New York State Division of Probation and Correctional Alternatives

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Research Bulletin 3
The Use of the Polygraph in Sex Offender Management
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During the summer of 2006, the Division of Probation and Correctional Alternatives (DPCA) conducted a survey of local Probation Departments to assess sex offender management practices. Among the resulting recommendations was that DPCA draft and disseminate a series of research bulletins on issues related to sex offender management so that probation officers in the field would have the latest information.

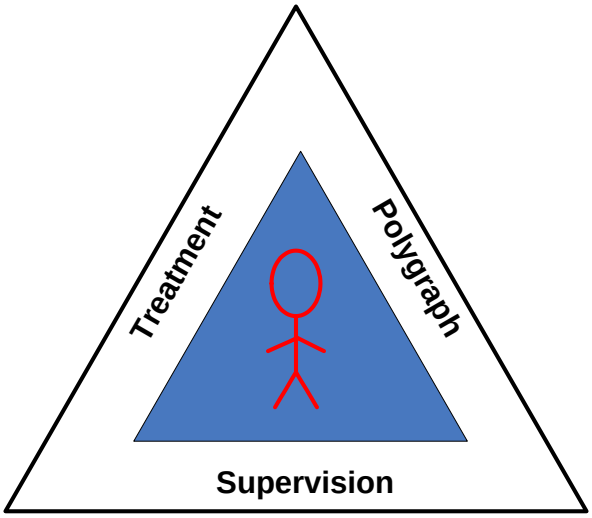
This bulletin is part of a series that will examine issues specific to managing sex offenders in the community including assessment, pre-sentence investigation, treatment, supervision strategies to reduce risk, the use of technology such as the polygraph, Global Positioning Systems (GPS) and forensic computer searches.

A copy of the survey and results can be found at:

http://www.dpca.state.ny.us

Criminal justice professionals who manage sex offenders have a range of methods available to assess sex offenders in either community or clinical settings. Community correction professionals may use a number of the actuarial instruments introduced in the first and second bulletins of this series, and clinicians have access to a multitude of clinically-based instruments to delve into the psychological domains of sexual offending.

This bulletin will discuss another instrument central to the supervision of adult sex offenders – the polygraph. Unlike law enforcement officers who use the polygraph to elicit information regarding criminal investigations, when used with sex offenders the focus changes to eliciting information that is germane to the treatment and management of the offender to reduce risk to the community.



Sex offending is shrouded in secrecy and denial. Honest disclosure of behavior while under community supervision, and sexual offending history including unreported offenses and victim preferences, are critical to risk assessment and management. Although confidentiality agreements can be used to encourage disclosure by sex offenders to community supervision officers and therapists, control and gauging the reliability of such information may be difficult if not impossible in a community supervision setting. Use of the polygraph with sex offenders under community supervision can serve to help the probationer overcome denial, aid in developing treatment plans, be a deterrent for sexual reoffending and assist in monitoring compliance with the conditions of supervision.

This review will include an overview of the psychophysiological detection of deception, the purpose and structure of a post-conviction sex offender polygraph testing program, legal issues and current research. Professional standards from the American Polygraph Association, the Association for the Treatment of Sexual Abusers and the Center for Sex Offender Management will be discussed in the context of the *Containment Approach*: polygraph, sex offender treatment, and community supervision.

There are two main arguments frequently made against the use of the polygraph with sex offenders. The first is that the polygraph does not meet standards for educational or psychological testing and thus, the results are generally not admissible in court. However, when used in the context of treatment and supervision, the issue is no longer relevant because the information typically is not used against the offender in a court of law, at least not on the issue of guilt or innocence. The second issue is a lack of standardization and problems with validation research. These issues will be addressed here; the subject of admissibility in probation violation proceedings will be discussed later.

The Science and Reality of the Detection of Deception

The most common method to detect deception using psychophysiological responses is the polygraph. A second method proposed is called voice stress analysis or voice stress test. Research into using functional Magnetic Resonance Imaging (MRI) may bring more accurate methods in the future.[1] This bulletin will focus on the polygraph.

Polygraph: Overview[2]

The term polygraph literally means "many writings" (American Polygraph Association; Gannon, Beech, & Ward, 2008). The name refers to the manner in which selected physiological activities are simultaneously recorded. The polygraph is based on the "fight or flight" phenomenon, as seen in Figure 1, which is defined as a response to a physical or psychological threat that will automatically elicit a set of physiological changes that can be measured by the equipment used in a polygraph examination**.** A polygraph machine itself does not return a result of deception indicated or truthfulness. Rather, a determination is rendered by the examiner's interpretation of the physiological responses in relation to the questions.

It is important to understand what a polygraph examination entails. A polygraph instrument will collect physiological data from three systems in the human body and record them on either paper (analog) charts or computer systems (digital). When the examinee is connected to the machine, convoluted rubber tubes are placed over his or her chest and abdominal area to record respiratory activity, also known as a pneumograph. Two small metal plates attached to the fingers will record electrodermal activity. Finally, a blood pressure cuff or similar device is used to record cardiovascular activity (heart rate and blood pressure), also called a cardiograph.

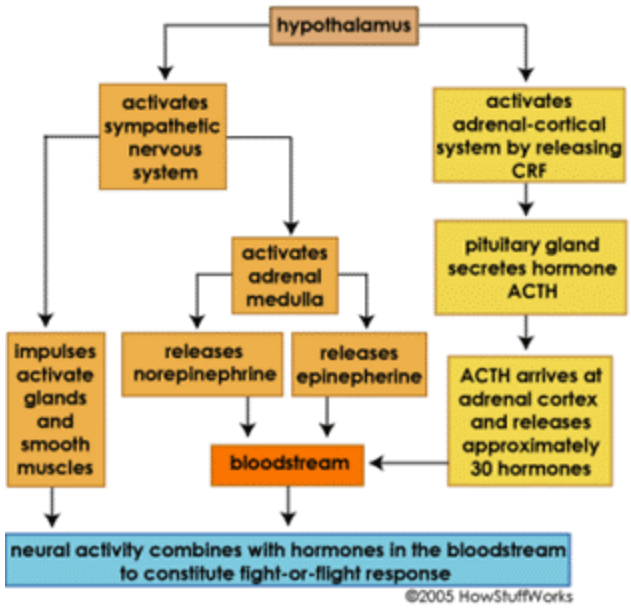


Figure 1. The fight or flight response.

Readers should note that a polygraph does not include the analysis of physiology associated with the voice. Instruments that claim to record voice stress are not considered polygraph examinations[3] and will be discussed briefly in the next section.

A typical polygraph examination will include a period referred to as a pre-test, a chart collection phase, and a test data analysis phase.

In the pre-test phase, the polygraph examiner will complete various ancillary tasks as introductions, assessing whether the examinee is appropriate for the polygraph examination, obtaining written

[1] For the pros and cons of functional MRI see Langleben (2008) and Spence (2008), respectively.

[2] For a glossary of polygraph-related terms, see Kraphol & Sturm. (2002). Terminology References for the Science of Psychophysiological Detection of Deception. *Polygraph, 31(3),* 154-239. http://www.dpor.virginia.gov/dporweb/313154.pdf.

[3] http://www.polygraph.org.faq.cfm

consent, provide an overview of the polygraph, question development, etc. The goals of the pre-test interview are: 1) to convince the subject that the polygraph is highly effective by introducing the rationale and procedures of an exam, it may include a demonstration typically engineered to "prove" the accuracy of the polygraph; 2) develop comparison questions through an interview process; and 3) to "provoke and observe various behaviors indicative of the examinee's deception or honesty regarding the crime in question." (Mitchell, 2002, p. 184). The polygrapher will generally attempt to focus the person taking the exam on the examination itself and away from outside issues that might influence outcomes.

During the chart collection phase, the examiner will administer the examination questions and collect a number of polygraph charts while asking questions of the examinee (see Figure 2). Three to five charts is considered standard; three are drawn, more if they appear conflicted (Kircher, Horowitz, & Raskin, 1988). Following this, the examiner will analyze the charts reflecting psychophysiological responses using one of a number of scoring methods, and render an opinion as to the truthfulness of the person taking the test. Exact methods and elements vary by polygrapher. The test results may indicate deception, truthfulness or be inconclusive.

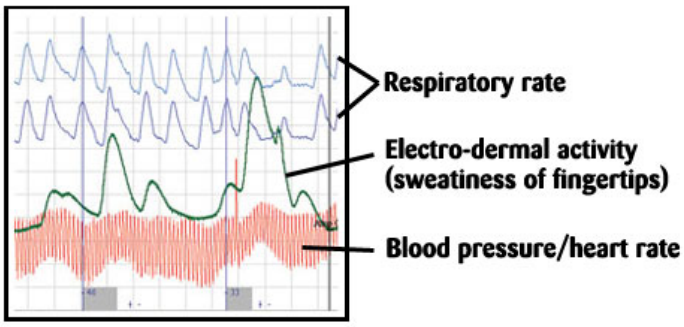


Figure 2. Sample polygraph chart.

The examiner, when appropriate, will offer the examinee an opportunity to explain physiological responses in relation to one or more questions asked during the test. When used post-conviction with sex offenders, this period is *critical* because it offers the offender the chance to explain deception or confess to behavior that heretofore had not been disclosed.

