

Polygraph Testing of 'Low Risk' Offenders Arrested for Downloading Indecent Images of Children

Don Grubin¹, Andrew Joyce², Eric Jay Holden³

¹ Newcastle University, St Nicholas Hospital

² Hertfordshire Constabulary

³ Behavior Measures SW

[Sexual Offender Treatment, Volume 9 (2014), Issue 1]

Abstract

Background: Police investigation of men arrested for downloading indecent images of children is costly and resource intensive. Assessment of their risk is typically based on information already known to the police, and material obtained at arrest and during the police interview. Full forensic examination of an offender's IT media tends to contribute little apart from the number and type of images viewed. For offenders considered 'low risk' it can be difficult to determine whether this is the result of an absence of relevant information. If 'low risk' internet offenders could be identified with confidence there would be benefits in terms of more efficient use of police resources and public protection. This study examined whether information obtained from polygraph testing could assist in assessing these individuals.

Methods: Polygraph tests were carried out on 31 men arrested for downloading indecent images of children. All were considered 'low risk' by the police. 'Low risk' was defined as those whose offending was believed to be limited to downloading images, with nothing to suggest involvement in any other sexual activity involving children.

Results: Low risk was confirmed in only 8 individuals (26%). Risk level was raised for 11 men based on their disclosures, for 11 others (35%) after they were found 'deceptive' on the polygraph, and in one case where countermeasures were used. Computer hard drives were subsequently examined, but no new information was uncovered. If a full forensic examination of the computer hardware of those confirmed as low risk was replaced with a summary examination only, savings of 9% would have been obtained.

Conclusions: Polygraph testing of apparently low risk men arrested for downloading indecent images of children has the potential to enhance public safety while at the same time conserving and better targeting police resources.

Key words: polygraph testing, internet offending, indecent images of children, risk assessment, cost-benefit

Introduction

In 2011, 1489 men and 5 women in England and Wales were sentenced for offences relating to possessing, making, or distributing indecent images of children over the internet (Ministry of Justice, 2012). An unknown but not insubstantial number of others received police cautions for this type of offending, while more still were arrested with no further action being taken. For the police, the investigation of internet crime is costly and resource intensive. It can take up to a year for an

offender's IT media to be forensically examined: conservative estimates suggest that it costs approximately £500 to complete a detailed examination of a computer hard drive, with many offenders having more than one IT device.

Although the activities of many internet offenders are limited to downloading indecent images, others are large scale distributors or have attempted to contact children for sexual purposes. In addition, it is estimated that over 50% of men convicted of internet offences have committed sexual assaults on children, the vast majority of which are undetected (Seto, Hanson, & Babchishin, 2011). Even when there is insufficient evidence to prosecute in respect of more serious offending, decisions must be made regarding whether to charge or issue a caution, and about the intensity of any post-conviction supervision - the majority of internet offenders do not appear to represent an ongoing risk to children, with five year sex offence reconviction rates around 5% (Seto, Hanson, & Babchishin, 2011), although the extent of reoffending that does not lead to reconviction, of course, is unknown.

Forensic examination of an offender's IT media may assist in detecting crimes beyond the downloading of images. It may also contribute to an assessment of an offender's risk. Typically, however, little of relevance is found apart from the images themselves. Risk assessment, therefore, is reliant on information already known to the police, material obtained at arrest, and what is disclosed during police interview. This is usually not a problem in the case of 'high risk' offenders about whom sufficient background is already known. In offenders who are considered 'low risk', however, it can be difficult to determine whether this because they genuinely represent a low risk to children, or simply the result of having limited information about them.

If it was possible to identify 'low risk' internet offenders with more confidence, significant benefits would follow, with police resources focused on those individuals who represent the greatest risk to children. In addition, considerable cost savings could be achieved if the IT devices of low risk offenders did not need to be subjected to a full forensic examination in which, for example, deleted files are recovered and hidden folders are searched for, but underwent a more limited, summary examination instead. Furthermore, low risk individuals would pass more speedily through the system, to the benefit of both the criminal justice system and the offender himself. And finally, subsequent management would be better informed.

