

# Zombie forensics: the use of the polygraph and the integrity of the criminal justice system in England and Wales

The International Journal of

Evidence &amp; Proof

2021, Vol. 25(1) 16–35

© The Author(s) 2020



Article reuse guidelines:

[sagepub.com/journals-permissions](https://sagepub.com/journals-permissions)

DOI: 10.1177/1365712720983929

[journals.sagepub.com/home/epj](https://journals.sagepub.com/home/epj)**Kyriakos N. Kotsoglou**

Northumbria University, School of Law, UK

## Abstract

The criminal justice system of England and Wales increasingly deploys the polygraph to extract information from released offenders. Although there is little judicial authority regarding the admissibility of polygraph evidence, we should not misinterpret silence as legal uncertainty. The paper will, *first*, show that the central claim for the understanding of the polygraph—i.e. the presupposition that the polygraph indicates deception—is inextricably linked to an obsolete paradigm in psychology (Introspection). *Secondly*, I will turn to first principles in the law of evidence, especially the general ban on opinion evidence and the requirement for scientific validity. The requirement that expert evidence has a sufficiently reliable scientific basis explains why polygraph evidence cannot be adduced at the criminal process. *Thirdly*, I will draw attention to the use of polygraph tests in the context of probation, pursuant to the Offender Management Act 2007. With the use of the polygraph, the criminal justice system does not only infringe the released offender's human rights, but also fails to protect the public. The combination of inadmissibility of the polygraph in the criminal process and its use from probation services creates thus a major contradiction which is detrimental to the integrity of the legal order.

## Keywords

arbitrariness, integrity, law of evidence, opinion rule, polygraph, probation, zombie forensics

In the long run, the greatest danger of expertism is not conscious fraud or charlatanism but rather a tacit conspiracy between expert and audience to accept that which would not stand careful scrutiny because such acceptance is mutually beneficial. (Risinger et al., 1989)

## Corresponding author:

Kyriakos N. Kotsoglou, Northumbria University, School of Law, Newcastle upon Tyne NE1 8ST, UK.

E-mail: [kyriakos.kotsoglou@northumbria.ac.uk](mailto:kyriakos.kotsoglou@northumbria.ac.uk)

## Introduction

### *Lie-detector ante portas*

In a masterpiece of world literature Mary Poppins—upon her return to the Banks family—immediately goes on to enquire how the children have been behaving during her absence. Her pipeline to the children’s soul is an oral ‘Thermometer’ which informs her reliably that Michael has been ‘Careless, Thoughtless and Untidy’ (Travers, 2008: 156). Adults and, arguably, children find this amusing, as they can tell the difference between fiction and science, i.e. between reality and literature. Or can they?

Recent developments regarding the proliferation of pseudo-scientific methods in the criminal justice system are blurring the lines between informed decision-making processes and fact-finding dystopia/science fiction, i.e. between reliable technical devices on the one hand and non-theoretical understanding of human traits and normative concepts such as truthfulness and deception on the other hand. More specifically, the notorious polygraph test is enjoying an unmistakable resurgence of usage. In England and Wales lie-detector tests are currently in use by Her Majesty’s Prison and Probation Service (hereinafter: HMPPS) to monitor sex offenders on parole and manage their level of compliance. Sections 28–30 of the Offender Management Act 2007 enable a ‘polygraph condition’ to be inserted in the release licence of released sexual offenders.<sup>1</sup> This is not a negligible development, given the fact that nowadays sexual offenders amount to ca. one fifth of the prison population and one tenth of offenders under probation supervision (see Stacey, 2019: 5). What is more, there are real stakes in the use of the polygraph test. Individuals who have been found in breach of their licence conditions may be recalled and return to prison at the instigation of their offender manager (for an overview see HPPS, 2019). The remit of the polygraph test is expected to expand with provisions in the Domestic Abuse Bill<sup>2</sup> and the Counter-terrorism and Sentencing Bill (see Ministry of Justice, 2020a) respectively. Finally, the pilot scheme ‘Choices and Consequences’ (C2) run by Hertfordshire Constabulary ‘aims to steer prolific, acquisitive criminals away from a life of crime’ by offering a ‘voluntary lie detector test’ (see Hertfordshire Constabulary, 2019). At the same time the EU has already funded and employed at several airports security systems whose main objective is to secure the external borders of member states with technologies that are ‘ranging from biometric verification [to] automated deception detection’.<sup>3</sup>

### *Zombie forensics*

The examples listed above show that it has become increasingly difficult to ignore the possibility that the major shift in our approach to crime detection and risk-management signals a feature, not a bug in the system. There can be no doubt that the polygraph test is *ante portas*—again. Now, the question is: *Why* is the polygraph increasingly gaining traction? What makes it so appealing that legal systems jettison fundamental evidential principles or, most importantly, one of their core tenets, i.e. rationality, by forcing subjects to undergo polygraph tests? I cannot stress enough that ever since the first deployment of the polygraph criminal courts,<sup>4</sup> scientific institutions,<sup>5</sup>

1. The relevant offences are specified in Part 2 of Schedule 15 to the Criminal Justice Act 2003. In April 2009, the National Offender Management Service (NOMS), as it then was, and more specifically the Offender Management and Public Protection Group (OMPPG), began piloting mandatory polygraph testing for sexual offenders in nine probation trusts in the East and West Midlands Regions. See Gannon et al. (2012). As I will show later in this paper, it is not random that this study (conveniently) focuses on the *utility* of the polygraph, not the *validity* thereof.

2. See the government’s policy paper (Home Office, 2020).

3. Such are the so-called ‘Intelligent Portable Control Systems’ (iBorderCtrl, 2019).

4. See only *Frye v United States*, 293 F. 1013 (D.C. Cir. 1923).

5. See e.g. NRC Committee to Review the Scientific Evidence on the Polygraph (National Research Council, 2003); see also Office of Technology Assessment (1983). The Royal Commission on Criminal Procedure had considered the introduction of the polygraph test into England and Wales. Their conclusion, however, was that the polygraph’s ‘lack of certainty from an

military organisations<sup>6</sup> and last but not least, academic discourse<sup>7</sup> have continuously and almost unanimously discredited the polygraph as regards its validity in fact-finding processes. What is more, the very scientific paradigm in psychology which propelled the polygraph into existence has receded due to its lack of methodology, indefensible empirical basis and thus deficient validity (see the next section).

In this paper I will argue that lie-detection is a *zombie* evidential idea insofar as it has been refuted repeatedly (see also Quiggin, 2012). Despite structural and logico-grammatical inconsistencies embodied by massive empirical failures, the polygraph keeps coming back to public discourse by re-entering the toolkit of criminal justice systems. Partly because the common-sense notion that ‘lies can be detected’ remains prone to bogus theorising, and partly because law enforcement can thus knowingly use pseudo-scientific methods in order to gain leverage and extract adverse statements from suspects and convicted offenders, the very idea of the polygraph refuses to die. Time and again humans have tried to articulate a methodological framework which would render rationally validated (scientific) conclusions about the truth-value of a statement: trials of fire and water; asking the defendant to thrust his arm into a cauldron of boiling water and fish out a ring; torture; use of the polygraph. These are all instantiations of a recurrent theme in the history of the criminal justice system which purports to establish scientific fact-finding methods. I call this phenomenon *zombie forensics*. This paper will focus on the polygraph and examine its use through the lens of English and Welsh law of evidence.

Before I undertake that project, it is imperative, first, to stop and check our bearings by looking at the theoretical underpinnings of the polygraph test.<sup>8</sup> I will show that the central claim for the understanding of the polygraph—i.e. the presupposition that the polygraph indicates deception—is inextricably linked to an obsolete and abandoned paradigm in psychology (Introspection). The polygraph results are based on erroneous assumptions and evaporate under closer scrutiny. By going back to the underlying psychological concept of psychophysical parallelism I will explain why, occasionally, it’s not a bad idea to throw away the baby (lie detection) with the bathwater (scientific paradigm) (see ‘The theoretical underpinnings of lie-detection’ section). *Secondly*, I will draw attention to first principles in the law of evidence especially the general ban on opinion evidence and the requirement for reliability. This cardinal feature of English law of evidence, i.e. the requirement that expert evidence has a sufficiently reliable scientific basis, explains why polygraph evidence cannot be adduced in the criminal process (see ‘The law of expert evidence in England and Wales’ section). *Thirdly*, I will draw attention to the use of polygraph tests in the context of probation pursuant to the Offender Management Act 2007. The use of the polygraph faces all the usual problems: lack of validity, lack of consistency due to the arbitrary character of polygraph interviews, which invokes Articles 5 and 8 ECHR, and the need to use deception and psychological manipulation in order to convince the subject that the polygraph works. What is more, the combination of inadmissibility of the polygraph in the criminal process and its use from probation services creates, finally, a major contradiction which is detrimental to the integrity of the legal order. For the dissociation of standards for legal validity turns out to be a thorn in the side of the legal system whose unity is threatened. By using *zombie forensics* the legal system jeopardises its normative cohesion, indeed its identity, in order to serve the extraction imperative (see ‘The use of the polygraph in England and Wales’ section).