Methods of Questioning

Questioning methods can be placed into two broad categories. The first group attempts to discover information available only to the examinee (guilty information) and includes the guilty knowledge test (GNT)[4] typically used by law enforcement for investigation purposes. The second group is referred to as *detection of deception* or *guilty person* techniques that attempt to classify examinees (Honts & Perry, 1992) and includes the Relevant/ Irrelevant Technique (RIT), the Control or Comparison or Control Question Test (CQT), the Zone Comparison Technique (ZCT), and the Utah Probable-Lie Test. A third type of test is called the Peak-of-Tension test.[5]

Polygraph testing of the sex offender has traditionally relied on the CQT method (Gannon, Beech, & Ward, 2008), but others recommend the Utah Probable-Lie Test (Blackstone, 2008). All methods utilize relevant (issue-specific) and comparison questions. Inference rules must be specified, and are defined as "a decision rule…for the physiological measures, so that every value (or combination of values) …is associated with a specific classification of the item or the person under investigation" (Ben-Shakhar & Furedy, 1990, p. 18).

The Relevant/Irrelevant Questioning Technique (RIT) was the first technique developed: the

[4] The GNT is also known as the concealed information test. In addition to the control questions, the examiner asks up to five relevant questions regarding an event, four of which are false information and one is a known fact (National Research Council, 2003). The advantages of the GNT are that it is rooted in the established psychophysiological concept of orienting responses, and is based more on cognition than the individual's emotional, conditioned responses. It can be easily standardized, reduces the likelihood that external information will be integrated into the determination of results, and is generally more accurate (Ben-Shakhar & Elaad, 2002). Unfortunately, this method is not appropriate for maintenance or monitoring tests where information specific to a known event is not available.

[5] The Peak-of-Tension test is a specific issue examination similar to the GNT, where questions are sequenced and asked until the examinee shows a peak response (e.g. "Was the amount of money stolen $1000…$2000…$3000?"; National Research Council, 2003). This method is not appropriate for maintenance or monitoring examinations.

polygrapher asks 10 to 15 crime-relevant and crime-irrelevant questions and compares the physiological reactions to both, under the premise that a reaction to the crime-relevant questions indicates guilt. However, this premise may not always be met. For example, an innocent person may show arousal due to the fear of not being believed, and the context of a crime-related question in an investigative context can also be a source of arousal. Consequently, this method is no longer considered reliable (Honts & Amato, 2002; National Research Council, 2003; British Psychological Society, 2004).

The Comparison Question Technique (CQT) consists of four relevant questions among a sequence of 10 to 15 questions, and is used to assess credibility regarding the subject's direct knowledge of specified events by comparing physiological responses to the relevant questions and comparison questions. The Reid variation (also known as the Modified General Questions Test or MGQT) includes probable-lie type questions.[6] Some methods substitute a "directed lie" question where the examinee is told to lie on a question (Cross & Saxe, 2001).

The relevant questions are drafted to be narrow, such as "Did you have sexual contact with your victim?" Raskin and Honts (2002) caution that a relevant question that is "ambiguous or requires the subject to draw conclusions or make interpretations" may cloud the ability of the polygrapher to make inferences about the veracity of the examinee's statements (p. 6).

The comparison questions are vague and broad, typically related to the issue under examination, and are intended to cover long time spans although they can be truncated by adding a time of reference for some types of examinations. An example would be "Have you masturbated to any fantasies that might concern your probation officer?" Honts and Perry (1992) describe the rationale of the CQT:

> The rationale of the CQT predicts differential physiological responses between relevant and control questions presented to guilty and innocent individuals…with the control question test innocent subjects are expected to respond with strong physiological responses to broad control questions. The control questions are presented in such a manner that denial is obtained. It is assumed that all subjects will be concerned about the veracity of their denial to the control questions. Innocent individuals are expected to produce larger physiological responses to control questions than to relevant questions since they are sure of the veracity of their response to the relevant questions, but they are assumed to be either lying or at least uncertain about the veracity of their response to the control questions. Equal physiological responses to both the relevant and control questions result in an inconclusive test. (p. 360).

An example of the CQT Reid variation (with probable-lie question):

1.	Irrelevant	Is today Tuesday?
2.	Irrelevant	Are you sitting down?
3.	Relevant	Did you rob the Quick Mart last night?
4.	Irrelevant	Do you sometimes watch TV?
5.	Relevant	Did you use a gun to rob the Quick Mart last night?
6.	Comparison	Have you ever stolen anything?
7.	Irrelevant	Is your name Bob?
8.	Relevant	Did you take money from the cash register at the Quick Mart last night?
9.	Relevant	Did you drive the getaway car at the Quick Mart robbery last night?
10.	Comparison	Have you ever cheated anyone?

Source: Raskin & Honts, 2002, p. 8

Although preferable over the RIT, similar issues have been identified with the CQT. First, heightened arousal by relevant questions may still be due to other factors (e.g. setting, fear of not being believed, outside issues). Second, there is little, if any, standardization of the control questions, which are dependent on the issue under investigation (Ben-Shakhar, 2002; British Psychological Society, 2004). Others argue that the theory underlying the CQT is implausible (Cross & Saxe, 2001; Ben-Shakhar, 2002). The CQT approach suffers from a lack of quantification of the physiological responses, potential contamination

[6] Probable lie questions are designed "to induce innocent people to answer in the negative, even though most are lying. Innocent examinees are expected to experience concerns about these answers that shows in their physiological responses" (National Research Council, p. 255).

with other information,[7] lacks a theoretical basis that establishes the causal link between lying and psychophysiological responses, and may be biased against the innocent subject who perceives the relevant questions as more threatening than the control questions (Ben-Shakhar, 2002).

Patrick and Iacono (1991) note that in field studies using the CQT, including their own, only chance level accuracy was achieved (55% correct) among innocent subjects, but higher levels of accuracy were found among the deception indicated subjects, 98% were correct. However, as shown in Table 1, a review of laboratory studies on the CQT indicates some level of validity in proper classification of guilty and innocent subjects (Raskin & Honts, 2002).

Some methods use "outside issue" questions in an attempt to determine whether outside factors are influencing responses. These questions, typically no more than two, assess the examinee's concern with issues outside the subject of the polygraph examination that may nevertheless affect responses to questions. The rationale is that since the subject has focused attention on the outside issue instead of the relevant or comparison questions, the response may not be appropriate and result in a false positive or inconclusive test.

One study concludes that outside issues can have an affect on outcomes by increasing either inconclusive or false positive results. In other words, examinees who are concerned with outside issues are more likely to falsely present a deception indicated result.[8] However, detecting the presence of outside issues is problematic. While the addition of outside issues questions does not appear to affect the validity of the CQT method, they do not seem to assist the polygrapher in detecting the presence of outside issues any better than chance. The authors suggest that outside issue questions may function as

Table 1. Correct Polygraph Classification Decisions in 9 CQT Laboratory Studies

	Guilty				Innocent			
Study	***n***	**% correct**	**% wrong**	**% inc.**	***n***	**% correct**	**% wrong**	**% inc.**
Driscoll *et al.* (1987)[b]	20	90	0	10	20	90	0	10
Ginton *et al.* (1982)	2	100	0	0	13	85	15	0
Honts *et al.*. (1994)[a]	20	70	20	10	20	75	10	15
Horowtiz *et al.* (1997) [b]	15	53	20	27	15	80	13	7
Kircher and Raskin (1988)	50	88	6	6	50	86	6	8
Podlesny and Raskin (1978)	20	70	15	15	2	90	5	5
Podlesny and Truslow (1993)	72	69	13	18	24	75	4	21
Raskin and Hare (1978)	24	88	0	12	24	88	8	4
Rover *et al.* (1979) [a]	24	88	0	12	24	88	8	4
Means	247	80	8	12	210	84	8	8
Percent decisions		90	10			92	8	

Inc. = inconclusive result.
[a] Countermeasure subjects excluded.
[b] Traditional control question subjects only.
Source: Raskin & Honts, 2002, p. 29

[7] The potential for contamination (bias) occurs when the same polygrapher conducts the pre-test, formulates the questions, administers the examination and tallies the results; and when the polygrapher incorporates non-psychophysiological information in his or her determination. At the pre-test, the polygrapher examines the behavior of the examinee which may result in "confirmation bias" whereby the knowledge gathered prior to the examination may induce certain expectations in the examiner (Ben-Shakhar, 2002, p. 111).

[8] The authors suggest that outside issues should be a particular concern to polygraph examiners, consumers of results, and researchers particularly in settings where the polygraph is used as a mass screening device such as airports (Honts, Amato & Gordon, 2004). The implications for use with sex offenders is unknown, but should be of particular concern with maintenance and monitoring examinations, which can be considered "screening" examinations.

comparison questions, such as "Is there something else you are afraid I will ask you a question about?" (Honts, Amato, & Gordon, 2004).

The Zone Comparison Technique (ZCT), created by Cleve Backster in the early 1960s, is divided into three zones: relevant questions (red), probable lie (green) and outside issue questions (black). Backster also introduced the first numerical scoring system and renamed the comparison questions "probable lie" to reflect the assumption that a heightened reaction indicates the examinee is probably lying to the comparison questions. The ZCT charts are only obtained twice, with no discussion between each administration (Raskin & Honts, 2002). Some researchers argue that the ZCT is the more accurate method for specific issue polygraph examinations (Gordon, Mohamed, Faro, Platek, Ahmad, & Williams, 2006). This approach also separates events that occurred prior to the event under investigation by adding specific time frames.

A sample sequence for the Zone Comparison Test:

1.	Irrelevant	Is today Tuesday?
2.	Sacrifice Relevant	Regarding whether you robbed the Quick Mart last night, do you intend to answer truthfully each question about that?
3.	Outside Issue	Do you believe me when I say that I won't ask you a question we have not already reviewed?
4.	Probable Lie	Before 1997, did you ever steal from a place where you worked?
5.	Relevant	Did you rob the Quick Mart at Fourth and Main last night?
6.	Probable Lie	Before age 27, did you ever cheat someone who loved and trusted you?
7.	Relevant	Did you use a gun to rob the Quick Mart at Fourth and Main last night?
8.	Outside Issue	Are you afraid I will ask you a surprise question even though I told you I would not?