Polygraph testing is used by many police forces in many countries as an adjunct to crime investigation, although in others, particularly some European ones, techniques such as this are considered to be breach of legislative or ethical principles. Whether an individual passes or fails a polygraph test can assist in decision making, but perhaps more importantly information obtained from disclosures made during the polygraph examination can help focus an investigation.

Polygraph testing is not without controversy. Some question its reliability and accuracy, others the way it is used in specific applications such as in the management of sex offenders, while others are concerned about how it fits with the rules of evidence in legal settings (British Psychological Society 1986 and 2004; Cross & Saxe, 2001; Fiedler, Schmid, & Stahl, 2002; Iacono, 2008); proponents, however, argue that many of the criticisms are based on misunderstandings of how polygraphy is used, point to accuracy estimates in the range of 80 to 90%, and note its utility in facilitating disclosures (Grubin, 2008 and 2010; Honts, Raskin, & Kircher, 2002; Honts & Schweinle, 2009). Underlying the arguments regarding polygraphy, however, are the extent to which it should be considered a 'scientific test', and problems in guaranteeing examiner competence and quality assurance (National Research Council, 2003).

Because of its reported ability to facilitate disclosures and to enhance credibility assessment,

polygraphy would appear to have potential application in respect of individuals arrested for downloading indecent images of children, where there is often limited relevant information available about background and behaviour. But as the police already have sufficient material to make judgements regarding high risk individuals, the aim of this study is to explore whether polygraph testing can assist in the assessment of risk in apparently 'low risk' offenders.

Method

Men arrested for downloading indecent images of children by Hertfordshire Police in England and whose risk was judged to be 'low' by the police were asked if they would be willing to undergo polygraph testing as a means of establishing the extent of their offending behaviour. 'Low risk' individuals were defined as those whose offending was believed to be limited to the downloading of images, and for whom there was no police intelligence to suggest involvement in any other sexual activity involving children. Specifically, the police had no reason to believe that the individual was involved in taking or distributing of images (apart from low level peer to peer), had communicated with children for sexual purposes, had made attempts to meet children, or had previously committed a contact sex offence. The number and severity of images were irrelevant to this risk assessment.

The study was run in the Hertfordshire Constabulary area in England, but a small number of individuals arrested by Bedfordshire Police also took part. The invitation to attend for a polygraph test took place after the individual had been arrested, interviewed under caution, and released on police bail, but before a full examination of IT devices had been undertaken. The only inducement to take a polygraph test was that the IT examination would be expedited. All tests were visually and audio recorded. The men were informed that any information obtained from the tests would be shared with the police, although the test outcome itself would not be used in criminal proceedings. Police officers were not in the room during the polygraph session, but an officer participated in the post-test interviews.

Because the aim of the polygraph examination was to confirm an individual's 'low risk' status, on the test each offender was asked questions regarding the taking of indecent images of children, distribution of indecent images, communicating with or attempting to meet children through the internet, and actual contact offences with children. The polygraph examination itself used the 'Comparison Question Technique' as this format is most suited to the screening type of test used here (the other most commonly used test type is the Concealed Information Test, but this requires a known event to have taken place).

After the first six offenders were tested it was decided to offer men the opportunity to meet with a counsellor immediately following the polygraph examination. This was to ensure that the test had not caused the individual undue distress (and to provide support if it did), to allow further exploration of any issues that arose during the test, and to discuss possible treatment options.

Testing took place on three separate occasions over 14 months. The same examiner carried out all of the tests. In total, 103 men were invited to participate, of whom 31 (30%) attended for testing. The IT media of all those tested was subsequently subjected to a full forensic examination as per normal practice.