---

evidential point of view told against its introduction in this country for the purpose of court proceedings’ (Royal Commission on Criminal Procedure, 1981: para. 4.76).

6. A report, prepared for the US Department of Defence by the Institute for Defense Analysis, was submitted on 31 July 1962; it was immediately classified as it undermined the reliability of lie-detector tests. Cited by Alder (2007: 254).
7. A report from the British Psychological Society (1986) also argued that the polygraph was unscientific. See also British Psychological Society (2004).
8. The critical reader might argue that this discussion is redundant, for it has been well established in literature that the polygraph test lacks validity. The reality on the ground, however, and the fact that the polygraph is currently in use by probation services in England and Wales, forces us to reopen a seemingly resolved discussion.

## The theoretical underpinnings of lie-detection

### *Psychophysical parallelism?*

To address the empirical failures of the polygraph test in criminal adjudication, we need, first, to sketch the basic contours of the logico-grammatical context which gave birth to the very idea of automated lie-detection. Embedding the polygraph in its genetic framework has a pivotal role insofar as it is widely held that the basic theory of polygraph testing is ‘only partially developed and researched’ (Office of Technology Assessment, 1983: 101). What is striking about the polygraph, I will argue, is not its ability to measure (usually: three) physiological changes associated with parts of the central nervous system largely outside conscious control (see the Office of Technology Assessment, 1983: 11); for the data which the polygraph records are as such void of meaning. Interesting and in need of critical assessment is the conceptual and ideological framework which turns raw data into information, i.e. the reductionist claims according to which epistemic/psychological concepts such as deception or truthfulness can be reliably indicated by physiological measurement.

Crucial for the understanding of the polygraph is the presupposition that ‘deception and truthfulness reliably elicit different psychological states across examinees’ (National Research Council, 2003: 65) and in particular that ‘the polygraph is a device that measures certain physiological responses [...] which are thought to indicate whether the subject is lying’ (see e.g. National Offender Management Service (UK), 2015: para 1.4). The direct link between psychological and physiological states did not come out of thin air. On the contrary, it is inextricably linked to an obsolete and discredited paradigm in psychology (i.e. *Introspection*).<sup>9</sup> This matters for the simple reason that the hardware underpinning the polygraph has hardly changed since the invention of the latter in the 1920s.<sup>10</sup>

One of the characteristic doctrines of Introspection is the so-called *psychophysical parallelism* according to which mental processes run parallel to physiological ones (Wundt, 1902)—an idea which proved to be the fulcrum point for the polygraph. Although the field did not survive the 1920s—too many were its internal methodological inconsistencies and idealisations, especially the naïve belief in the discriminatory power of self-observation<sup>11</sup>—one of the main figures of the field, Hugo Münsterberg, continued the search for a pipeline to the soul, disseminating the ideas of introspection to scholars in Harvard and, as it turned out, the whole of US.<sup>12</sup> Münsterberg’s credo that physiological processes occur in tandem with cognitive processes made him believe that he could solve in a scientific (i.e. replicable) manner the deep problem of providing the criterion of truth,<sup>13</sup> for he was unsatisfied with ‘the crudest standards of easy going-psychology’ with which factual claims are assessed by juries and judges (Münsterberg, 1908: 150 and 139). He envisaged a scientific way to ‘trace emotions’ and discriminate between truthful statements and deception by capturing the involuntary symptoms of the emotions (movements, breathing or pulse) which were ‘too weak to be noticed by the ordinary observer’ (Münsterberg, 1908: 138–139, 111 and 114–116).

---

9. The historical origins of the core concept underlying the polygraph can be traced back to 1879 when Wilhelm Wundt established the first psychology laboratory in Leipzig/Germany. Wundt’s research programme used a method of inquiry called introspection with the aim of injecting hard-nosed objectivity into the nebulous phenomenology of the workings of the mind. The aspiration was that introspection would provide a direct pipeline to one’s soul. For more discussion see Anderson (2015: 4–6).

10. For more discussion see Oswald (2020); cf. Schauer (2012).

11. In what was perhaps the most clear-cut paradigm shift in the field of psychology, Introspection was superseded by Behaviourism.

12. Münsterberg was recruited by William James, i.e. the main figure of American introspection, to assume leadership of Harvard’s experimental psychology lab. Hugo Münsterberg came to Harvard in 1892 with a doctorate in psychology, earned under the supervision of Wilhelm Wundt in Leipzig.

13. For more discussion on this problem see Striker (1996: 22–76).

The aspiration of a scientific approach to fact-finding, especially Münsterberg's plan to build a registering apparatus for a reliable detection of definite relations 'between feelings and arm movements' (Münsterberg, 1908: 120), remained for some time unfulfilled. The *missing link* between the theoretical blueprint and its industrial application is, knowingly, William Marston who, acting on the suggestion of his instructor at Harvard, i.e. Münsterberg, built a device recording changes in cardiovascular activity, breathing and skin conductance. Marston was thus responsible for the first attempt to execute Münsterberg's project of 'determining the truth or falsity of various elements in a witness' story'.<sup>14</sup>

It is thus safe to conclude that the polygraph weaves itself seamlessly into the fabric of an identifiable and obsolete paradigm in psychology and suffers from its conceptual and design errors including the reductionist idea that we can break psychological concepts down to their individual components without losing essential properties of the whole, or the assumption that deception and truthfulness could elicit in a consistent and detectable way physiological states across interviewees. As every blue-ribbon committee on the validity of the polygraph reports, the 'stress response' to be measured can be triggered by a host of factors. There is simply no unique physiological indicator that reflects a single underlying process, let alone deception (see e.g. British Psychological Society, 2004: 29; National Research Council, 2003: 78).

All in all, the realisation that there is no known physiological response which would be unique to deception, or indeed to any other cognitive state, pushes a sharp needle into the theory underpinning the polygraph.

### Stimulation test

The intrinsic problems of the theory underlying the polygraph mean that the latter's output cannot be pregnant with meaning. It can only register neutral physiological data. As a result, Marston's device would never yield any information,<sup>15</sup> let alone reliable conclusions about truthfulness. In other words, whereas Marston laid the groundwork for the failed *hardware*, it was Keeler who developed the 'interrogation rituals' for what we call today the polygraph *test*.<sup>16</sup> Only the latter enables the operator to extract adverse statements from the interviewee. It is important to stress that Keeler, who patented his personal interview choreography, identified a problem and developed a solution to it, the so-called 'stimulation test'.<sup>17</sup> We need therefore to keep these two parts separate. The *polygraph test* cannot be reduced to the polygraph, i.e. the rather banal technology. Crucial is thus not the device, but the underlying interview logic which aims at eliciting confessions. Note that even polygraph operators make clear that polygraphy is primarily 'a psychological procedure and only secondarily of a physiological nature' (e.g. Abrams, 1978: 178). It is to this ritual that I shall now turn.

A pivotal role in the polygraph test is played by the stimulation alias 'stim' test, which is deployed 'in order to enhance the subject's responsiveness through psychological means' (e.g. Abrams, 1978: 178). Although its declared purpose is to inform the examined person that the polygraph instruments are 'properly adjusted' (Decker, 1978: 176) to them and that the examination is being 'professionally conducted', its real purpose is to convince subjects of the accuracy of the polygraph examination and that any untruthful statement 'will be very obvious to the examiner' (see Barland and Raskin, 1973; Office of Technology Assessment, 1983: 12–13).

I take this to be by far the most important aspect of the polygraph examination, for the examinee's (lack of) 'belief' in the validity of the polygraph or the examiner will also determine the structure of the interview. If the examinee declares that he does not 'believe in the polygraph', then, as experienced

14. Marston (1921: 566). The modern polygraph was patented for use in criminal investigations by Leonard Keeler in 1939.

15. Note that the notions 'data' and information are not equivalent.

16. As Alder (2007: 81) points out, the 'software' constituted Keeler's 'true innovation'.

17. Terminology varies. I will use the term 'stimulation test' as it is more accurate. See also Office of Technology Assessment (1983) and NRC Committee to Review the Scientific Evidence on the Polygraph (National Research Council, 2003).

polygraphers recommend, certain steps need to be taken in order to ‘affirm the subject’s knowledge of the effectiveness of the procedure’ (Hickman, 1978: 184) and thus instil fear of detection. In that case, the stim-test is conducted *before* the main part of the interview. What is more, the examiner is instructed to use the word ‘acquaintance or demonstration test’ so that the examinee thinks that this is a trivial procedure for adjusting tubes and instruments, while at the same time the psychological test induces the false belief about the validity of the polygraph—generating thus the necessary ‘psychological climate’ (Office of Technology Assessment, 1983: 12–18) for the test.