Source: Raskin & Honts, 2002, p. 11.

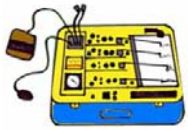
Two additional techniques that can be incorporated are the Simulation Test and the Silent Answer Test. The *SimTest* is done pre-test to demonstrate the effectiveness of the polygraph in detecting deception. Typically, the subject is asked to choose a number, to disclose the number to the examiner, and then deny the choice of that particular number while the examiner reads off a list. The subject is then informed of the "deception" indicated when they "lied" when the correct number was read. Thus, the polygrapher is allegedly aware of the individual physiological reactions to his or her deception (Raskin & Honts, 2002).

The Silent Answer Test occurs when the polygrapher goes through the questions with the examinee hooked up to the polygraph machine but instructs him or her to answer "silently" rather than aloud. This can be done prior to verbal examinations because the examinee typically does not perceive it as a threat since they are not lying by not answering out loud, and thus they typically do not attempt countermeasures; or it can be done later in the examination if the charts appear to be in conflict (National Research Council, 2003).

One final technique in use with sex offenders is the Utah Probable-Lie Test[9] that includes the SimTest, and is scored numerically based solely on the polygraph charts. This examination can be adapted for both single and multiple issue examinations. (see Raskin & Honts, 2002, pp 14-21).

Readers are cautioned that research involving one method of questioning can not be easily extrapolated to other types of questioning methods (OTA, 1983). Once the charts have been obtained, the polygrapher moves on to the next step, scoring the charts and determining the results.

Polygraph Scoring Methods



Polygraphs were originally scored based on the judgment of the examiner (global judgment), then progressed to numerical systems in the 1960s that could be hand scored. Current applications include more sophisticated hand scoring using weights as well as computerized algorithms.

Global methods result from an overall impression of the consistency and magnitude of an examinee's responses as well as informal evaluations of the

[9] See Blackstone, 2008, who argues that this test has an accuracy rate of 92% in deceptive cases, and 89% in truthful cases (overall 91%) and a 12% inconclusive rate.

case facts, subject's demeanor and statements during the test. Numerical methods include only the physiological responses, which are calculated based on an established set of rules that minimally specify scoring windows, exclusionary criteria, and what types of physiological recordings qualify as reactions. Multiple numerical methods exist (e.g. Utah and U.S. Department of Defense Polygraph Institute methods). Research conducted in the 1970s demonstrated the superior accuracy of numerical methods over global methods. The accuracy rate was 98.9% for the latter and 87.4% for the former. Most importantly, the rate of false positives was more than seven times higher for global methods, 26.4% compared to 3.6% with the standardized numerical methods (Kircher & Raskin, 2002).

Some polygraphers continue to use the more subjective global method. However, the American Polygraph Association By-Laws require that all conclusions and opinions be based on a quantitative or numerical scoring system for all evidentiary examinations (§ 3.10.1).

The Objective Scoring System (OSS)[10] was initially developed as a hand scoring mechanism in the late 1980s as an independent collaborative project and can be used with multiple types of examinations, including the post-conviction sex offender polygraph testing (PCSOT) maintenance and disclosure tests. It has since been computerized, but can still be hand scored.

More recently, computerized scoring methods have been developed to increase reliability of the polygraph (see Figure 3). John A. Podlesny and David C. Raskin spearheaded the development of actual measures in the late 1970s, and discriminant statistical functions emerged in the early 1980s that laid the foundation for current methods. The computer assisted polygraph emerged in the early 1990s, which also facilitated the use of standardized questioning (Kircher & Raskin, 2002). Two main systems are used: PolyScore® and the Computerized Polygraph System (CPS).

[10] For more information see: http://oss3.info/index.html (retrieved 11/19/2008). Nelson, R., Handler, M. & Krapohl, D. (undated).

Figure 3. Example of a computerized polygraph machine.

PolyScore® was developed at the Applied Physics Laboratory at Johns Hopkins University. Rather than provide a score, the output reflects the probability of deception. A version of the CPS was developed by Scientific Assessment Technologies[11] based on decades of research conducted at the University of Utah. It is similar to the Seven-Position Numerical Analysis Scale taught by the Department of Defense (National Research Council, 2003).[12] Other systems exist, but most are proprietary to their developers.

Variation in Examination Outcomes

Many extraneous factors can contribute to variation in outcomes. The polygraph examiner should conform to the standards of the American Polygraph Association (APA), but may differ in decisions regarding the pre-test, questioning methods and interview follow-up. The nature of the relationship between polygrapher, supervising officer and therapist will affect the choice to debrief the offender post-examination as well as the line of questioning.

In addition to the anxiety brought on by the examination itself, several other factors can influence an offender's response: the presence of

[11] Full name is the ASIT Poly Suite (Academy for Scientific Investigative Training's Horizontal Scoring and Algorithm for Chart Interpretation).

[12] For two comprehensive reviews of scoring systems and issues see Appendix F Computerized Scoring of Polygraph Data (National Research Council, 2003); or Kircher and Raskin (2002) Computer Methods for the Psychophysiological Detection of Deception.

mental (mood) disorders or impairment; use of substances or prescription medications; physiological problems; those suffering from bipolar disorder, major depression or paranoid disorders, medicated or not, may exhibit excessive reactions; anxiety disorders, multiple personalities, dissociative disorders and amnesia may contribute to inconclusive results. Furthermore, some medical conditions such as hypertension or heart/respiratory problems may require a physician's approval prior to the examination, and pregnant women should be excluded altogether (Blasingame, 1998). Others argue that the polygraph should never be used on persons with lower IQ, anxiety disorders, or active metal illness (Gannon, Beech, & Ward, 2008).

Use of Countermeasures

Countermeasures are "anything that a subject might do in an effort to defeat or distort a polygraph examination" (Honts & Amato, 2002, p. 251) which may be used to either inhibit responses to relevant items or stimulate excitement to the neutral questions (Ben-Shakhar & Dolev, 1996). [13] They can be divided into two types[14] and may occur simultaneously during the exam, or involve active planning (Honts & Amato, 2002):

- **General State (GS)**: intended to alter the physiological or psychological state of the examinee for the length of the test.

- **Specific Point (SP)**: intended to alter the physiological or psychological state of the examinee at specific periods during the examination, either to increase or decrease responses during critical examination periods.

Arousal patterns vary across questioning technique used, so successful use of countermeasures requires that the examinee be able to identify which questions are intended to provoke arousal. Research into spontaneous countermeasures indicates that many offenders consciously attempt to alter the results, but there is little effect on the outcomes (Honts & Amato, 2002).

General state countermeasures can include the use of drugs, presumably to inhibit the autonomic nervous system. A handful of studies have shown that the use of diazepam (anti-anxiety), meprobamate (tranquilizer), or propranolol (hypertension) did not affect test results (Iacono, Cerri, Patrick, & Flemming, 1992), nor does alcohol (Honts & Amato, 2002).

Specific point countermeasures include physiological manipulation such as biting the tongue (pain countermeasure), pressing ones' toes to the floor or contracting the sphincter (muscle countermeasure), or the use of mental imagery or engaging in complex mental tasks (mental countermeasures). Polygraph examiners may use a specially designed chair pad to detect the sphincter muscle countermeasure, and/or may ask examinees to remove their shoes prior to the examination. Mental countermeasures are the most difficult to detect, if not impossible.

A 1985 study (Honts, Hodes, & Raskin) concluded that when guilty parties are trained and practice various techniques, specific point countermeasures can reduce accurate classifications of deceptive examinations. The study included three comparison groups: innocent, guilty with no countermeasures, and guilty with countermeasures (the CQT method was used). Guilty participants who were trained and practiced the techniques produced 47% of the false negatives compared to none of the guilty participants who were not coached. Figures provided in Table 2 indicate stability in classifications across evaluations of the results by three different polygraphers (note: percent properly classified does not include inconclusive results). It appears that pain countermeasures were more successful in reducing the number properly classified as deceptive across examiners, but measures using muscles varied in producing inconclusive results.

[13] For an interesting case, see Raskin (1990) involving an offender who used biofeedback to return a no deception indicated result. This particular offender had been practicing biofeedback for 15 years prior to his involvement in the criminal justice system and subsequent polygraph examination.

[14] Ben-Shakhar & Dolev (1996) divide countermeasures into physical and mental countermeasures.

Table 2. The Use of Countermeasures: Categorical Decisions Based on Three Interpretations.

	n	% Properly Classified	% Inconclusive
Original examiner			
Innocent	12	50.0%	16.7%
Guilty: control	12	100.0%	25.0%
Guilty: pain	9	66.7%	0.0%
Guilty: muscle	10	100.0%	20.0%
Independent examiner			
Innocent	12	55.6%	25.0%
Guilty: control	12	100.0%	16.7%
Guilty: pain	9	71.4%	22.2%
Guilty: muscle	10	90.0%	0.0%
Blind Examiner			
Innocent	12	75.0%	33.3%
Guilty: control	12	87.5%	33.3%
Guilty: pain	9	75.0%	55.6%
Guilty: muscle	10	100.0%	30.0%
Source: Honts, Hodes, & Raskin, 1985, p. 181.			