The polygraph examination

The polygraph examination consists of three phases. The first is a lengthy pre-test interview in which the examiner obtains background information, establishes the test questions, and demonstrates the polygraph. This first phase provides an initial opportunity for the individual to

disclose relevant information. The second phase is the test itself in which the individual is asked a small number of questions that can be answered yes or no while the polygraph instrument records his physiological responses. The third phase is a post-test 'debrief' in which the individual is given an opportunity to explain any responses that appear to be deceptive, and to make further disclosures, although in the present study the post-test was brief because of logistical reasons.

Results

Demographic characteristics

The 31 men who were tested ranged in age from 26 to 65, with an average age of 46.5. Twelve (39%) were single and living on their own. Nearly all (27, 87%) were in work. Eleven men (35%) had some access to children.

Only one individual had a criminal record, and that was a single conviction for a theft related offence. Three men, however, had allegations of a sexual nature made against them in the past which had not resulted in charges, but as these allegations were of a low level of seriousness, arose many years ago, and the men had not come to police attention since these it was decided to include them in the study.

All but one individual were rated as either low or medium risk on the internet offender version of Risk Matrix 2000, an actuarial instrument used by the police to determine the risk of sexual reoffending (technically Risk Matrix can only be used with men who have a conviction or caution for a sexual offence, but for the purposes of this study the current offence under investigation was considered as the qualifying offence as all admitted the offences). One man scored as 'high risk' because of his age, he had never been in a relationship lasting more than two years, and the images in his possession were of boys, but because of the way in which Risk Matrix 2000 is scored, his risk will reduce to 'medium' in a year, when he turns 35. It should be noted that risk as determined by Risk Matrix 2000 refers to likelihood of reoffending rather than risk as defined in this study, which relates to whether there additional sexual activity with children has been attempted or took place.

IT media

An average of 4 hard drives were recovered from each individual; the median was 3. An average of 5 other devices (range 0 to 22, median 3), such as phones able to access the internet, were also recovered.

A full forensic examination of IT devices was completed in every case (Table 1). All men had downloaded Level 1 images on the Sentencing Advisory Panel scale (nudity or erotic posing with no sexual activity), with 12 in possession of more than 1000 such images. Evidence of Level 3 or Level 4 images (sexual activity between adults and children) was found on the IT devices of all but one man. In 22 cases (71%) there was evidence of at least one Level 5 image (sadism or bestiality).

Table 1: Indecent Images Found on Computer Hard Drives, including both still images and video

(31 men)

Level ¹	Mean	Median	Range
1	11,827	488	3 – 172,023
2	745	45	0 – 15,391
3	584	31	0 – 4,269
4	743	22	0 – 6,025
5	62	1	0 - 861

¹ Levels refer to guidance provided by the Sentencing Advisory Panel as follows:

Level 1: nudity or erotic posing with no sexual activity

Level 2: sexual activity between children or solo masturbation by a child

Level 3: non-penetrative sexual activity between adults and children

Level 4: penetrative sexual activity involving children

Level 5: sadism or bestiality

Initial police interviews

Just one police interview elicited new information regarding inappropriate sexual activity leading to a re-evaluation of risk - in that case the individual admitted to sharing images of children with other men (while this meant he was no longer 'low risk' for the purposes of the study, he was nonetheless tested in respect of the other risk issues).

Polygraph examinations

Test Results

'No Deception Indicated' (NDI), that is, a 'passed' test, was the outcome in 12 cases (39%). In 5 of the NDI tests (42%), risk related disclosures were made (because the disclosures were made in the pre-test interview with the examiner, the relevant material was excluded from the test phase itself, enabling an NDI finding).

'Deception Indicated' (DI), that is, a 'failed' test, was the outcome in 17 cases (55%). In 6 of the DI tests (35%) risk related disclosures were made, all in the pre-test interview.

A finding of 'inconclusive', that is, no conclusion could be reached regarding deception, was made in 2 cases (7%). One of these men was suspected of using countermeasures, which is the use of physical or mental techniques intended to 'beat' the polygraphy; in this case there were clear attempts by the individual to modify his breathing. No disclosures were made in either of the inconclusive tests.