Painting with a broad brush, we can say that there are two main categories of ritualistic lie-detection techniques employed to extract adverse statements. The *first* one is based itself on outright deception. The interviewee is often instructed to select from a deck a card which is secretly marked or otherwise adapted so that the examiner knows the correct answer.<sup>18</sup> For example, according to the manual issued by the US Department of Defense, the examiner receives the following instructions:

Administer a *standard known solution numbers* test [...]. DO NOT show the test to the examinee, but convince the examinee that deception was indicated. (US Department of Defense, 1997: 31–34, emphasis as in original)

At the end, the examiner will merely announce the predetermined ‘results’ using the following words: ‘You’re not capable of lying without your body reacting [...] That will make this examination very easy to complete as long as you follow my directions’ (US Department of Defense, 1997: 35). This psychological trick aims at maximising the subject’s anxiety and as a result the subject’s responsiveness. The first category looks thus more like a travesty of an interview<sup>19</sup> than a test.

In the *second* category there is no stacked deck at play. Nevertheless, the examiner will follow a similar procedure by asking the subject to choose a number between 30 and 36, say. The examiner will then ask the interviewee which number he has chosen whilst he instructs him to answer ‘No’ to every question,<sup>20</sup> forcing him thus to lie:

Then the polygraph operator will try to guess the number that the examinee picked based on the physiological data. Thereupon he asks whether the subject had picked the number 33, say, and ‘receives the subject’s *assurance* that the card identified by the examiner was in fact the card chosen by the subject’ (Senese, 1978: 200, emphasis added).

This is an astonishing insight, for, in effect, polygraph examiners concede that there is no methodologically valid way to assess the accuracy of the examiner’s guess other than a co-operating/mystified subject. Of all things it is the interviewee who confirms whether the polygrapher’s best guess was accurate. This means, however, that by relying on the interviewee to make factual determinations, we go back to our starting point. The only difference is that during that process the ritual sets the stage for the psychological manipulation and the extraction of statements. The polygraph operator achieves that by distracting the subject from the very fact that the polygraph examination gravitates towards *extracting* information by making ‘a “believer” out of the examinee’ (Hickman, 1978: 182)—not by *detecting* anything (meaningful).

In other words, as soon as the subject believes in the infallibility of lie detection the *bogus pipeline* effect kicks in. Because the subject operates on the wrongful basis that the polygraph test (a) works independently and (b) will reflect his true attitude, and because he does not wish to be second-guessed by the machine, he will feel pressured to disclose adverse statements (Jones and Sigall, 1971). This suffices to show why the stim-test is considered to be an ‘indispensable’<sup>21</sup> part of the examination.

18. As Alder (2007: 83), explains, Keeler himself often used his skills as an amateur magician to stack the deck.

19. Term used in *R v Paris, Miller and Abdullahi* (1993) 97 Cr App R 99 (CA) at 104.

20. The questions will thus be the following: ‘Did you choose the number 30? Did you choose the number 31? ... Did you choose the number 36?’

21. Office of Technology Assessment (1983: 12). According to s. 5(3) of the Polygraph Rules 2009 (SI 1999 No. 619): ‘A polygraph session must include a pre-test interview, one or more polygraph examinations and a post-test interview.’

The polygraph test relies thus on an unjustifiable assumption. We conclude that every polygraph operator faces an unpalatable dilemma: *Either* to inform the subject that the polygraph test lacks scientific validity *or* to deploy a psychological procedure (stim-test) based on false statements in order to extract a confession. The field of polygraphy choose persistently the latter—among other things through demonstrably false empirical claims. Such is the claim that there is a ‘unique pattern of response for specific emotional states’ (see e.g. Abrams, 1978: 178–179). The ritual deployed by polygraph examiners can thus safely be regarded as deceptive and fraudulent (see British Psychological Society, 2004: 27).

## The law of expert evidence in England and Wales

Notwithstanding the lack of methodological validity (established in the previous section) of the polygraph test, *legal* questions of relevance, admissibility and the decision-making prerogative should not take the form of afterthoughts and normative side-constraints to a supposedly existing institutional reality. From a doctrinal point of view, both epistemic objectives and the sufficiency of grounds for any investigative method are themselves normatively constituted. Remember that the criminal process is a *normatively structured* decision-making process under uncertainty (for more discussion see Roberts, 2018: 46). As a result, we need to examine the procedural architecture of the process of gathering and assessing (expert) evidence. The insurmountable—as I think—problems surrounding the admissibility of polygraph evidence pertain to two basic requirements: (a) reliability and (b) legitimacy.

### Reliability

We saw above that polygraphy is based on the notion that the act of deception produces a stress response in the autonomic nervous system which ‘can be recorded and then *interpreted* by the polygraph examiner’ (Stockdale and Grubin, 2012: 233, emphasis added). The need for interpretation of the recorded data, i.e. the diagnosis of truthfulness or deception, invokes a cardinal feature of English and Welsh evidence law, i.e. the opinion rule.<sup>22</sup> We need therefore to examine thoroughly the reasons for or against the admissibility of polygraphy output. According to traditional evidence law doctrine, experts will present fact-finders with physical rules or general principles and *help* them apply the domain-specific general knowledge to the evidence introduced in the case. The term ‘help’ is doing here the conceptual heavy lifting—in more ways than one. The expert witness is bound to testify only *within* his or her area of expertise insofar as any step outside that strictly circumscribed area constitutes a procedurally forbidden invasion of the fact-finder’s province.<sup>23</sup> Within the exclusionary scope of the opinion rule fall expert witnesses who draw inferences, speculate or make value judgments about the facts of the case—pre-empting thus the decisions of the fact-finder. Lawton LJ’s enduring dictum in *Turner* which predicates admissibility on *necessity*, sets the tone in this area of law: ‘If on the proven facts a judge or jury can form their own conclusions without help, then the opinion of an expert is unnecessary’.<sup>24</sup>

As regards the question of what exactly constitutes expert evidence, English and Welsh law had long adopted a default approach of laxity.<sup>25</sup> This has raised the central question of the *reliability* of expert evidence. Whereas in the US, say, this discussion has been going on at least since *Frye*<sup>26</sup>—coincidentally: this is the same DC Court of Appeals’ decision (US) which declared the use of the polygraph

22. *Robb* (1991) 93 Cr App R 161 CA. Common law has erected already since the late 18th century a general ban on opinion evidence in order to entrench the decision-making prerogative of the fact-finder. The early leading case is *Folkes v Chadd* (1782) 3 Doug KB 157.

23. *R v Davies* [1962] 3 All ER 97.

24. *Turner* [1975] QB 834 at 841 CA.

25. See e.g. *Silverlock* [1894] 2 QB 766.

26. *Frye v United States*, 293 F. 1013 (D.C. Cir. 1923).

inadmissible—the legal system in England and Wales has long neglected the formulation of such criteria.<sup>27</sup>

Expert evidence needs to be helpful, but then the question is: under which circumstances can and should the opinion rule be qualified? In *Dlugosz* the Court of Appeal (E+W) established that in determining the issue of admissibility, the court must be satisfied that there is a *sufficiently reliable scientific basis* for the evidence to be admitted.<sup>28</sup> Obviously, there is reliability and reliability. Lacking a hotline to objective reality, the judge is not given unbridled discretion to make this determination during an assessment of whether the reasoning or methodology underlying the proffered expert evidence is scientifically valid (reliable). The soft law regime comprising the Criminal Procedure Rules (CrimPR) and Criminal Practice Direction (CPD) introduces gatekeeping standards and sets out factors which the court should consider *vis-à-vis* inferential ‘strengths’<sup>29</sup> and ‘weaknesses’<sup>30</sup> of the expert evidence.

Applied to our current discussion, the polygraph test is, *first*, based on an ‘unjustifiable assumption’<sup>31</sup> (i.e. the idea of detectability of deception via scientific means) which in evidential terms has unequivocally failed ‘to stand up to scrutiny’.<sup>32</sup> For this in effect reductionist picture of the human mind derives from a deeply problematic and obsolete research program in psychology.<sup>33</sup> What is more, the polygrapher would struggle to report whether he or she ‘followed established practice in the field’.<sup>34</sup> It is common knowledge that there are no such standards due to the very nature of an interview being bespoke to the respective individual (see Kotsoglou and Oswald (2020) for more discussion).

This relates to the *second* point: The polygraph ‘test’ does not generate any scientific data insofar as an interview is not a replicable process.<sup>35</sup> In criminal adjudication there is no universe of John-Lennon-shootings in which we can count how many times he was shot by MD Chapman and the number of times that someone else was the culprit. No two cases are the same, or as David Simon—of the TV show ‘The Wire’ fame—put it: ‘God is a first-rate novelist’ (Simon, 1992: xi). What is more, early on in the history of the polygraph it became clear that ‘wide divergence’ in the structure of the respective interview is inevitable due to the ‘widely varying types of questions, examiners, and examinees’ (Office of Technology Assessment, 1983: 11). The complex interaction between the examiner and the examinee show that lack of standardisation signals a feature, not a bug in the system. The polygraph test’s output is thus deprived of any *generality*. It creates, oddly, a reference class with a single member, or more accurately as many reference classes as interviewees. The very term we use is a misnomer, for what is often and rather uncritically referred to as *the* polygraph test is actually an infinitely long set of malleable interview rituals (Office of Technology Assessment, 1983: 11). Proponents of the use of polygraphs choose to ignore the common-sense fact that human interaction, especially the ascription of truthfulness, are highly context-sensitive and thus antithetical to the general formulation which is a feature salient in science.