The 1985 study was replicated a few years later and included mental countermeasures. In this case, the subjects were instructed to count backwards by increments of seven from a number larger than 200 when control questions were asked. As shown in Table 3, all countermeasures were met with some degree of success in reducing the percent properly classified as deceptive. In this preliminary study, it appears that mental countermeasures are the most effective in altering results (Honts, Raskin, & Kircher, 1994). Since these studies were completed in laboratories, it can be argued that the results may not generalize to field studies or real life polygraph situations (Honts & Perry, 1992).

Table 3. The Use of Countermeasures: Categorical Decisions by three Countermeasures

	n	% Reduction Properly Classified	% Inconclusive
Control Groups			
Innocent	17	88.2%	17.6%
Guilty	18	77.8%	11.1%
Guilty: Countermeasures			
Pain & Muscle	19	42.1%	5.3%
Muscle	18	44.4%	11.1%
Pain	17	47.1%	17.6%
Mental	17	52.9%	17.6%
Source: Honts, Raskin, & Kircher, 1994, p. 255.			

The Guilty Knowledge Test (GNT) did not fare much better than the CQT in similar research (Ben-Shakhar & Dolev, 1996). Given that psychophysiological responses measured by the polygraph can be consciously controlled and altered, countermeasures are a threat to the validity of the polygraph (National Research Council, 2003; Ben-Shakhar, 2002). Examiners should, at least to a degree, be able to identify the use of countermeasures.

Polygraph: Reliability and Validity[15]

The theoretical basis for polygraph examinations and questioning methods is not fully developed, and most research has been characterized as atheoretical (National Research Council, 2003; Ben-Shakhar & Furedy, 1990). Specifically, the relationship between the physiological data captured by the polygraph and the psychological state of deception are not fully articulated (a/k/a psychophysiology; c.f. Cacioppo & Tassinary, 1990).

Reliability refers to the ability of a test to measure a phenomenon consistently across subjects, settings and experimental conditions. There are many factors that can affect the reliability of the polygraph examination: the polygrapher and/or methods used (e.g. pre-test questioning, the nature and type of questions asked and their sequence, post-test debriefing, etc.), the setting, the psychological and physiological state of the examinee, potential consequences for the results of the examination, who aside from the polygrapher is present at the examination, and attempts to use countermeasures. Furthermore, there is the possibility that an examinee may show a response to a question because of some other unrelated stimulus (outside issue) with the resulting test showing a false positive. For example, if one is being questioned about a murder using a certain type of firearm, even though the person is innocent, he or she may react due to a prior experience with a firearm.

[15] For an extensive review of the science and theory behind the polygraph, as well as reliability and validity, see the National Research Council. (2003). *The Polygraph and Lie Detection*. Washington D.C.: National Academies Press.

There are several methodological limitations in polygraph research worth noting. The first issue concerns what is referred to as *ground truth*, which is some other method for determining whether examinees are telling the truth (e.g. evidence, confession, conviction, or a panel of experts). The use of confessions as ground truth inflates the accuracy rate because only deception indicated cases are confronted; and those who pass have little incentive to confess if they are, in fact, guilty. Thus, cases where there is no confession are likely to be excluded from the sample resulting in inflation of accuracy rates.

The second issue is laboratory versus field settings. Establishing ground truth is far more unlikely in field settings than in a laboratory. Critics of lab studies argue that the participants usually have not committed a crime, or were directed to commit a mock crime, and thus do not face the same threat of sanction that an offender may (e.g. arrest, conviction, incarceration) in a field test that mimics or uses actual real-life polygraph situations. Field studies tend to produce larger numbers of false positives (Iacono & Lykken, 1997 as cited in Cross & Saxe, 2001, p. 199).

Other general methodological limitations include a lack of blind scoring of polygraph charts as to the true guilt or innocence of subjects; and the use of a "global" chart evaluation where other non-chart factors are included (referred to as "extrapolygraph" factors, such as demeanor) over a more objective numerical scoring (Patrick & Iacono, 1991).

Proponents of laboratory research argue that the ground truth can be established with absolute certainty, instrumentation can be more easily controlled, and patterns exhibited by both truthful and deceptive subjects are similar to those found in field experiments[16] (Kircher & Raskin, 2002). Research in lab settings can produce results up to 20% lower than field studies, but those that mimic field conditions tend to have the highest diagnostic accuracy (Kircher, Horowitz, & Raskin, 1988).

A related issue is that most research has been done on specific issue polygraph examinations (e.g. deception related to an identified criminal event). Given that the sexual history and maintenance examinations are vague and cover longer periods of time, it is not clear whether the accuracy rates derived from studies of specific issue examinations applies to examinations with more breadth. Exams that are less specific may also be less accurate (Kokish, Levenson, & Blasingame, 2005).

In regard to the CQT, Ben-Shakhar (2002) offers four criteria that any research should meet before the validity of the CQT can be answered with any authority:

1. The existence of a clear, conclusive and irrefutable criterion for the guilt or innocence of research participants [ground truth].
2. A representative sampling of all examinees and of the situation in which CQTs are employed.
3. Independence between the criterion and the polygrapher's judgment.
4. Testing conditions in the experiment which resemble those of a true examination. In particular, it is important that the examinees be anxious about the consequences of the test and take it seriously, and that the lie or transgressions be real (p. 114).

Supporters and critics of polygraph examinations will frequently cite different statistics regarding the accuracy of the polygraph. The American Polygraph Association (APA) notes that the critics tend to include inconclusive results as errors, while supporters consider inconclusive results to be neutral. The APA web site elaborates on this distinction: [17]

> To illustrate how the inclusion of inconclusive test results can distort accuracy figures, consider the following example: If 10 polygraph examinations are administered and the examiner is correct in 7

[16] Field studies seeking to simulate real life situations are extremely difficult to design and execute with the polygraph. For a review, see Chapter 4: Evidence from Polygraph Research: Qualitative Assessment from *The Polygraph and Lie Detection* (National Research Council, 2003).

[17] http://www.polygraph.org/faq.cfm

decisions, wrong in 1 and has 2 inconclusive test results, we calculate the accuracy rate as 87.5% (8 definitive results, 7 of which were correct). Critics of the polygraph technique would calculate the accuracy rate in this sample as 70% (10 examinations with 7 correct decisions). Since those who use polygraph testing do not consider inconclusive results as negative, and do not hold them against the examinee, to consider them as errors is clearly misleading and certainly skews the figures.

The American Polygraph Association's web site[18] offers the following regarding laboratory and field examinations:

- 12 studies of the validity of 2,174 field examinations had an average accuracy of 98%.
- 11 studies involving the reliability of independent analyses of 1,609 sets of charts from field examinations confirmed by independent evidence had an average accuracy of 92%.
- 41 studies involving the accuracy of 1,787 laboratory simulations of polygraph examinations had an average accuracy of 80%.
- 16 studies involving the reliability of independent analyses of 810 sets of charts from laboratory simulations had an average accuracy rate of 81%.

The Congressional Office of Technology Assessment (OTA) conducted an early examination of polygraph and published a technical report in 1983 and found "only limited scientific evidence for establishing the validity of polygraph testing. Even where the evidence seems to indicate that polygraph testing detects deceptive subjects better then chance (when using the control question technique in specific incident criminal investigations), significant error rates are possible, and examiner and examinee difference and the use of countermeasures may further affect validity."

The House Government Operations Committee's OTA Study concluded there are two major reasons why an overall measure of validity is not possible. "First, the polygraph test is, in reality, a very complex process that is much more than the instrument. Although the instrument is essentially the same for all applications, the types of individuals tested, training of the examiner, purpose of the test, and types of questions asked, among other factors, can differ substantially. Second, the research on polygraph validity varies widely in terms of not only results, but also in the quality of research design and methodology. Thus, conclusions about scientific validity can be made only in the context of specific applications and even then must be tempered by the limitations of available research."[19]

Voice Stress Analysis

The premise of Voice Stress Analysis (VSA) is that microtremors at the 8-12 Hz range, not detectable by the human ear, can indicate when a person is under stress. However, multiple research studies that have attempted to determine whether the stress detected in the voice equates to deception have failed to support claims that VSA can function as a detector of deception (Damphouse, Pointon, Upchurch, & Moore, 2007; Gamer, Rill, Vossel, & Gödert, 2005; Virginia Department of Professional and Occupational Regulation, 2003; Brown, Senter, & Ryan, 2002; Haddad, Walter, Ratley, & Smith, 2002; Horvath, 2002; and numerous reports from the Department of Defense Polygraph Institute Research Division[20]). Therefore, it is not advisable

[18] http://www.polygraph.org/validity-research

[19] Congressional Office of Technology Assessment (OTA) conducted an early examination of the polygraph and published a technical report in 1983.

[20] No. DoDPI98-R-0004 Meyerhoff, Saviolakis, Goenig &Yourdick. (2001). *Physiological and biochemical measures of stress compared to voice stress analysis using the computer voice stress analyzer (CVSA)*; No. DoDPI96-R-0005. Janniro, M. J. (1996). *Effectiveness of detection of deception examinations using the computer voice stress analyzer*; No. DoDPI95-R-0004, Cestaro, V. L. (1996). *A comparison of accuracy rates between detection of deception examinations using the polygraph and the computer voice stress analyzer in a mock crime scene scenario*; No. DoDPI95-R-0002, Cestaro, V. L. (1995). *A comparison between decision accuracy rates obtained using the polygraph instrument and Computer Voice Stress Analyzer (CVSA) in the absence of jeopardy*; No. DoDPI94-R-0001, Cestaro, V. L. (1994). *An analysis of voice responses for the detection of deception*. The Polygraph Institute Research Division has been renamed the Defense Academy for Credibility Assessment, these reports can be found at: https://www.daca.mil/div_RES.asp (11/10/2008).

to substitute voice stress analysis for the polygraph in the context of sex offender management.[21]

The next section will discuss how polygraph examinations can be used with sexual offenders to enhance supervision and public safety in the context of the *Containment Approach*, what researchers and practitioners have discovered about offending patterns, and the role of the polygraph in supervision.