Although DI results relate to the test and not to individual questions, analysis of specific test questions indicated that some men showed deceptive responses to more than one question; 9 men (29%) responded significantly to the question regarding past sexual contact with a child, 6 (19%) to communicating with or attempting to meet a child using the internet, 4 (13%) to taking indecent images of a child, and 3 (10%) to distributing images.

Disclosures

As indicated above, 11 men (35%) made significant new disclosures during the polygraph examination (some made more than one disclosure), all in the pre-test interview, although they were confirmed post-test in the presence of a police officer. This involved information that was not previously known to the police and which had not emerged from police interview:

- 5 were of past sexual contact with children (two made by the same man)
- 3 were highly suggestive of past sexual contact with children although actual sexual behaviour was not reported
- 2 were of possibly suspicious foreign travel
- 2 related to distribution greater than simple peer to peer
- 3 related to online sexual interactions with children
- 2 referred to online discussions with other men regarding indecent images
- 1 was of taking a 'non-indecent' photo of a 10 year old girl in the street to whom he said he was sexually attracted
- 1 admitted filming children in the street outside his house

In addition to disclosures directly related to risk, 6 men admitted to having a sexual motivation for downloading the images which they had previously denied. Three of these men also made other, risk related disclosures of the type referred to above.

Further investigations

Based on either disclosures or test outcome, the police undertook further investigations in 15 cases. This resulted in significant findings in 4 men:

- one man disclosed that he had been charged with sex offences in another country; when followed-up an outstanding warrant for his arrest in that country was discovered.
- the second case involved disclosure of a contact offence against a child that took place more than twenty years before. The victim was traced and reported a number of instances of sexual abuse that occurred when she was nine years of age. She did not report the offences at the time, but now wanted to do so. The individual was subsequently charged with offences relating to this victim.
- in the third instance a man disclosed distributing indecent images which was confirmed on a subsequent examination of his hard drive. He too was charged with further offences.
- the fourth individual described having web-cam sessions with young girls during which he persuaded them to undress. Although it was not possible to obtain evidence sufficient for a prosecution, this information was passed on for risk management purposes.

Examination of IT media

As indicated above, the results of a full IT media examination were available in every case. Apart from the indecent images themselves, no material was found additional to what had been disclosed during the polygraph session, although in one case the police were able to trace and interview a

child who was the subject of a level 1 image taken by the individual.

Confirmation of risk level

As a result of either disclosures or test outcome, the initial assessment of 'low' risk was confirmed in just 8 men (26%). Seven were NDI and made no disclosures, and 1 had an inconclusive test result.

Risk level was modified upwards for the other 23 men (74%): 5 were NDI but made disclosures, 6 were DI and made disclosures, 11 were DI but made no disclosures, and 1 was inconclusive and made no disclosures but was thought to have used countermeasures.

Cost-benefit analysis

For the purposes of this study, the cost of carrying out a full forensic examination of a computer hard drive was set at £500, the estimated cost of a summary examination sufficient for extracting images for a prosecute or caution at £40, and the cost of a polygraph examination £350.

Twenty six hard drives were recovered from the 8 men who were confirmed as 'low risk'. If these hard drives were summarily examined only, then £13,000 would have been saved by not proceeding to a full IT examination (26 hard drives x £500), while £1040 would have been spent on summary examination of the 26 hard drives. To achieve this, 31 men were polygraphed, at a cost of £10,850. This results in net savings of £1110, or 9%.

This analysis does not include further savings that would have arisen by not subjecting other IT media held by the 'low risk' men to a full forensic examination (the 8 men had 38 other devices between them), nor does it include potential savings in relation to the time required for the police to deal with the results of the full computer analyses. In addition, should the results of the polygraph testing be used to support a decision to caution rather than prosecute an individual, substantial further savings would arise from not progressing the case through the court system.

Finally, this analysis also does not include the contribution to public protection relating to the risk related disclosures made by 11 individuals.