The *third* point is a direct result of the first two: Even if the underlying method were valid (NB: it isn’t!), the model would not be a simplified version of any real phenomenon. The complexity of real-life

27. These concerns led the Law Commission to recommend significant reforms, including the enactment of a new statutory test of admissibility requiring opinion evidence to have ‘sufficient reliability’ to be admitted. The government, being worried about the flood of appeals and resulting increase in the budget, declined to give effect to the Commission’s proposals in primary (i.e. binding) legislation, but suggested that they should be incorporated into the soft law regime. See Law Commission (2011: para. 1.8).

28. *R v Dlugosz and Others* [2013] EWCA Crim 2, at [11]—emphasis added; see Tony Ward, Explaining and trusting expert evidence: What is a ‘sufficiently reliable scientific basis’? In: *International Journal of Evidence & Proof* 24(3): 233–254.

29. Criminal Practice Directions 2015 Division V Evidence (as amended) para 19A.5.

30. CPD 2015 V para. 19A.6.

31. CPD 2015 V para. 19A.6(b).

32. CPD 2015 V para. 19A.6(a).

33. For a philosophical discussion on this see McGinn (1997: 147).

34. CPD 2015 V para. 19A.5(h). See also the reference to the ‘applicable standards of the American Polygraph Association’ in The Polygraph Rules 2009 (SI 1999 No. 619), Sched. 1.

35. CPD 2015 V para. 19A.6(c).

cases adjudicated in the criminal justice system outstrips anything to be found in the psychologist's laboratory. The core reason for the insufficiency of the method's reliability is not the fact that polygraph tests can discriminate lying from truth telling at rates 'well below perfection although above chance'.<sup>36</sup> This would confuse cause and effect. In order to solve the—as I think, insurmountable—problem of replicability for real events, researchers simplify case studies to the point of unimportance. Remember that subjects of psychological research are instructed to imagine themselves committing a mock crime e.g. by 'stealing' something in the room. This would, in the researchers' aspiration, create an emotional potential with which to experiment. This is, however, an experiment with the wrong type of guinea pigs (see already Lee, 1952: 25), for the forensic context is wildly dissimilar to the laboratory conditions outlined above. Real people involved in the criminal justice system have real stakes, complex motivations and recollections of events. Empirical research in that area suffers from a lack of realism which is a precondition of validity. The reason for that is what empirical researchers coin the 'base rate problem'. As Gudjonsson explains, '[a]t the most basic level we do not know the proportion of suspects interrogated at police stations who are genuinely guilty of the offence of which they are accused. This makes it impossible to estimate the frequency with which false confessions occur' (Gudjonsson, 2003: 173; see Kotsoglou and Oswald (2020) for more discussion).

Starting from the premise that validity refers to the extent to which a test does measure what it aspires to measure, we conclude that issues around the validity of studies on confessions (with or without the use of the polygraph) are unsettling, for it is hard to evaluate the extent to which empirical claims are verified (Risinger et al., 1989: 736–737). Has the person who made a confession statement really committed a crime? Or do they display interrogative suggestibility? No one can tell. What is more, tests are conducted (*a*) in laboratory settings and (*b*) in populations of examinees untrained in countermeasures. We cannot therefore generalise these results to real-world settings. Even a high percentage of diagnosticity does not pertain directly to the real world of defendants whose liberty, livelihood, and reputation depends on the outcome of the process.<sup>37</sup>

Finally, it should be obvious that *concluding* whether a statement is truthful or not contains strong decisional elements. Now, the question is: Who is authorised by the legal order to make this (non-scientific) decision? The polygrapher or the fact-finder? In evidential terms, the question is the following: What is the 'proper' way to draw an inference? The Criminal Practice Directions (para 19A.6.(e)) send us of course back to the grammar of the criminal process, the decision-making prerogative (see Kotsoglou, 2020: 86–89). I cannot stress enough that legal orders have their *own* established routines for drawing properly an inference or conclusion as regards credibility of a witness or accuracy of a statement. Note that the criminal process is not a proto-scientific apparatus soon to be replaced by a ripe scientific method, let alone by zombie forensics, but an advanced institutional tool designed for particular kinds of work in the social arena. The criminal process is not a 'cheap substitute' (see Midgley, 2001: 11 for more discussion) or a half-baked routine for folk-validation due to be replaced by the proper routines of experts. The idea that some scientifically validated (therefore: general) proposition—let alone a pseudo-scientific one—could ever guarantee the factual rectitude let alone the lawfulness of a legal decision commits the fallacy of taking inferential steps based on assumptions that go beyond what

36. This is one of the fundamental conclusions of the NRC Committee to Review the Scientific Evidence on the Polygraph (National Research Council, 2003: 4).

37. The rectitude of a criminal verdict is to be assessed against legal standards for normatively structured persuasion, not against some fixed proposition such as 'assume that you have stolen a pencil'. Psychologists create a context in which the truth of a proposition is artificially fixed. This is a methodological necessity for meaningful *empirical* inquiries. Propositions with fixed truth-values allow empirical researchers to go on and examine whether, and to what extent, a lie can be detected. In criminal adjudication, however, the exact opposite is the case. By arguing that psychological research, let alone of the type discussed here, is directly applicable to real-life scenarios, proponents of the polygraph conflate two inverse conditional probabilities, i.e. the probability of detection given a false statement confession, and the probability of a false statement given an indication of deception.

can be logically warranted by the underlying procedure (for more discussion see Biedermann et al., 2008).

For all these reasons, it is safe to assume that it would be a fool's errand to even contemplate introducing the polygraph into the criminal process; assessed against the evidential standards for the admissibility of criminal evidence in England and Wales polygraphers would sooner rather than later meet their procedural Waterloo.

### *Legitimacy of confession*

Regardless of the various issues around validity of the underlying *method*, the use of deception and psychological manipulation as indispensable part of the polygraph *interview* are just another thorn in the side of polygraph evidence. We saw above that the polygraph technique depends on a great deal of evocative stage-setting which conveys the implicit and explicit message that untruthfulness *will be detected*. These are false representations vis-à-vis the truth-conducive character of the polygraph 'test', which in other circumstances—e.g. if made for gain—would enter the scope of anti-fraud criminal provisions.

In view of the deception involved in the polygraph test itself, it is highly unlikely that confessions triggered by the polygraph would survive the two-stage reasoning process of a criminal court judge (ss. 76(2) and 78 of PACE). Defence counsel tend to rely on both, for courts have not clearly indicated on which section they rely in holding that the respective confession is to be excluded. Required is only that the breach of verballing provisions is 'significant and substantial'.<sup>38</sup> Note also that s. 76(2)(a) of PACE, which replaced the voluntariness rule at common law, disconnects the veracity of the confession from its legitimacy.<sup>39</sup> A knee-jerk reaction from proponents of the polygraph would focus on the meaning of 'oppression'. One might wonder: does the polygraph test really qualify as oppressive?

The remit of oppression which is partially defined in s. 76(8) of PACE, also includes deception. For example, it was held in *Mason* that a lie told by the police—that the defendant's fingerprints had been found on an article used in the offence—should have resulted in exclusion of his confession under s. 78. For the trial judge had failed to take into account the deception practised not only on the defendant, which, as the Court of Appeal stressed, 'is bad enough', but also upon the latter's solicitor. Had the trial judge included the deceit practised upon the appellant and his solicitor in his consideration of the matter, Watkins LJ noted, they 'have not the slightest doubt that he would have been driven to an opposite conclusion, namely, that the confession be ruled out and the jury not permitted therefore to hear of it'. 'Hoodwinking' the defendant through deception, the Court of Appeal noted, 'was a most reprehensible thing to do'.<sup>40</sup> *Heron*<sup>41</sup> is another case which dealt with coercive tactics employed by the police. It was held that the use of deliberate deception on a suspect may contribute to a finding of oppression. The court judge excluded the defendant's confession on the grounds both of verballing during the interview and the lies told to the latter that allegedly two witnesses had identified the latter as being at the spot where the murdered girl was last seen alive. It is highly doubtful whether in similar circumstances a direction to the jury about the need for special would remedy the trial judge's failure to exclude the confession under ss. 76(2) and 78 of PACE.<sup>42</sup>

We should not forget at this juncture that confessions have historically been useful instruments for securing convictions. The criminal justice system, however, is acutely aware of their intrinsic problems too. Ever since the 18th century it has been regarded as an uncontroversial view that over-reliance on the

38. *Absolam* (1988) 88 Cr App R 322; *Keenan* [1990] 2 QB 54.

39. It is interesting that NISSG (2014: 2f) admits/concedes that: '[g]iven the concerns raised in literature and the calibre of the experts involved it is very unlikely that any challenge to the use of the polygraph could be comprehensively rebutted'.

40. *Mason* [1987] 3 All ER 481.

41. *R. v Heron*, *The Times*, 22 November 1993.