Use of the Polygraph with Sex Offenders

> The polygraph can "act as an important 'truth facilitator' for sex offenders in treatment, and it is this function rather than its more commonly thought of role as a 'lie detector' that may be most relevant for its contribution to the management of risk in sex offenders. It brought dynamic acute risk factors…to the attention of supervising probation officers so that the preventive steps could be taken, and it also made clear to those providing treatment where further work needed to be done. It appeared to assist those motivated not to offend to stick to their relapse prevention plans." (Grubin, p. 159, 2003).

It is important to distinguish the uses of the polygraph in a law enforcement setting from the goal of better managing sexual offenders. The polygraph assists supervision through the clarification of offending patterns and preferences and detection of non-compliant behavior, both of which contribute to effective treatment and community supervision.

Originally published by the American Probation and Parole Association (APPA) in 1996, the *Containment Approach* grew out of the work of the Colorado Division of Criminal Justice (English, Pullen and Jones, 1996). The *Containment Approach* has five parts:

1. A philosophy that values public safety, victim protection, and reparation for victims as the paramount objectives of sex offender management;
2. Implementation strategies that rely on agency coordination, multidisciplinary partnerships, and job specialization;
3. A containment approach that seeks to hold sex offenders accountable through the combined use of both the offenders' internal controls and external criminal justice control measures, and *the use of the polygraph to monitor internal controls and compliance with external controls*;
4. Development and implementation of informed public policies to create and support consistent practice; and
5. Quality control mechanisms, including program monitoring and evaluation, that ensure prescribed policies and practices are delivered as planned. (p 2.5 to 2.6, *emphasis added*).

The Containment Approach involves three entities: the supervising officer, the treatment provider, and the offender. Family, friends, and employers may also participate when appropriate. In this context, the polygraph is used to identify discrepancies in self-reported and polygraph information (Pullen, Olsen, Brown, & Amich, 1996).

> ***Good containment reveals bad behaviors, and that's the path toward public safety.***
> - Kim English Research Director, Colorado Department of Public Safety

Various types of polygraph examinations can be given to sexual offenders in the context of treatment. The ultimate goal is to obtain information that can be used to more effectively supervise and treat the offender and protect the public. One component of treatment involves relapse prevention, which has been integrated into most current treatment protocols, and is relevant to this review. Briefly, relapse prevention is a cognitive-behavioral approach based on self-programming, and includes development of methods of self-control in which clients learn self-management skills (Carich, Dobkowski, & Delehanty, 2008, p. 2). The purposes of relapse prevention are:

1. providing an effective set of coping skills and strategies,

[21] The Association for the Treatment of Sexual Abusers and the Center for Sex Offender Management are silent on the issue.

2. providing both internal and external sources of management,
3. providing increased awareness of standard structures and detailed pathways of offending,
4. providing a set of methods to help regulate his cycle or deviant pattern or offending pathways,
5. providing understandable offense process interventions, and
6. providing a method of internal and external monitoring of the dynamic factors of the client (Carich, Dobkowski, & Delehanty, 2008, p. 4).

In a nutshell, an offender has multiple motivating forces drawing him or her to an outlet behavior, in this case, sexual offending. Both internal and external controls serve as barriers to inhibit an offender from acting (as illustrated in Figure 4). The goal is to develop and rehearse external factors until they become internal factors and thus reduce the offender's propensity to engage in the outlet behavior. In this context, the polygraph examinations serve as an additional method to identify and assess the attractiveness of the outlet behavior and the frequency of past offending, all of which are relevant to risk assessment and management. The polygraph can also help disclosure of high risk behavior patterns and amenability to treatment, both of which are important considerations for placement into community treatment settings, as well as monitoring an offender's adherence to external controls (rule compliance) while under supervision (O'Connell, 2000).

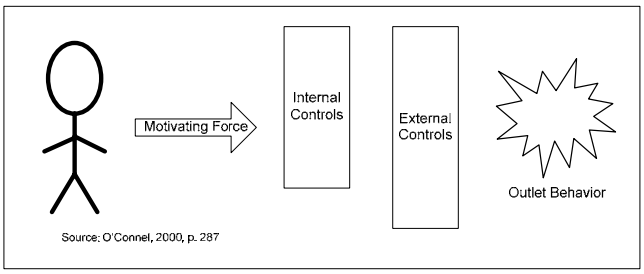


Figure 4. Model of child molestation.

Post-Conviction Sex Offender Examinations: Types and Structure

One way to view the use of the polygraph with sex offenders is to split the examinations into those that are related to risk, or "polygraph-assisted risk assessment" and those that assist in monitoring the behavior of the offender, or "compliance-related examinations." Put another way, the polygraph-assisted risk assessment can be considered an assessment of static risk factors not necessarily captured by a criminal history report or a pre-sentence investigation. The compliance-related polygraph can be considered an assessment of both stable and acute dynamic risk factors related to treatment and supervision.

A polygraph administered to a sex offender under court or state supervision is commonly referred to as a Post Conviction Sex Offender Test, or PCSOT. The goals of administering a polygraph by a supervising or treating entity differ. The former seeks to verify compliance with the conditions of supervision, while the latter seeks to gain insight into offending history and compliance behavior to develop a treatment plan. The examinations take three basic forms: sexual history disclosure, instant offense disclosure, maintenance/ monitoring examination. Each of the examinations have different goals and reflect clear and distinct time spans, as illustrated in Figure 5.

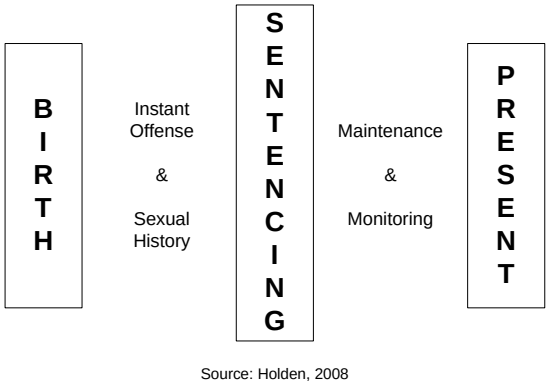


Figure 5. Time of reference for polygraph examination types.

Eric Holden,[22] Chairman of the PCSOT Committee of the American Polygraph Association 2007-2008 recommends four principles that define the PCSOT structure:

[22] The concepts and figures presented in this section are from a presentation by Eric Holden at the 13th annual conference held by the New York Association for the Treatment of Sexual Abusers and the New York Alliance of Sex Offender Service Providers, Saratoga Springs, May, 2008.

1. Post-conviction examinations should be structured to address two distinctively different periods of the offender's life. These two periods define the times of reference (TOR) for the test:
    a. Events in the offender's life before being placed on supervision, *or*
    b. Events in the offender's life after being placed on supervision
2. Post-conviction tests are designed to address one of two distinctly different targets:
    a. Compliance with defined conditions of treatment, *or*
    b. Compliance with defined conditions of probation or parole
3. Post-conviction examinations that address events before probation or parole begins are considered for treatment purposes and include:
    a. The **disclosure** test over the instant offense, *or*
    b. The **disclosure** test over the sexual history
4. Tests that address events after probation or parole begins are considered supervisory and may address only probation or treatment violations. Those tests include:
    a. The **monitoring** test to investigate sexual reoffense and other sex crimes, also known as a public safety test
    b. The **maintenance** test to investigate other probation/parole violations
    c. The **maintenance** test to investigate treatment program. (Holden, 2008).

Table 4. Polygraph Examination Frame of Reference

Test Type	Frame of Reference
Disclosure – Instant Offense	Offense, Investigative Reports, etc.
Disclosure – Sexual History	Completed, Written Sexual History Questionnaire
Monitoring	Sex Law Violations, Sex Crimes, etc.
Maintenance - Probation/Parole	Written Probation/ Parole Conditions
Maintenance – Treatment	Written Treatment Contracts, Treatment Questions
Source: Holden, 2008	

In a critical review of the theory, reliability and validity of the polygraph, scientists with the National Research Council make an important point highly relevant to sex offenders. Research has shown that persons bearing a stigma (part of a socially devalued group) show elevated cardio-vascular activity when interacting with members of non-stigmatized groups. This may affect polygraph accuracy with sexual offenders:

> [I]f either the examiner or examinee bears a stigma, the examinee may exhibit heightened cardiovascular responses during the polygraph testing situation, particularly during difficult aspects of that situation such as answering relevant questions, independently of whether he or she is answering truthfully. Such responses would be likely to increase the rate of false positive results among the examinees who are members of stigmatized groups, at least on relevant-irrelevant and comparison question tests (National Research Council, 2003, p. 89).

Sexual history and instant offense questions cannot be mixed even though both are historical in nature. Typically, the sexual history examination consists of the offender filling out a lengthy and detailed questionnaire regarding his or her sexual history. The polygrapher simply asks the offender if he or she filled out the questionnaire truthfully. If an offender fails, there is a period of time during which treatment continues, and the process is repeated.

The Association for the Treatment of Sexual Abusers *Practice and Standards* Guidelines (2005) notes that the "primary purpose for collecting sexual history information is increased ability to design clinical interventions and other management strategies…[that] derives from its ability to elicit historical information, allowing psychosexual behavioral patterns to be more fully revealed, better understood, and therefore more effectively managed and challenged." (p. 45).