Discussion

We found that of 31 men arrested for possessing indecent images of children and who were assessed as 'low risk' - that is, their sexual offending behaviour was believed to be limited to downloading images - just 8 (26%) were still considered to be 'low risk' after undergoing a polygraph test. In this context, risk relates to the extent to which the offender engaged in previous activity of concern rather than risk of recidivism. In about a third of cases the change in risk assessment resulted from disclosures made during the test, and in another third it was because the individual was found to be deceptive to questions regarding taking of indecent images of children, distributing indecent images, communicating with or attempting to meet children through the internet, or actual contact offences with children. One individual's risk was increased because of his use of countermeasures. Two previously undetected contact offences were identified and confirmed, as was a case of distributing indecent images of children, while a range of other worrying behaviour was identified.

Our findings are consistent with meta-analyses which indicate that while most of those convicted of downloading indecent images have no history of sex offence convictions, up to 55% self-report a

history of contact offending in post-conviction settings (Seto, Hanson, & Babchishin, 2011). In our pre-charge context we did not expect such high levels of self-reported offending, but four men (13%) admitted to previous sexual activity with a child, (one of them with two separate victims), three others (10%) made disclosures suggestive of this, while about a third showed a significant response to the test question regarding sexual contact with a child, amounting to about half those tested. It is not clear whether those with undetected offences other than downloading represent a higher recidivism risk than those without (which is an issue in sex offenders more generally), although there is some evidence to suggest they might be (Wolak, et al, 2008).

While a re-evaluation of risk is non-contentious in those individuals who make disclosures indicative of relevant behaviour, even where this does not amount to admission of an actual offence, the situation is less straightforward in cases where no disclosures are made but a finding of deception is made. Polygraphy is subject to both false negative and false positive outcomes (that is, concluding that someone is truthful when they are not in the former case, and that they are deceptive when in fact telling the truth in the latter), and one must be cautious in making decisions wholly on the basis of a test result.

The Comparison Question Technique (CQT), which is the type of examination used in this study, is more susceptible to false positive than false negative results - even critics of the CQT acknowledge that, "Innocent individuals are more likely to fail than are guilty individuals to pass. . . . This means that in general, passed CQTs are more credible than failed CQTs." (Ionoco, 2008, at p. 1305). Thus, one can be reasonably confident that those whose test outcome was No Deception Indicated (NDI) in our study are genuinely low risk (although this assumes that they did not make use of undetected countermeasures). In respect of those with Deception Indicated (DI) tests, however, in the absence of further information it is probably safest to conclude only that they cannot be confirmed as 'low risk': the finding should be treated as a warning flag, indicating first that additional investigation may be warranted, and second, that the individual should not be managed as a low risk offender in the initial post conviction period.

If polygraph tests were introduced on a voluntary basis as part of the investigation of men arrested for downloading indecent images of children, they would take place after arrest and a formal police interview, but before a full examination of IT media. If, informed by the results of the polygraph examination, the IT devices of those determined to be 'low risk' were subject to summary rather than a full forensic examination, significant cost savings could be achieved, depending on the proportion of individuals and the number of devices involved - in our study, where about a quarter of those arrested were confirmed as low risk, the savings would have been in the region of 10% before taking into account reduced costs to the criminal justice system in general (for example, if a decision is made to caution rather than to prosecute). If over time only genuinely low risk men volunteered to be tested, the amount saved would increase markedly as a lower proportion of those tested would require their IT devices to undergo a full forensic examination. These savings would be in addition to the information gained that is directly relevant to public safety, and which even full analyses of hard drives and other IT devices does not provide.

Of course, it is not possible to determine for sure whether those men 'confirmed' by the polygraph to be 'low risk' are genuinely of low risk. But in the absence of polygraph testing all of them would have been considered to be low risk anyway, so an inaccurate polygraph result would not have affected their management. Similarly, an inaccurate Deception Indicated finding does not make anyone any worse off, as for them it is business as usual - their computers will be examined as normal, and standard post-conviction supervision will be put in place.