42. *R v Moss* (1990) 91 Cr App R 371.

defendant's confession statements counts among the most significant causes of miscarriages of justice.<sup>43</sup> As Beccaria explained, it is not the actual events of the alleged crime that are unravelled before the eyes of the oppressive investigator but the strength 'of the will of the accused'. The 'very means employed to distinguish the innocent from the guilty' will make the difference between them disappear, so that we, ultimately, get information about 'the force of the muscles and the sensibility of the nerves' of the accused person rather than a truth-conducive statement.<sup>44</sup> In the polygraph context, we are not dealing of course with physical pain, but with psychological pressure. We are not operating on the basis of the (false) assumption that 'God will give the defendant the strength to endure'; the explicit assumption though that the device will detect untruthful statements is playing the same role. I think, therefore, that the difference between torture and the polygraph is a matter of degree, not category (see Kotsoglou, 2015). Remember that the main function of the stim-test is to instil *fear* of detection. In a similar way to torture, suggestibility is not a reliable or legitimate way of conducting an interview as it generates confession statements while at the same time it inflates their probative force. All in all, although there is little to no judicial authority regarding the admissibility of polygraph evidence—scholars even speak of a *general assumption* of inadmissibility (Dennis, 2017: Ch. 14-005)—we should not misinterpret silence as legal *uncertainty*. English and Welsh law's demands for non-oppressive interrogation and reliable confessions as outlined above sketch the contours of the institutional and procedural framework which should exclude polygraph evidence from any criminal trial. In fact, in every Western legal order that I know of, polygraph evidence does not pass the admissibility test. To be more precise, the very efforts to introduce the polygraph or other unscientific methods into the criminal process have, historically, shaped the criteria for the admissibility of expert evidence.

## The use of the polygraph in England and Wales

### *All rosy in the garden?*

Now that we have examined the legal framework underlying the obtaining, admissibility and use of confession statements (see the previous section), we can return to the issue which necessitates this discussion, i.e. the current use of the polygraph in England and Wales.

As outlined above, ss. 28–30 of the Offender Management Act 2007 enable a polygraph condition to be inserted in the release licence of certain sexual offenders as specified in the Act. More specifically, s. 30(1) of the 2007 Act stipulates that evidence of any matter mentioned during the polygraph session may not be used in any proceedings against the interviewee/released person for an offence. The aforementioned matters could be either statements made by the released person while participating in a polygraph session or any physiological reactions of the released person while being questioned in the course of a polygraph examination (s. 30(2)(a–b) of the 2007 Act). Furthermore, according to the 'Polygraph Examination Instructions' (hereafter: PEI) an indication of deception (hereafter: *DI*) is *not* in itself a breach of the licence condition: 'Any statement made or physiological reaction of the released person during the polygraph session would not be evidence that the released person had breached his/her licence condition and should not lead to enforcement proceedings being undertaken'. Enforcement proceedings due to breach of licence may follow, only if the offender 'admits or disclose about behaviour that would

43. The Guildford Four and the Birmingham Six are only a couple of miscarriages of justice. A substantial body of research is showing a number of possible reasons why people may make false confessions, see The Royal Commission on Criminal Justice (1993: 57) (the Runciman Report); see Gudjonsson (2003: 166–172).

44. Beccaria (1785: ch. XVI). Cesare Beccaria, co-initiator of the Enlightenment and father of modern criminal law theory, pushed a sharp needle not only in the idea of torture as truth-conducive mechanism but, ultimately, in every pseudo-rational approach to factual determination, such as of the type examined here. His analysis provided us with a guide to the demythologisation of fact-finding methods which interfere with their very object of inquiry. Remember that polygraph operators interact with, indeed actively manipulate, the participant before, during and after the examination.

constitute a breach' (see National Offender Management Service, 2015: Appendix 1, paras 2.92, 2.93, and 3.41).

We seem thus to have a *corroboration rule* at play, according to which the result of the polygraph examination cannot be used as an exclusive basis for decisions on the management of sex offenders (see Kotsoglou and Oswald, 2020 for more discussion). One would thus be inclined to think that released offenders have nothing to fear when instructed to undergo a polygraph session. But they do, and they should. For the devil lies in the details of the PEI. As I will show below, the polygraph is, in effect, an *interrogation tool*, another Trojan horse in which the extraction imperative is secreted under the veil of technological progress. Its purpose and sole potential are not to *detect* truth, but to enable interviewers to extract confession statements at the price of rationality and legitimacy—for three reasons (see Kotsoglou and Oswald, 2020 for more discussion).

*First*, released offenders are *forced* to undergo polygraph sessions, insofar as 'failure to attend or comply with the polygraph session as instructed would constitute a breach of the licence condition'.<sup>45</sup> Interestingly, the PEI thus sanctions non-attendance of a pseudo-scientific interview ritual whose output would be declared inadmissible in criminal proceedings. Once there, the offender must undergo a test which can, of course, easily be tricked, and which cannot detect any unique physiological indication of untruthfulness. As every blue-ribbon committee indefatigably has stressed, there is simply no unique physiological indicator that reflects a single underlying psychological process, let alone deception (see 'The theoretical underpinnings of lie-detection' section).

*Secondly*, the unanimously accepted lack of linkage between psychological/normative concepts such as truthfulness and physiological functions becomes relevant again, for, pursuant to para 2.74 PEI an offender who has failed the test (*DI*) 'will be given the opportunity to explain the test result in the post-test phase of the examination'. This is 'another opportunity', the PEI state, to 'disclose information'. Repetitive use of the term 'opportunity', as evidenced above, distracts us from the fact that the polygraph test is calibrated towards extracting confession statements by instilling fear of detection. Interrogative suggestibility, as research clearly shows, appears to be significantly mediated by anxiety processes (Gudjonsson, 2003: 148). Remember that a polygraph test is—unlike a routine visit to the GP—a 'fairly lengthy process' which typically lasts 'two or three hours'.<sup>46</sup> The obligation of the interviewee to provide an explanation with regards to a *DI* is highly informative for the simple reason that the PEI do not regard—even from within the flawed logic of the polygraph—the very possibility of a false-alarm as relevant. The offender must provide an explanation for an indication which, let me repeat, can be on the polygraph's own terms, a false positive. This is, I think, the exact point where the *bogus-pipeline effect* kicks in once again (see 'The theoretical underpinnings of lie-detection' section). If deception is indicated and the offender is not 'forthcoming in offering any explanation', then a 'sound guiding principle' is to 'address the issue "head on" with the offender and try to verify it'.<sup>47</sup> But 'challenging the interviewee head on' is nothing but a way to gain leverage based on malleable pseudo-scientific output (see Kotsoglou and Oswald, 2020 for more discussion).

Released offenders who have not thoroughly researched the relevant literature or merely infer that the polygraph must be a valid method—given that the HPPS deploys it—will find themselves under significant psychological pressure. Add in the mix the fact that a disproportionate number of people under probation supervision have special education needs; find hard to learn how to gauge risk or control temper and other emotions; have substance issues; or suffer from anxiety, depression other mental health

45. PEI, Appendix 1, para. 2.94

46. See the CEO of the company who trains polygraph operators, Professor Don Grubin's witness statement in: Parliamentary Debates— House of Commons Official Report General Committees—Public Bill Committee—Counter-Terrorism and Sentencing Bill—First Sitting Thursday 25 June 2020 (Morning). Available at: [https://publications.parliament.uk/pa/cm5801/cmpublic/CounterTerrorism/PBC129\\_Counter-Terrorism\\_1st-4th\\_Combined\\_30\\_06\\_2020.pdf](https://publications.parliament.uk/pa/cm5801/cmpublic/CounterTerrorism/PBC129_Counter-Terrorism_1st-4th_Combined_30_06_2020.pdf) (accessed 02 July 2020).

47. PEI, Appendix 1 para. 2.8.5.

conditions (Stacey, 2019: 6). These factors should highlight the considerable risk of coerced-compliant or coerced-internalised false confessions (Gudjonsson, 2003: 193–196).

In brief, released offenders who are particularly susceptible to pressure are not only required to undergo a polygraph test with the both implicit and explicit justification that it would reliably indicate untruthfulness; they are also being put under pressure to explain a *DI*. It becomes thus apparent that—starting from the stim-test over the length of the interview to the utilisation of *DIs*—psychological manipulation and pressure are exerted continuously and increasingly until the offender makes an adverse statement; the whole ritual as outlined above is calibrated towards that goal. Historically, confession statements have been regarded as an evidential remedy for uncertain decision-makers and labyrinthine sets of information. As the PEI openly admit: ‘offender managers sometimes struggle to decide on what to do if the result was *DI*’.<sup>48</sup>

*Thirdly*, the very concept of ‘*indicated* deception’ seems to be highly problematic. As English courts accept,<sup>49</sup> ‘the examiner *interprets* the chart and *indicates* whether he or she believes that the interviewee is being truthful or deceptive’.<sup>50</sup> It remains doubtful on which evidential basis and according to which inferential rules the examiner will draw rational conclusions with any probative force. We saw above (see ‘The law of expert evidence in England and Wales’ section) that for the ban on opinion evidence to be qualified, we would need a *sufficiently reliable scientific basis*, which, of course, is not available in the context of the polygraph. Despite the opinion rule the legal order abdicates the decision-making prerogative of authorised legal officials to polygraph examiners who will ‘interpret’ the data based on invalid inferential rules. This situation is reminiscent of a man who supposedly feels in his hand ‘that the water is three feet under the ground’ (Wittgenstein, 1991: 9). Undeniably, it is possible that we could find water, but it’s not that ‘feeling in our hand’ that led us there! Similarly, we do not know how the grammar of ‘believing that the interviewee is being truthful or deceptive’ relates to the grammar of ‘sufficient evidence’ and ‘reasonable grounds’—due to complete lack of explicit rules, which could guide proper use of these terms. The legal order in the probation context tolerates that we do not apply the requisite standard of proof in order to measure the examiners’ subjective beliefs. On the contrary, we use the arbitrary interpretation of each chart to articulate the respective content of the standard of proof. Ironically, the use of the polygraph which is supposed to be a measuring instrument, poses itself a problem of measurement. Cryptic decisions based on inarticulate inferences and unbridled discretion are a paradigmatic case of arbitrary decision-making.