Maintenance and monitoring examinations pose a theoretical issue. Most research has been conducted on specific issue examinations where the issue under consideration is known to the polygrapher (i.e. a crime was committed), and very specific

questions can easily be formulated. With maintenance and monitoring examinations, the goal is to determine whether some unknown violation occurred. This means not only are the questions vague, but the examination becomes a "screening" type rather than a specific issue exam, and little research has been conducted on the effectiveness of this type of examination.[23]

Meijer and colleagues (2008) delineate several issues with the CQT in relation to maintenance tests. First, since the offender is questioned regarding events of dubious origin (e.g. it is not clear whether an offense happened) the questions need to be phrased in a very broad manner as opposed to specific incident examinations. The result is that the relevant and comparison questions become similar, increasing ambiguity in outcomes and making diagnostic decisions more difficult (i.e. deception indicated). The vagueness required of maintenance questions may interact with cognitive distortions to reduce accuracy. For example, when an examiner is unsure whether an offense has been committed, he or she must phrase questions broadly: "Since X date, have you had any sexual contact with a minor?" The phrase "sexual contact" can mean a number of things to an offender. He may not label the contact as sexual, and therefore not react to the question; or events from other time frames may bleed into the current one. Finally, since repetitive presentation of the same stimulus can dull responses, the authors suggest that repeated polygraph examinations may be an opportunity for offenders to hone their skills at beating the exam, as well as reduce the ability of innocent offenders to load on the emotionally provocative questions and thus increase false positives (Meijer, Verschuere, Merckelback, & Crombez, 2008).

A suggested method with maintenance/monitoring examinations involves a pre-polygraph interview where the offender will disclose his or her compliance since the last polygraph examination, which will then be integrated with information from the supervising officer and treatment provider, then the questions are formulated. For example:

1. Regarding this history, did you lie to me about not violating your rules of either probation or treatment?
2. Regarding this history, did you lie to me about your contact with minors?
3. Other than what you told me today, did you lie about your honesty with your therapist and group about your sexual history?
4. Regarding this history, did you lie to me about your use of either alcohol or illegal drugs? (O'Connell, 2000, p. 296.)

Given its increase in accurate classification and resistance to contamination due to examiner-examinee interaction and other extrapolygraph factors over the CQT (Ben-Shakhar & Furedy, 1990), the GNT method of questioning should be evaluated for use in maintenance and monitoring examinations. Research has indicated the non-compliant and high risk behaviors most commonly committed by sex offenders under community supervision. Perhaps a method could be developed by which a list of common behaviors is presented to the offender. If his reaction to one or more is differential, it would likely indicate non-compliance and supervision can be increased. Another option may be to adapt the maintenance/monitoring examination to be more like the sexual history examination. In this model, the offender would fill

[23] "If a comparison question testing format can meet the challenge of calibrating questions to elicit the desired level of response in a specific-incident test, it does not follow that the same format will meet the challenge in a screening application because the relevant questions do not refer to a specific event. It is reasonable to hypothesize that autonomic reactions are more intense, at least for guilty individuals, when a target event is described concretely than when it is merely implied by mention of a generic category of events. Nothing in current knowledge of psychophysiology gives confidence that a test format will work at the same level of accuracy in a screening setting that requires generic questioning as it does in a specific-incident application…an examiner's rapport with the examinee, the desired understanding of the polygraph examination and questions, and the clinical skill in determining the person's veracity (i.e., detection of deception from demeanor) are all important in distinguishing among individuals who have psychological responses not indicative of deception (e.g., anxiety or anger regarding relevant questions, insufficient emotionality about the comparison questions), those who have physiological responses indicative of relatively innocuous transgressions, and those who have physiological responses indicative of significant transgressions. These distinctions are made on the basis of clinical judgment…" National Research Council, 2003, p. 80-81.

out a questionnaire regarding his compliance over a set period of time (e.g. six months) and be asked if he filled out the form completely.

The recommended frequency of maintenance examinations is every six months; when offenders are in compliance, decreasing the frequency can be used as a reward. (Stalans, 2004, Pullen, Olsen, Brown, & Amich, 1996; O'Connell, 2000):

> Polygraph testing risks losing potency and validity when conducted too frequently. Six-month intervals are generally recommended. Some standards allow for 3-month intervals between examinations. I recommend having the first administration of periodic rule-compliance testing no more than six months into treatment. If there are concerns about the client's willingness or ability to be honest about rule adherence, then a monitoring exam every 3 months into treatment is required. It is best to avoid a sex offender beginning treatment, especially if he is living in a community setting, having a lot of early practice at breaking rules, or failing to report important information. Having the client know a polygraph test is coming in the foreseeable future may lessen the temptation to get away with something. But if the client is trying to avoid reporting important information or operating outside the containment vessel of established safety rules, we need to know about that sooner rather than later. (O'Connell, 2000, p. 300).

Very little research exists on the potential benefits and drawbacks of having the supervising officer and/or treatment provider present when questioning an offender over a failed polygraph examination, or at the examination itself. Also, program managers should consider who will be present at the de-briefing process when integrating the polygraph into supervision and treatment.

Data from a very preliminary and small study (Elliot & McKonkie, 2002) indicate that offenders may tend to disclose information differentially after a failed polygraph examination. Readers are cautioned that this study included a very small number of offenders: 113 examinations on 37 offenders in a two year treatment program between January 1994 and December 1997 were compared with 260 examinations on 30 offenders in a four year treatment program from January 1999 and March 2002. The first group was administered a polygraph examination without a treatment team present (traditional polygraph), while the second group received an examination with a treatment team present (collaborative polygraph).

Table 5. Percent of Polygraphs with Additional Disclosures at the Post-Test Phase

Disclosure category	Collaborative Polygraph	Traditional Polygraph
Unreported fantasies**	21.9%	8.8%
Additional victims†**	7.3%	0.9%
Compliance violations***	1.9%	9.7%
Masturbation*	7.3%	15.0%

†Sexual history polygraph examination. * $p < .05$; ** $p < .01$; *** $p < .001$; Source: Elliot & McKonkie (2002).

The data presented in Table 5 suggest that admissions increase with the collaborative approach in the areas of unreported fantasies and obtaining additional retrospective victimization information. However, the traditional approach seemed more effective in obtaining information on compliance and masturbation issues. The authors suggest that may be due to differences in the treatment program itself, or that under the traditional approach offenders may feel more comfortable disclosing less sensitive information to the polygrapher, whereas offenders may feel more comfortable disclosing sensitive information such as fantasies and additional victims in a treatment setting. Disclosure may have been affected by differential consequences in each approach.

Program managers should consider both the consequences for deception indicated as well as rewards for passing the examination, which will vary by the nature and structure of the program. Some potential consequences include writing about the behavior in a journal and/or presenting it to a treatment group, presentation of examination results to a parole board or judge of jurisdiction in the case of probation, increased office visits or surprise home visits, or increased restrictions via electronic monitoring, imposition of a curfew, or day reporting, among others (Pullen, Olsen, Brown, & Amich, 1996). Rewards can include positive progress reports, a reduction in reporting frequency, or easing of electronic monitoring (Alhmeyer, Heil, McKee, & English, 2000). Revocations should be

based on treatment and supervision compliance, rather than a single failed polygraph examination.

Research on the Polygraph with Sex Offenders[24]

Research: Sexual History Information

The polygraph has been used in the context of treatment with sex offenders since the 1970's (Kokish, Levenson, & Blasingame, 2005). In the 1980's, Oregon became the first state to systematically use the polygraph with sex offenders as a treatment and supervision tool. Pioneering clinician Jan Hindman's research revealed what is now known as the *Magical X*, when polygraphed two critical numbers reversed in a dramatic manner. The number of victims increased and the number who reported being sexually victimized as children dropped (Hindman & Peters, 2001).

Number of Victims: Consistent with conventional wisdom on unreported sexual crimes, sex offenders have far more victims than are ever reported by the police or disclosed by the offender. The average number of victims reported by offenders was 2.9, which rose to 11.6 post polygraph (Hindman and Peters, 2001).[25] Subsequent research by Heil, Ahlmeyer & Simons (2003) found similar results with a group of inmates who were voluntarily participating in treatment prior to release: the mean number of victims rose from two per offender at the pre-sentence report to 18 after a sexual history polygraph; the median rose from one to nine, and the maximum rose from 32 to 215 (Heil, Alhlmeyer, & Simons, 2003). Gannon, Beech & Ward (2008) argue that the median should be reported rather than the mean, which is sensitive to outliers (e.g. a sample may include a small number of offenders with a large number of victims).

Victim Preferences and Crossover Offending: Victim preferences are good predictors of recidivism. Offenders who victimize children, strangers, unrelated or male victims have higher recidivism rates (Hanson & Bussière, 1998; Hanson & Thornton, 2000).

