected benefits from having polygraph results are significant. As already mentioned earlier, the investigator should make clear to himself or herself prior to sending an alleged victim to polygraph what really would be the expected impact of the outcomes on the solution of the case. In many cases, the genuine answer is that the expected impact is actually zero. Obviously, the test should not be conducted in such circumstances. In case that the answer to this question is not that clear but still the expectation to have a result that might influence the investigation is very low, a test may be conducted, but it should be limited to situations in which the tendency of the investigator at that point is not to believe to the alleged victim. The polygraph test in such cases might be the only way the alleged victim can support his or her complaint, and therefore, it is morally justifiable to put the alleged victim through the unpleasant experience of being polygraphed. Of course, if the

expected impact of the polygraph test on the investigation is high, because the picture is not clear, the investigator should opt for the test.

When external reasons for using the polygraph exist, other than gaining more information on the case, one should be clear about them to himself or herself, and the results should be treated very cautiously. Thus, if the main reason was not to gain more information through the test, one should remind himself or herself about that and avoid relying heavily on the results, unless the various specific cautious steps have been taken anyway. An example to that can be a possible policy to require a polygraph test from any complainant against police officers that is not supported upfront by a solid and substantial body of evidence. That policy might be developed to protect police officers from being too vulnerable to false allegations by criminals or frustrated citizens. If that is the case, the polygraph testing is not regarded only as a mean to develop the truth, and therefore, it is reasonable to expect the test to take place even if other sources of information have not been yet exploited. The symbolic value of the test and probably its deterrent effect might be more important for a while than gaining information about the case.

B. The question of timing: when should or should not the examination be conducted, relative to the time that the incident of violence (as claimed to be by the complainant) took place and relative to the development of the investigation

Timing is an important issue. Aside from physiological problems due to injury, the psychological state of mind of victims of violence on the first few days after the incident is usually incompatible with the basic assumptions underlying the CQT. It is therefore recommended to wait with the test for about a week and in no case to conduct the examination during the first 3 days following the violent incident. Even then, a careful consideration of the psychological state of the potential examinee should be taken, before starting the test. On the other extreme, victims might repress many of the details about the case, so that might cause difficulties in testing them too late. Hence, it is not recommended to test them after several months, unless the specific questions of interest are very salient and claimed to be remembered by the complainant.

Another time factor relates to the progress of the investigation or the judicial process. Is there any preferable stage to conduct the test? The answer is somewhat complicated because it depends on several factors.

We can differentiate the cases into those in which the complainant can identify the offender(s) and those in which the offender(s) is an unknown person. In the case of an unknown offender, it is possible to further differentiate between those in which the complainant provides enough information about them to enable some active search for them and those in which there is practically nothing to do about tracing them. In the latter case, no polygraph examination is recommended at any stage, even if for some reason there is a tendency not to believe the complainant. The cost of his or her being deceptive in their complaints is usually very low, not to justify the potential moral costs connected with polygraphing an authentic victim.

When an active search is possible and conceivable as well, one should consider the usage of the polygraph before making a gross move that might be very expensive and cause inconvenience to some people. However, it is important to remember that in no case an immediate polygraph test should be applied, and some gross moves might be needed to be taken much before it is proper to test the complainant.

If the complainant can identify the offender(s), the suspects should be traced first, and only after having his or her version should a polygraph option should be considered, if suitable. In that situation, it is highly recommended to test both sides independently. Testing both sides is one of the most important points in the recommended policy, as discussed later in this paper.

C. Which questions or specific issues should or should not be addressed?

As mentioned earlier, in CQT, the relevant questions should focus on the most important and critical aspects of the case from the point of view of the investigation, as well as being central from the presumed psychological perspective of the examinee. However, that might be problematic in polygraphing an alleged victim of violence. That is because in many cases, this sort of question is prone to be answered in a very subjective and/or uncertain manner that relates to intentions, thoughts, sentiments, or interpretations rather than to specific facts or actions. A proper relevant question should deal with facts and not feelings or thoughts that by nature tend to be objectively more fluid than concrete actions. Thus, given the demand that relevant questions should address clearly defined objective actions, sometimes it is not possible to formulate relevant questions that are central to the issue or to the subjective experience of the examinee, and the examiner ends up formulating question that are off centre. If the only questions that satisfy this condition are an extreme deviation from the core of the matter, either psychologically or for investigative purposes, the test should not be ran. Another limitation is that the questions must avoid being offensive or rude both in their meaning and in their wording.