### Use immunity?

Let us now try to understand the typical scenario with which the UK Government advertises the use of the polygraph in HPPS:

J is a 47 year old sexual offender [...] J was subject to mandatory polygraph testing as part of his release following a nine-year custodial sentence. During the polygraph examination he denied any contact with children under the age of 18 years. The test revealed he was attempting to be deceptive. The test was run a second time and still produced a deceptive result. The polygraph examiner contacted the offender manager who immediately contacted the police. The police were waiting for the offender when he returned to his property and found three young boys and another adult in the house.

J was immediately recalled to custody. The police were able to make further investigations. (Ministry of Justice, 2020b)

48. PEI, Appendix 1, para. 2.8.5.

49. *Corbett v The Secretary of State for Justice & NOMS* [2009] EWHC 2671 (Admin), para. 14. The HC cites here a guide for offender managers which was, on 1 October 2008, issued by the Secretary of State under the heading ‘Mandatory Polygraphy for Sex Offenders Pilots’.

50. PEI, Appendix 1, para. 3.3.2—emphasis added.

The case-scenario—whether representative or not—raises serious questions as regards the lawful character of police conduct. *First*, no polygraph results could ever ‘reveal’ that the interviewee is ‘attempting to be deceptive’. No set of physiological data can be reliably associated to specific psychological concepts. Let me stress once again that the key message in scientific literature is that there is simply no unique physiological correlate that indicates deception. The Government’s case-scenario is therefore misleading. *Secondly*, the case-scenario manifests that the Government pays lip service to the use immunity enshrined in s. 30(1) OMA 2007. For the offender manager can inform the police about the *DI*—remember that there are no clear rules as to what counts as *DI*—who will in turn investigate and secure new (admissible) evidence. In absence of a strict exclusionary rule for the fruit of the poisonous tree (remember that the use of deception renders the polygraph ‘poisonous’, see ‘The theoretical underpinnings of lie-detection’ section), police forces seem willing to take their chances with the fruit of the polygraph. The problem, however, is that although investigations and new evidence might be able to bypass the ss. 76 and 78 PACE 1984 exclusionary rules, they cannot distract us from the main issue at this juncture. Police conduct hinges on the existence of *reasonable grounds* for suspecting that an offence may have been committed (PACE Code B, para 2.5 and 3.1). It is thus a contradiction in terms to base a suspicion for a crime on the output of a device which lacks validity and as a result is inadmissible in criminal courts. The legitimacy of police conduct fails on the *reasonableness*-requirement, for zombie forensics cannot provide us with *reasonable grounds* (see Kotsoglou and Oswald, 2020 for more discussion).

### *Polygraph and human rights*

The use of the polygraph in the context of probation can engage Article 5 (right to liberty and security of the person) and Article 8 ECHR (right to respect for private life). Unsurprisingly, in the UK Government’s view the polygraph measures do not infringe Article 5 ‘as detention will be in accordance with the sentence of imprisonment as set by the court’ (see Ministry of Justice, 2020c: para. 17). With regards to Article 8 the High Court reaffirmed in *Corbett* the lawfulness of the polygraph—with similar arguments as above. The claimant had challenged his polygraph licence condition imposed as part of the initial pilot (see Gannon et al., 2012) as a disproportionate interference with Article 8. The High Court disagreed. Although there was an interference, LJ Pill noted, this was deemed to be justified under Article 8.2 grounds, given the seriousness of the initial (serious) sexual offences and the denial of those offences by the claimant following his release on licence.<sup>51</sup> Similarly, the UK Government asserts that any interference is ‘justified [...] owing to the significant risk to the public potentially posed by this cohort of offenders in the current environment’ (Ministry of Justice, 2020c, para. 70).

It is striking that in both the UK Government’s justification and the courts’ jurisprudence there is barely any discussion about the *necessity* and *proportionality* of the polygraph, i.e. two central components for assessing whether Article 5 of 8 ECHR has been infringed. Especially the High Court in *Corbett* paid no attention to the operation of the polygraph itself and whether it was necessary for the purposes of offender management in terms of its *effectiveness* and *validity*. Nor did the court weigh up proportionality in accordance with the established four-stage proportionality test (see Kotsoglou and Oswald, 2020 for more discussion). It is rather an implied assumption that mere compliance with domestic law (Offender Management Act 2007) provides sufficient procedural guarantees against *arbitrariness*. It is to the latter that I shall now turn.<sup>52</sup> In the following paragraphs I will thus briefly address a common structural feature of both Articles 5 and 8 ECHR: the need for procedural safeguards against arbitrariness and abuse.<sup>53</sup>

51. *Corbett v Secretary of State for Justice & Anor* [2010] HRLR 3, para. 31

52. A detailed discussion of the polygraph interview’s necessity and proportionality assessed against the background of the ECtHR’s jurisprudence would go beyond the scope of this article. I do believe, however, that my analysis so far has made this discussion redundant.

53. *Roman Zakharov v Russia* (47143/06) [GC], para. 270.

It has been well established by several rulings of the Strasbourg Court's Grand Chamber that the key purpose of Article 5 ECHR, is to prevent *arbitrary* or unjustified deprivation of liberty.<sup>54</sup> But also in respect of Article 8 ECHR the Strasbourg Court has made clear that the State must organise the practical implementation of measure in such a way as to prevent any abuse or *arbitrariness*.<sup>55</sup> Proportionality and procedural guarantees against arbitrariness are essential in that regard.<sup>56</sup> Crucially, the requirement for sufficiently clear rules concerns both the circumstances in which, and the conditions on which the respective measures are carried out. If there is any risk of arbitrariness the law will not be compatible with the lawfulness requirement.<sup>57</sup> This is a point whose importance cannot be overstated—especially in view of the implicit assumption outlined above which equates statutory conformity with lawfulness. The notion of arbitrariness salient in the Convention rights extends beyond lack of conformity with domestic law—in this case: ss. 28–30 OMA 2007. In effect, any deprivation of liberty might be 'lawful' in view of domestic law,<sup>58</sup> but still be arbitrary.<sup>59</sup> Of course, the notion of arbitrariness can vary widely resembling thus its jurisprudential mirror image, i.e. discretion. But the varying element are surface features, not structural ones. I showed above that the polygraph test cannot be standardised due to the complexity of the interview qua discursive phenomenon. Lack of standardisation necessitates ad-hoc improvisation so that ultimately the term 'test' is a misnomer. What is more, the Strasbourg Court has stressed that arbitrariness may arise where there has been an element of bad faith or deception on the part of authorities involved.<sup>60</sup> This becomes again relevant since deception is built into the fabric of the polygraph interview.

We conclude thus that the requirement of lawfulness is not satisfied merely by compliance with the relevant domestic law; the latter must itself be in conformity with general principles salient in the respective legal order including the Convention rights.<sup>61</sup>

### *Lack of integrity*

We saw above that in view of the ECtHR's jurisprudence<sup>62</sup> any risk of arbitrariness is considered incompatible with the lawfulness requirement. For the administration of the polygraph examination cannot guarantee that like cases will be treated similarly and different cases differently. This is, however, not the only problem. The use of the polygraph poses a serious threat for the very integrity of the legal order.

Undoubtedly, the epistemic and normative objectives in the probation context are constituted in a much different way than the set of rules permeating the criminal process. We cannot expect, indeed desire, the same level of procedural and evidential guarantees across the criminal justice system. However, a core minimum should be preserved. By deploying interview rituals masqueraded as technological solutions which on their own terms lack scientific validity, we jeopardise not just the rationality of a legal order, but, most importantly, some of its structural features: its normative cohesion and integrity. From the premise that integrity is the surface feature of a set of institutional practices and procedures permeated by the same core values, or at least values which are not directly contradicting each other, we conclude that the use of unreliable methods in allegedly siloed parts of the criminal justice system jeopardises the *unity* of law. What is more, the above-mentioned interview rituals are even

54. *S., V. and A. v Denmark* [GC]—35553/12, 36678/12 and 36711/12; *McKay v the United Kingdom* ([GC], no. 543/03, ECHR 2006-X).

55. *Dumitru Popescu v Romania* (No 2) (App. no. 71525/01).