When offenders self-report victim preferences on gender, it appears that females are the preferred victim type: 83% of offenders report female victims. Post polygraph, that number falls to 53% indicating a 30% increase in the number of offenders with male victims (Hindman and Peters, 2001).[26]

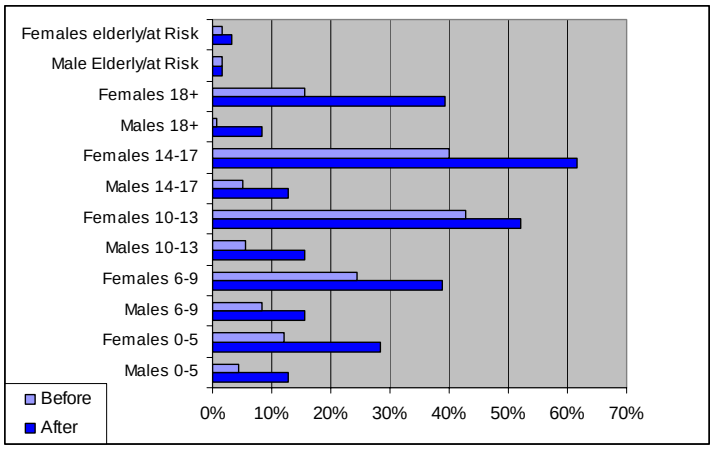


Figure 6. Pre and Post Polygraph Victim Gender and Age Preferences. Source: English, Jones, Patrick & Passini-Hill, 2000

A more comprehensive study confirmed what Hindman and Peters (2001) found. As seen in Figure 6 above, for all age groups and across genders, there was an increase in the proportion of offenders reporting various categories. The greatest increases were seen with female victims: an increase of 23.8% for women age 18 and over, followed by 21.7% for females age 14-17, females age 0-5 up 16.1%, and females age 6-9 increased 14.5% (English, et al., 2000).

[24] For an excellent overview of methodological issues related to research on use of the polygraph with sex offenders see Gannon, Beech & Ward, 2008, Section 3: Empirical evidence on polygraph-assisted risk assessment and Section 4: Future research and conclusions.

[25] This study included three samples: 1978-1983 (*n*=98 and *n*=129), 1988-1994 (*n*=76 and *n*=152) and 1994-1999 (*N*=173). The first two samples compared one group of self-reported behavior with a second group who were polygraphed and given immunity, the third sample consists of pre and post-polygraph data on the same subjects. Offenders in the third sample were required to provide sexual history disclosure and pass the disclosure polygraph examination to successfully complete treatment. Data are reported above for the most recent sample. The number of victims reported for the two earlier samples were: 1.5 and 9.0, and 2.5 and 13.6, respectively.

[26] Data are from the 1998-1994 sample and compare a self-report group to a polygraphed group.

As illustrated by Table 6 below, an examination of polygraph data on 180[27] offenders from three states revealed differences in victim gender and age post polygraph (English, et. al. 2000). This particular piece of information is critical to risk assessment because victimizing males, especially children, is predictive of recidivism (Hanson & Bussière, 1998).

Table 6. Victimization Preferences Pre and Post-Polygraph Examination

Victimization Profile	Pre	Post
Had male victims	20%	36%
Had female victims	90%	94%
Had both male and female victims	10%	29%
Had juvenile victims	91%	95%
Had adult victims	19%	44%
Had both adult and juvenile victims	10%	33%

Source: English, Jones, Pasini-Hill, Patrick, & Cooley-Towell, (2000).

A study of a group of inmates convicted of a sexual offense that voluntarily participated in treatment addresses crossover in the relationship to the victim (*n* = 233; Heil, Ahlmeyer, & Simons, 2003). As Table 7 shows, the proportion of offenders reporting certain victim preferences changed post-polygraph. The largest changes occurred in the "both" categories as offenders were shifted from a pure category (e.g. stranger only) to a crossover category. For example, the greatest difference was in the category of acquaintance, with a 63.2% increase in the "both" category, and a corresponding a reduction of 48.4% of offenders reporting they had victimized only non-acquaintances (from 63.2% to 14.8%). This was followed closely by a 60.2% increase in offenders being categorized as victimizing both strangers and non-strangers.

Table 7. Percent of Sexual Offenders Admitting Crossover Offending Post-Sexual History Polygraph in Treatment

	Pre-Sentence Investigation Report	Treatment w/Polygraph
Stranger	20.6%	2.2%
Non-stranger	72.2%	40.4%
Both	7.2%	67.4%
Acquaintance	20.2%	6.7%
Non-acquaintance	63.2%	14.8%
Both	16.6%	79.8%
Position of Trust	8.1%	1.8%
Non-position of Trust	83.9%	74.0%
Both	8.1%	24.2%
Relative	30.0%	6.7%
Non-relative	57.8%	23.8%
Both	12.1%	69.5%
Source: Heil, Ahlmeyer, & Simons, 2003, p. 229.		

A subset of child molesters in the same study indicates high proportions of gender and relationship crossover, as shown in Table 8.

Table 8. Percent of Child Molesters Admitting Crossover Offending Post-Sexual History Polygraph in Treatment

	Pre-Sentence Investigation Report	Treatment w/Polygraph
Male Child	19.1%	7.1%
Female Child	67.4%	52.5%
Both	13.5%	40.4%
Relative	44.0%	15.6%
Non-Relative	40.4%	19.1%
Both	15.6%	65.2%
Source: Heil, Ahlmeyer, & Simons, 2003, p. 230.		

More recent research on crossover offending examined age and gender preferences in child molesters referred for civil confinement in Florida (*n* = 163) and concluded that if an offender victimized a child under the age of six, the odds were 3.4 times greater that he had victims of both genders; and having a diagnosis for major mental illness increased the odds 3.6 percent. Furthermore, if an offender victimized children of both genders, the odds of having victimized a child under the age of six increased by 3.5 percent, while a diagnosis of

[27] In this sample, 140 offenders had actually undergone at least one polygraph examination in the context of treatment, and 30 were "under threat" knowing that they would receive a polygraph examination at some point. (p. 416).

pedophilia increased the odds of gender crossover by 11.7 percent (Levenson, Becker, & Morin, 2008).

Traditionally, incest offenders were thought to be unlikely to offend outside of the family. In a sample of 104 incest offenders, before a polygraph examination was administered, 32.1% were known to have offended against a victim from a position of trust, 4.8% were known to have offended against a stranger or acquaintance. Post-polygraph those figures rose to 56.7% and 34.6%, respectively (English, et al., 2000). Knowledge of extrafamilial sexual offenses committed by intrafamilial offenders is an important aspect of risk assessment because intrafamilial-only offenders have lower recidivism rates than extrafamilial offenders (Langevin, et. al., 2004). Thus, knowing that an offender is not a "pure" intrafamilial offender increases his risk to reoffend.

Prior Sexual Abuse: Sex offenders may claim to have been sexually abused as children, which was readily accepted by therapists and has helped society *empathetically* understand why they offend. However, prior sexual victimization is not a predictor of sexual reoffense among convicted sexual offenders (Hanson & Bussière, 1998). Sex offenders are less than honest about their victimization. In fact, one study compared self-reported victimization to post-polygraph reports and found that the proportion who reported to be sexually victimized as children dropped from 61% to 30%, which is still a substantial figure when prevalence rates have been estimated from between 3% and 29% for men. Furthermore, the number of offenders who reported sexually abusing *others* as a child increased from 27% to a staggering 76%[28] (Hindman & Peters, 2001).

Diversity of Offending Behaviors: Offenders who exhibit diversity in sexual offending (deviant sexual preferences) are at a higher risk of recidivism (Hanson & Bussière, 1998; Hanson & Morton-Bourgon, 2004). As shown in Table 9, post-polygraph offenders admitted to more hands-off offenses and high risk behaviors.

[28] Data are from the 1994-1999 sample and are not available from the other samples.

Table 9. Offense-type Admissions Before and After a Polygraph Examination

Offense type[29]	Pre	Post
Committed hands-on offense	93%	98%
Committed more than one type of hands-on offense	64%	82%
Committed hands-off offense	22%	67%
Committed more than one type of hands-off offense	3%	35%
Have high-risk behaviors	58%	93%
Commit more than one type of high risk behavior	27%	80%
Source: English, et al., 2000.		

The number of offenses can increase substantially as well. In a group of inmates voluntarily participating in treatment, the mean number of offenses rose from 12 to 137 after a sexual history polygraph (median two increased to 24; and the maximum from 364 to 6,075; Heil, Ahlmeyer, & Simons, 2003).

As noted by Gannon, Beech, & Ward (2008) much of the research on polygraph linked disclosure has been confounded by the subjects being in treatment and/or being provided immunity at the time of the polygraph examination. Thus, the role of the polygraph in facilitating disclosure cannot be considered "pure" until those effects can be disentangled. Furthermore, the mandatory nature of some programs may affect disclosures as some offenders disclose what they think the treatment provider wants to hear in order to successfully complete the program.

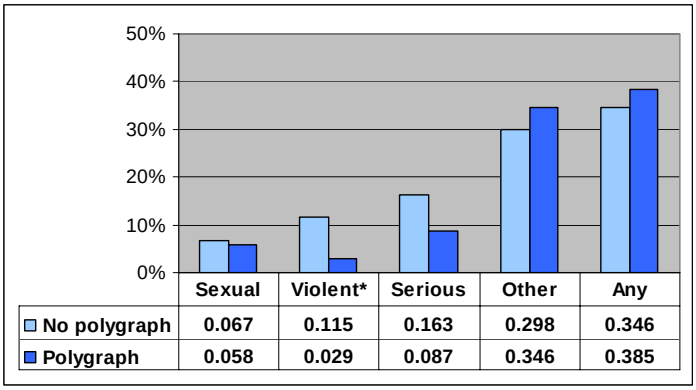
Research: The Polygraph and Recidivism Prediction

Research indicates that violating the conditions of release can predict recidivism (Hanson and Morton-Bourgon, 2004). In theory, the polygraph assists in detecting violations of conditions, so a failed

[29] Hands-on offenses include vaginal, anal, or attempted penetration, oral sex, fondling/frottage, excess aggression, and assault including domestic violence with deviant sex act. Hands-off offenses include exhibitionism, voyeurism and stalking. High Risk behaviors include urination with sex act, bestiality, giving alcohol or drugs to victim, offender under the influence at the time of the offense, abuse of alcohol and drugs during periods when offenses occur, more than one unwilling participant, pornography, obscene internet or phone contact, masturbation to deviant fantasy, excessive masturbation, preparation for assaults (e.g. driving around, and other. (p. 32).

polygraph should serve as a proxy measure for violations and be predictive of recidivism. Unfortunately, this research has yet to be conducted. Similar research has been conducted into the polygraph with domestic violence offenders on probation in Georgia who were considered high risk.[30] Of the 43 who voluntarily submitted to the examination, 81% reported behavior that violated the conditions of probation, including drug use (62%), abuse (30%), illegal contact (27%) and firearms possession (11%). Those who admitted high risk behavior were more likely to be rearrested[31] (Wilson, Batye & Roberto, 2008).