Conclusion

Polygraph testing is not without its critics (British Psychological Society, 2004; Fiedler, Schmid, & Stahl, 2002). However, much of the criticism relates to unsupported or unjustified claims of efficacy and accuracy, or to poor practice. There is evidence to show that applied properly and interpreted carefully, polygraphy can play a valuable role in a number of settings (Grubin & Madsen, 2005; Grubin, 2008; Honts & Schweinle, 2009). It is important, however, that examiners are competent and subject to stringent quality assurance.

Our findings suggest that polygraphy can be a useful adjunct in the investigation of men arrested for downloading indecent images of children. The study was small, however, and far from definitive. We believe larger trials are warranted, particularly given the difficulties inherent in accurately assessing men whose offending comes to light because of the internet. It remains to be seen whether those arrested for downloading indecent images of children will continue to agree to polygraph testing, and if they do whether the proportion whose risk assessment remains unchanged will alter. The views of their legal representatives will also be of interest.

References

1. 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.
2. British Psychological Society (2004). A review of the current scientific status and fields of application of polygraphic deception detection. Report (26 May 2004) from the BPS working party (<http://www.bps.org.uk>)
3. Cross, T., & Saxe, L. (2001). Polygraph testing and sexual abuse: The lure of the magic lasso. *Child Maltreatment*, 6, 195-206
4. Fiedler, K., Schmid, J., & Stahl, T. (2002). What is the current truth about polygraph lie detection? *Basic and Applied Social Psychology*, 24, 313-324.
5. Grubin, D., & Madsen, L. (2005). Lie Detection and the Polygraph: A historical review. *British Journal of Forensic Psychiatry and Psychology*, 16, 357-369.
6. Grubin, D. (2008). The case for polygraph testing of sex offenders. *Legal and Criminological Psychology*, 13, 177-189.
7. Grubin, D. (2010). A Trial of Voluntary Polygraphy Testing in 10 English Probation Areas. *Sex Abuse*, 22, 266-278.
8. Honts, C. R., Raskin, D., & Kircher, J. (2002). The scientific status of research on polygraph techniques: The case for polygraph tests. In D. L. Faigman, D. H. Kaye, M. J. Saks, & J. Sanders (Eds.), *Modern scientific evidence: The law and science of expert testimony* (Vol. 2, pp. 446-483). St. Paul, MN: West.
9. Honts, C. R., & Schweinle, W. (2009). Information Gain of Psychophysiological Detection of Deception in Forensic and Screening Settings. *Appl Psychophysiol Biofeedback*, 34, 161-172.
10. Iacono, W. G. (2008). Effective Policing: Understanding How Polygraph Tests Work and Are Used. *Criminal Justice and Behavior*, 35, 1295-1308.
11. Ministry of Justice (2012). <http://www.justice.gov.uk/statistics/criminal-justice/criminal-justice-statistics>
12. National Research Council (2003). *The polygraph and lie detection*. Committee to Review the Scientific Evidence on the Polygraph. Washington, DC: The National Academic Press.
13. Seto, M. C., Hanson, R. K., & Babchishin, K. M. (2011). Contact Sexual Offending by Men with Online Sexual Offences. *Sexual Abuse: A Journal of Research and Treatment*, 23,

121-145.

14. Wolak, J., Finkelhor, D., Mitchell, K. J., & Ybarra, M. (2008). Online "predators" and their victims: Myths, realities, and implications for prevention and treatment. *American Psychologist*, 63, 111-128.

Acknowledgements

We would like to thank Detective Chief Inspector Glen Channer, Detective Inspector Michael Trotman, and Detective Inspector Damian Kennedy for their support and encouragement.

Author address

Don Grubin (*corresponding author*)

*Newcastle University
St Nicholas Hospital
Gosforth
Newcastle upon Tyne
UK NE3 3XT
Tel: 44 191 223 2454
Fax: 44 191 223 2712
don.grubin@ncl.ac.uk*

Andrew Joyce

*Hertfordshire Constabulary
Stanborough Road
Welwyn Garden City
Hertfordshire
UK AL8 6XF*

Eric Jay Holden

*Behavior Measures SW
1720 Regal Row, Ste. 120
Dallas Texas 75235*