56. *Bărbulescu v Romania* [GC] (App. no. 61496/08), para. 119–122.

57. *Bykov v Russia* [GC] (App. no. 4378/02), para. 78–79.

58. By that I mean the individual Act of statute, not the legal order as a whole.

59. *Creangă v Romania* [GC] (App. no. 29226/03), para. 84; *A. and Others v the UK* [GC] (App. no. 3455/05), para. 164.

60. *Saadi v The United Kingdom* [GC] (App. no. 13229/03), para. 68–74.

61. *Plesó v Hungary* (App. no. 41242/08), para. 59.

62. *Bykov v Russia* [GC] (App. no. 4378/02), §§ 78–79.

among themselves uncoordinated and of varying professional standards.<sup>63</sup> In other words, the fragmentation of evidential standards is self-similar.

Let me clarify what exactly I argue for. I am *not* implying that in the criminal justice/penal system probation officers should not be making judgments about the individuals' level of compliance.<sup>64</sup> The law is highly context-sensitive, and discretion is part and parcel of probation work. There is after all a limit, inherent in legal language, to the granularity of guidance which officials/probation managers can receive. Treating decisions about unique individuals as if they are indistinguishable from general rules of conduct does not offer a viable solution to real-life problems, but merely adds to the uncertainty. What I *am* saying is that the decision-making process for recalling the released offender's licence is not, indeed cannot be nested in the evidential and procedural framework of guarantees salient in the criminal justice system especially vis-à-vis reliability, prohibition of verballing, and proper assessment of confession statements. This is particularly problematic from the point of view of the *integrity* of the criminal justice system insofar,<sup>65</sup> as we can only tolerate the use of deception and psychological manipulation for the extraction of confessions at the price of using *double evidential standards*. Making false representations about the validity of the device, especially about its diagnostic potential in order to instil fear and elicit semi-voluntary confessions, is deeply alarming not only vertically, i.e. with regard to the lack of validity of the procedure, but also horizontally, i.e. in view of the operational tensions *within* the criminal justice system. As Dixon explains: 'On a holistic view, integrity implies normative coherence rather than fragmentation or irreconcilable conflicts in fundamental commitments.'<sup>66</sup> Such a commitment is the requirement to ground decisions on procedurally validated, reliable evidence. It constitutes an irreconcilable contradiction to exclude unreliable evidence from the criminal process when at the same time these can be used to revoke a released offender's licence—whether the polygraph evidence is the sole evidential basis of the decision or not.

The generation and use of disclosures extracted with the use of polygraph exemplifies that fundamental values and principles of the criminal process are not integrated throughout the set of practices within the context of probation, i.e. across the penal system. Whereas e.g. confession evidence can be ruled (in-)admissible during a *voir dire*, an adverse statement during the polygraph test may trigger enforcement proceedings, i.e. may revoke the offender's licence and send him back to prison without any of the procedural and evidential guarantees of the interview processes set out in PACE and its codes of practice: that a person must be cautioned before being questioned about an alleged offence; that they must be informed of their legal rights; more specifically: that they are entitled to free legal advice; that they have the right not to incriminate themselves etc.

This disparity catalyses a *disintegration* process which threatens to break the criminal justice system to its component parts. For it will be increasingly difficult—especially now that other areas of law (domestic abuse, counter-terrorism) are queuing up to deploy the polygraph—to preserve one of the main features of law: its 'characteristic unity and continuity' (Hart, 1961: 116). The dissociation of *common* standards of validity through probation practice brings about the *Noah effect* which has become a shorthand term in modern science for discontinuity and disruption. The criminal justice system cannot integrate diametrically opposing standards of legal validity. The use of the polygraph proves thus to be more significant than its restricted use. It turns out to open a disconcerting gap between procedural rights

63. According to the Report of the Chief Inspector of Probation (Stacey, 2019), in 80% of Community Rehabilitation Companies (CRCs) inspected by HMI Probation the implementation and delivery of probation supervision has been rated as 'inadequate'. In the 10 CRCs inspected since January 2018, the implementation and delivery of probation supervision was rated as 'requiring improvement' in two, and 'inadequate' in the remaining eight.

64. Remember that individuals who have been found in breach of their license conditions may be recalled and return to prison at the instigation of their Offender Manager 'if their behaviour indicates an increased *risk* of serious harm to the public and/or (for people with determinate sentences) an increased *risk* of further offending'. HPPS (2019).

65. Term is used in *R v C* [2014] EWCA Crim 343, at [6] and [9]; *R v Clayton* [2014] EWCA Crim 1030 at [13].

66. See the collection of articles edited by Hunter et al (2016), especially Dixon (2016: 79).

and probation rights, between the criminal process and a probation system which appears to be by design ‘irredeemably flawed’ (Stacey, 2019: 20).

## Concluding remarks

In what has arguably been the most famous series in chess, the grandmaster Gary Kasparov made in the second game against ‘Deep Blue’ a highly unusual—for a player of his abilities—error: he forfeited a position which he probably could have drawn. Experts believe that the reason for Kasparov’s erratic behaviour in the second game actually lies in the first one where Deep Blue’s notorious 44th move was to move its rook for no apparent purpose (see Silver, 2012: 288 for more discussion). As it turned out, Deep Blue had just been unable to ‘select’ a move, so it picked a play totally *at random*. Kasparov then assumed that Deep Blue’s counterintuitive play, which in truth was merely the result of a bug, must have been a sign of superior intelligence. This made Kasparov feel anxious and, ultimately, led to the latter’s historic defeat.

In this article I tried to show that the same holds true in relation to the use of the polygraph masquerading as a ‘lie detector’. If anxiety caused a chess grandmaster to behave irrationally, then we can fathom a guess about the decisional impairment caused by Kafkaesque procedures involving pseudoscientific devices, psychological manipulation and fraudulent statements on released offenders.

The probation manager whose overarching objective is to rehabilitate offenders and thus reduce recidivism and protect society, resorts directly or indirectly to fraudulent claims, bogus interview methods and verballing tactics. In view of the general characteristics of released offenders (lack of qualifications, relative inability to gauge risks or control emotion), we can speak of interrogative suggestibility at its very worst. This raises questions about the general character of our punitive and probation policy. Deploying the polygraph has been known for decades to be about its deterrent effect (Lee, 1952) rather than its truth-conducive character. However, securing deterrence and compliance, which are the declared goal of inserting the polygraph in the licence of released offenders, comes at a heavy price: the dehumanisation of the interviewee. Minimising risks of harm to the public is a valuable pursuit. But even though the behaviour of the released offender should be monitored, released offenders need—in liberal societies—the necessary breathing space, guaranteed by human rights legislation (right not to incriminate oneself, protection against oppression and arbitrariness, dignified treatment of offenders and reliable investigation methods). Liberal orders should be able to accept and absorb micro-disturbances. Subjecting (vulnerable) individuals to zombie forensics and interview rituals to extract confession statements means that, as the High Court of England and Wales on a different occasion observed, we ‘undervalue a cardinal democratic freedom. In this country we have never had a Cheka, a Gestapo or a Stasi. We have never lived in an Orwellian society.’<sup>67</sup>

Very often in the history of criminal justice, institutions have exerted psychological or even physical pressure on the individual to bypass evidential arrangements, extract confession statements and discharge the burden of proof. A confession has always been regarded as the convenient solution, and the dependence (or perhaps: addiction?) of judicial systems on confessions has, historically, provided the blueprint for major failures. The use of the polygraph is a low point in the long effort to make sure that the criminal justice system is tethered to its own promulgated principles including rationalism (see ‘The law of expert evidence in England and Wales’ section) and individual rights (see under ‘Polygraph and human rights’).

I suspect that this irrational feature of our criminal justice system is something more than merely a bug in the system. For what produces aberrations from the point of view of the standard approach to criminal justice produces consistency from the perspective of a set of ideas which claim to gain relevance again: *actuarial justice*. The focus on managerialism and case-management rather than on

67. See also *Miller v College* [2020] EWHC 225 (Admin) at [257].

a procedurally validated and truth-conducive assessment of what happened in each case threatens to exempt probation from the criminal justice system including its network of constitutional, procedural, and evidential safeguards. This is too high a price for the detection of a released offender violating one of the imposed licence conditions. This article will, hopefully, help policy-makers and law officials to mark the boundary between fiction and reality and confine lie-detectors to the world of phantasy where they belong.

## Acknowledgements

I have benefitted greatly from the constructive criticism of Marion Oswald, Tony Ward, Alex Biedermann and Paul Roberts.

## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

## References

- Abrams S (1978) The utilization and effectiveness of the stimulation test. *Polygraph* 7(3): 178–181.
- Alder K (2007) *The Lie Detectors*. New York, Free Press.
- Anderson JR (2015) *Cognitive Psychology and Its Implications*. 8th ed. New York: Worth Publishers.
- Barland GH and Raskin DC (1973) Detection of deception. In: Prokasy WF and Raskin DC (eds) *Electrodermal Activity in Psychological Research*. New York: Academic Press, 418–471.
- Beccaria C (1785) *An Essay on Crime and Punishments*. Newbery.
- Biedermann A, Bozza S and Taroni F (2008) Decision theoretic properties of forensic identification: underlying logic and argumentative implications. *Forensic Science International* 177(2–3) 120–132.
- British Psychological Society (1986) Report of the Working Group on the Use of the Polygraph in Criminal Investigation and Personnel Screening. *Bulletin of the British Psychological Society* 39: 81–94.
- British Psychological Society (2004) *A Review of the Current Scientific Status and Fields of Application of Polygraphic Deception Detection*. London: British Psychological Society.
- Decker RE (1978) The army stimulation test. *Polygraph* 7: 176–177.
- Dennis I (2017) *The Law of Evidence*. 6th ed. London: Sweet & Maxwell.
- Dixon D (2016) Integrity, interrogation and criminal injustice. In: Hunter J, Roberts P, Young SNM and Dixon D (eds) *The Integrity of Criminal Process: From Theory into Practice*. Oxford: Hart Publishing, 75–98.
- Gannon TA, et al. (2012) *The Evaluation of the Mandatory Polygraph Pilot*. Ministry of Justice Research Series 14/12. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/217436/evaluation-of-mandatory-polygraph-pilot.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/217436/evaluation-of-mandatory-polygraph-pilot.pdf) (accessed 5 November 2020).
- Gudjonsson GH (2003) *The Psychology of Interrogations and Confessions*. Chichester, Wiley.
- Hart HLA (1961) *The Concept of Law*. Oxford: Clarendon Press.
- Her Majesty's Prison and Probation Service (HPPS) (2019) Recall to prison (guidance). Available at: [www.gov.uk/guidance/recall-to-prison](http://www.gov.uk/guidance/recall-to-prison) (accessed 7 June 2020).

- Hertfordshire Constabulary (2019) Annual Management Statement 2019. Available at: [www.herts.police.uk/assets/Information-and-services/About-us/Hertfordshire-Constabulary-Annual-Management-Statement-2019.pdf](http://www.herts.police.uk/assets/Information-and-services/About-us/Hertfordshire-Constabulary-Annual-Management-Statement-2019.pdf) (accessed 07 June 2020).
- Hickman RC (1978) Usefulness and theory of the stimulus test. *Polygraph* 7: 182–184.
- Home Office (2020) Domestic Abuse Bill 2020: overarching factsheet. Available at: [www.gov.uk/government/publications/domestic-abuse-bill-2020-factsheets/domestic-abuse-bill-2020-overarching-factsheet](http://www.gov.uk/government/publications/domestic-abuse-bill-2020-factsheets/domestic-abuse-bill-2020-overarching-factsheet) (accessed 14 December 2020).
- iBorderCtrl (2019) The project. Available at: <https://www.iborderctrl.eu/The-project> (accessed 7 June 2020).
- Jones EE and Sigall H (1971) The bogus pipeline: A new paradigm for measuring affect and attitude. *Psychological Bulletin* 76(5): 349–364.
- Hunter J, Roberts P, Young SNM and Dixon D (eds) (2016) *The Integrity of Criminal Process: From Theory into Practice*. Oxford: Hart Publishing. David Dixon, Integrity, Interrogation and Criminal Injustice, pp. 75–98 (79)
- Kotsoglou KN (2015) Über die ‘Verständigung’ im Strafverfahren als Aussageerpressung. *Zeitschrift für Internationale Strafrechtsdogmatik* 12: 175–199.
- Kotsoglou KN (2020) Accepting/rejecting unchallenged expert evidence: the decision-making prerogative. *The Journal of Criminal Law* 84(1): 86–89.
- Kotsoglou KN and Oswald M (2020) Not ‘very English’—on the use of the polygraph by the penal system in England and Wales. *The Journal of Criminal Law*. Epub ahead of print 2 December 2020. DOI: 10.1177/0022018320976284.
- Law Commission (2011) *Expert Evidence in Criminal Proceedings in England and Wales*. Law Com 325. London: The Stationery Office.
- Lee CD (1952) *The Instrumental Detection of Deception*. Springfield, IL: Thomas.
- National Investigative Interviewing Strategic Steering Group (NIISG) (2014) *National Policing Position Statement: The Use of the Polygraph in Investigations*. London: ACPO.
- Quiggin J (2012) *Zombie Economics: How Dead Ideas Still Walk among Us*. Princeton, NJ: Princeton University Press.
- Marston W (1921) Psychological possibilities in the deception tests. *Journal of Criminal Law and Criminology* 11: 551–570.
- McGinn M (1997) *Routledge Philosophy Guidebook to Wittgenstein and the Philosophical Investigations*. London: Routledge.
- Midgley M (2001) *Science and Poetry*. New York: Routledge.
- Ministry of Justice (2020a) Polygraph examinations: Counter Terrorism Bill 2019 to 2020. Available at: [www.gov.uk/government/publications/polygraph-examinations-counter-terrorism-bill-2019-to-2020](http://www.gov.uk/government/publications/polygraph-examinations-counter-terrorism-bill-2019-to-2020) (accessed 10 June 2020).
- Ministry of Justice (2020b) Mandatory Polygraph Tests. Counter Terrorism Bill. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/872087/ct-factsheet.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/872087/ct-factsheet.pdf) (accessed 2 July 2020).
- Ministry of Justice (2020c) Counter-Terrorism and Sentencing Bill 2020: ECHR Memorandum. Available at: [www.gov.uk/government/publications/counter-terrorism-and-sentencing-bill](http://www.gov.uk/government/publications/counter-terrorism-and-sentencing-bill) (accessed 5 November 2020).
- Münsterberg H (1908) *On the Witness Stand. Essays on Psychology and Crime*. New York: Doubleday.
- National Offender Management Service (UK) (2015) Polygraph Examinations: Instructions for Imposing Licence Conditions for the Polygraph on Sexual Offenders. Available at: [www.justice.gov.uk/](http://www.justice.gov.uk/)

- downloads/offenders/psipso/psi-2014/psi-36-2014-polygraph-examinations.pdf (accessed 7 June 2020).
- National Research Council (2003) *The Polygraph and Lie Detection*. Washington, DC: The National Academies Press.
- Office of Technology Assessment (1983) *Scientific Validity of Polygraph Testing: A Research Review and Evaluation*. Washington, DC: Office of Technology Assessment.
- Oswald M (2020) Technologies in the Twilight Zone: early lie detectors, machine learning and reformist legal realism. *International Review of Law, Computers & Technology* 34(2): 214–231.
- Risinger DM, Denbeaux MP and Saks MJ (1989) Exorcism of ignorance as a proxy for rational knowledge: the lessons of handwriting identification expertise. *University of Pennsylvania Law Review* 137: 731–792.
- Roberts P (2018) Making sense of forensic science evidence. In: Roberts P and Stockdale M (eds) *Forensic Science Evidence and Expert Witness Testimony: Reliability Through Reform?* Cheltenham: Edward Elgar Publishing, 27–70.
- Royal Commission on Criminal Procedure (1981) *The Royal Commission on Criminal Procedure (Philips Commission): Report. Cmnd. 8092*. London: HMSO.
- Schauer F (2012) Lie-detection, neuroscience, and the law of evidence. *Virginia Public Law and Legal Theory Research Paper No. 2012-49*.
- Senese L (1978) Accuracy of the polygraph technique with and without card test stimulation. *Polygraph* 7: 199–202.
- Silver N (2012) *The Signal and the Noise*. London: Penguin Books.
- Simon D (1992) *Homicide. A Year on The Killing Streets*. Edinburgh: Canongate.
- Stacey G (2019) *Report of the Chief Inspector of Probation*. Available at: [www.justiceinspectorates.gov.uk/hmiprobation/inspections/report-of-the-chief-inspector-of-probation/](http://www.justiceinspectorates.gov.uk/hmiprobation/inspections/report-of-the-chief-inspector-of-probation/) (accessed 14 December 2020).
- Stockdale M and Grubin D (2012) The admissibility of polygraph evidence in English criminal proceedings. *Journal of Criminal Law* 76(3): 232–252.
- Striker G (1996) κριτήριο της ἀληθείας. In: Striker G *Essays on Hellenistic Epistemology and Ethics*. Cambridge: Cambridge University Press.
- The Royal Commission on Criminal Justice (1993) *Report*. Cm. 2263. London: HMSO.
- Travers PL (2008) *Mary Poppins Comes Back*. In: *Mary Poppins—The Complete Collection*. London, Harper Collins Publishers.
- US Department of Defense (1997) *TES Administration Guidelines*. Report No. DoDPI97-P-0009.
- Ward T (2020) Explaining and trusting expert evidence: What is a ‘sufficiently reliable scientific basis’? *International Journal of Evidence & Proof* 2020 (<https://doi.org/10.1177/1365712720927622>)
- Wittgenstein L (1991) *The Blue and Brown Books: Preliminary Studies for the ‘Philosophical Investigations’*. 2nd ed. Malden, MA/Oxford: Wiley-Blackwell.
- Wundt W (1902) *Grundzüge der physiologischen Psychologie*. 5th ed. Vol. 1. Leipzig: Engelmann.