In case the version of the suspected offender is available, the questions should address the very defined specific dispute between the versions.

Whenever possible, the questions posed to the alleged victim should not be phrased in a straightforward manner but rather as a confirmation of specific written statements given by the examinee during the pre-test interview.

D. What are the expected moves to follow the test? And how should different possible results affect them?

The question of what to do after the polygraph testing is very crucial. It is recommended to plan in advance the following steps to be taken, contingent upon the various possible polygraph outcomes. Thinking ahead might occasionally save the test altogether, simply by clarifying the lack of any expected impact of its result on the next moves.

E. Whose initiation it should be?

From the present point of view, the test should first and foremost serve the investigators or other officials in similar capacity. It therefore seems natural to expect them to initiate its occurrence. However, initiation might also come from the victims or the suspected offenders. In any event, that should not change the rules of applying caution in deciding about the test. The very fact that a victim might ask and even insist on being polygraphed does not mean that he or she realises all the possible consequences nor does it change the dangers or even the costs associated with the test. So, although not being able to prevent

private testing, still in no way an automatic acceptance of an offer made by the victim to take a test should be applied, nor it is recommended to automatically accept private test results as a proper substitute for the law enforcement test.

F. Who are the potential examinees in each case, and who should be the examiners?

When dealing with sexual offences, it is recommended that the examiner be of the same gender as the examinee, to prevent further complications in terms of the psychological factors affecting the tests.

Whenever both sides, the complainant and the suspect, are taking the PDD test, it is recommended that they be tested by different examiners to increase objectivity. In the same token, however, both examiners ought to be familiar with the complete versions of the two examinees. It is also recommended that, if possible, the Guilty Knowledge Test be conducted to the suspect at the end of the CQT.

Testing both sides is an issue that deserves some detailed discussion. The possibility of having two opposite versions to be tested on the polygraph compensates to a very high degree for the handful of specific problems and dangers existing in polygraphing victims of violence. The results of the two opposing tests can be regarded as a cross-validation process (Ginton, 2012). Thus, if the questions on the tests are properly chosen to target points that objectively differentiated between the two versions, then a correct set of results should include one deceptive and one non-deceptive outcomes. In any event that the results are either two deceptive or two non-deceptive outcomes, a mistake must have been made on one of the tests. Because it is impossible to determine which of the two obtained a wrong result, both must be disregarded. Contrary to that, when the results indicate one deceptive and one non-deceptive outcomes, it means either two correct results or two mistakes. The probability of having two mistakes is the multiplication of the probabilities of having a mistake on each one of the tests. While the error rate of testing a victim might be higher than in regular tests, the cross validation by testing the suspect might remedy the situation and bring the expected error of the decision taken about the case to an acceptable range. It is therefore very important to have both sides taken the test. It should be added that testing both sides of a dispute is also important as a means to weaken the effect of potential successful countermeasures introduced by a deceptive examinee.

On the basis of professional considerations, the result of any test should be kept in secrecy until all other tests are finished. So, the examination of the other side should not be contingent upon some kind of a result from the first test. Any violation of this rule might jeopardise the whole benefit that stems from testing both sides. It is also important that both sides know that piece of policy before the tests are started, to eliminate speculation about the result of the other test. When the outcomes of the examinations are two deceptive or two non-deceptive, an option of reexamining both parties should be evaluated only if the outcomes of the first set of examinations were kept secret.

If the suspect does not agree to take a test, the sense of testing only the victim is questionable, unless some very special conditions or reasons exist. It is also recommended that owing to the higher risk of false-positive outcome in case the polygraph test is administered only to the victim, only a non-deceptive result should be accepted as a valid outcome whereas a deception-indicated result should be ignored, and a no-opinion decision should be taken.

To make a final note, a similar policy regarding the decisions to be taken in the use of polygraph testing for verifying complaints about violence has been applied in the Israeli police for the last few decades (Ginton & Zoltak, 1991) and been found to be very helpful.

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