One published study compared matched samples of offenders who did and did not receive a polygraph examination. Reoffense rates of 208 sex offenders in Vermont were evaluated for five years post-community placement. Results revealed no difference in sexual or general (other) recidivism rates of offenders who did and did not undergo a polygraph examination. As illustrated in Figure 7, the exception was violent reoffenses: 2.9% compared to 11.0%, respectively, $p < .05$; sexual reoffense rates were 5.8% and 6.7% respectively, a difference that is not statistically significant (McGrath, Cumming, Hoke, & Bonn-Miller, 2006).



	Sexual	Violent*	Serious	Other	Any
No polygraph	0.067	0.115	0.163	0.298	0.346
Polygraph	0.058	0.029	0.087	0.346	0.385

Figure 7. Percent of Polygraphed and Non-Polygraphed Offenders Rearrested. Source: McGrath, Cumming, Hoke, & Bonn-Miller (2006).

Readers are cautioned that the McGrath et al. (2006) study is preliminary and should not be interpreted as grounds to reject the PCSOT. While the implication may be that the polygraph does not deter sexual offending, there is ample evidence that the polygraph does have a cognitive deterrent effect; and the information obtained on non-compliant behavior can greatly facilitate effective community management of offenders by focusing supervising officers on various acute risk factors.

Research: Effects on Supervision

The polygraph can facilitate truthfulness in the context of supervision and treatment of sex offenders. In one study of sex offenders in a program in Georgia, 44% of the offenders surveyed reported that they were more truthful with their probation officers and treatment providers, and 34% reported being more truthful about their behavior with family and friends (n=114). There was no difference in responses between offenders who had already been polygraphed and those who had not but were expecting it as part of the program (Grubin & Madsen, 2006).

Several studies have shown that use of the polygraph can assist in relapse prevention. In one study, 71 (56%) of 126 offenders surveyed reported that it did. Furthermore, anticipation of a polygraph examination can reduce risky behavior, 80 (63%) reported that it helped them avoid risky behavior:

- 57 (33%) of 173 surveyed reported that they were less likely to masturbate to deviant sexual fantasies;
- 53 (31%) reported they were less likely to have contact with children or vulnerable populations;
- 47 (27%) reported a reduction in their use of drugs and alcohol;
- 44 (25%) were less likely to use or buy pornography (Grubin & Madsen, 2006).

Across 230 maintenance polygraph examinations[32] of 104 offenders in Vermont, the following non-

[30] The sample included offenders who volunteered to participate in a treatment program. Those who agreed to a polygraph examination were promised that the results would not be used in judicial proceedings, and were reimbursed $50 for the first polygraph and $75 for the second. Half the sample agreed to the first polygraph (43 of 87; 20 completed one and 23 completed two).

[31] ROC = 0.85, CI 0.71 – 0.94, p = .0001.

[32] The offenders in this study were polygraphed an average of once every 22 months.

compliant behavior was reported (McGrath, Cumming, Hoke, & Bonn-Miller, 2007):

- 28.7% viewed sexually stimulating materials of adults;
- 19.1% used alcohol;
- 16.5% committed a non-specific technical violation;
- 16.1% had contact with a child;
- 15.7% masturbated to offense-related sexual fantasies;
- 12.6% used drugs;
- 8.7% used a computer for sexual purposes;
- 4.8% viewed sexually stimulating materials of children;
- 3.5% committed a new non-sexual, non-violent offense.

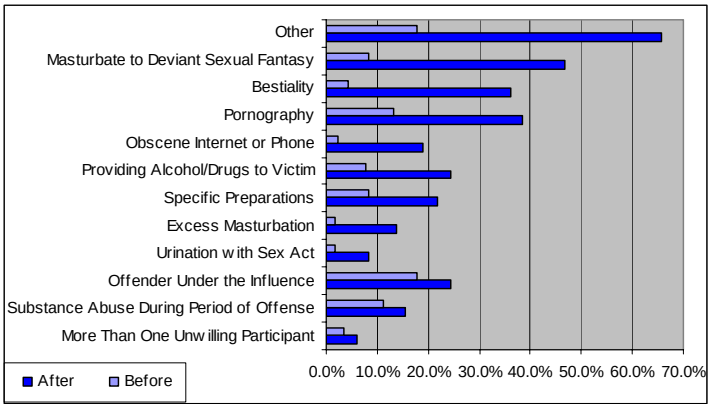


Figure 8. Pre and Post-Polygraph Self-Reported High Risk Behavior. Source: English, Jones, Patrick and Pasini-Hill, 2003.

As illustrated in Figure 8, polygraph examinations provided to 140 sex offenders under community supervision shows increased admissions of high risk behavior across all category types with the largest increases showing in masturbation to deviant sexual fantasies 38.4%; bestiality increased 37.7%; and the use of pornography increased 25.0%. The *Other* category increased 47.8%, and included items such as the use of drugs or alcohol during the assault and/or while under supervision, grooming behaviors, engaging in prostitution, or deviant fantasies (English, et al., 2003).

An earlier study of 32 sex offenders in England that examined self-reported high-risk behavior at the first polygraph examination showed similar findings (Grubin, et al., 2004):

- 84% masturbated to deviant sexual fantasies;
- 28% had unsupervised contact with children or vulnerable adults;
- 25% attempted to set up unsupervised contact with children (e.g. offering to babysit);
- 25% went to areas to view children for sexual arousal;
- 22% collected pictures of children for masturbation purposes;
- 16% viewed television shows with children for the purpose of sexual arousal.

Finally, comparing those polygraphed to those anticipating an exam, revealed that offenders who had undergone a polygraph were significantly *less* likely to visit places to view children (37 v. 5 X^2 = 5.9, d.f. = 1, p .01) and to engage in other risky behavior (18 v. 1 X^2 = 4.2, d.f. = 1, p .04; Grubin & Madsen, 2006).

Research: False Admissions

With the PCSOT, offenders can reveal information at three points: 1) when they are told they will be given a polygraph in the future; 2) at the pre-test interview; and 3) at a post-test interview (Cross & Saxe, 2001). In one study, most information was provided before the offender was hooked up to the machine: 75% disclosed to the polygraph examiner (24 of 32 subjects; Grubin, Madsen, Parsons, Sosnowski, & Warberg, 2004).

A study of 126 sex offenders in Georgia revealed that 12 (10%) reported making a false admission after an examination incorrectly indicated deception. The reasons given were fear of getting in trouble, feeling pressured by the examiner, wanting to make a good impression, and demonstrating a commitment to therapy (Grubin & Madsen, 2006). Another study comparing examination results with self-reported honesty of offenders generated similar findings. Of 333 polygraph examinations administered to 95 offenders who admitted their offense and were participating in treatment as a condition of remaining in the community revealed 11 false negatives, or 3.3% of the total number of

examinations. The number of false positives was higher, 22 (6.6%) and resulted in five fictitious admissions (1.5%). Four of those offenders next polygraph examination resulted in no deception indicated (Kokish, Levenson, & Blasingame, 2005).

Research has begun to demonstrate the positive effects of integrating the polygraph into community supervision and treatment models via the *Containment Approach*. Of course, implementation of the polygraph in this context requires that a few legal issues be addressed, including permissible conditions of supervision, the right against self-incrimination, and admissibility in various legal proceedings.

Legal Issues

There are three core legal issues with the post-conviction polygraph testing of sex offenders under probation supervision. First, is it legally permissible as a condition of probation? Second, does it violate the Fifth Amendment right against self-incrimination? Third, are the results admissible at probation revocation hearings? (NYS Office of Court Administration, 2007).

While post-conviction polygraph testing is frequently challenged, courts across the United States have routinely held that the polygraph is a legitimate condition of probation, allowed polygraph evidence in revocation proceedings, and established that release may be revoked for failure to comply with a polygraph condition (Blackstone, 2008).

New York Penal Law Section 65.10 provides the statutory authority to impose conditions of probation, which include the following pertinent provisions:

> § 65.10 Conditions of probation and of conditional discharge.
> 1. In general. The conditions of probation and of conditional discharge shall be such as the court, in its discretion, deems reasonably necessary to insure that the defendant will lead a law-abiding life or to assist him to do so.
> 2. Conditions relating to conduct and rehabilitation. When imposing a sentence of probation or of conditional discharge, the court shall, as a condition of the sentence, consider restitution or reparation and may, as a condition of the sentence, require that the defendant:
> (l) Satisfy any other conditions reasonably related to his rehabilitation.
> 5. Other conditions. When imposing a sentence of probation the court may…require that the defendant comply with any other reasonable condition as the court shall determine to be necessary or appropriate to ameliorate the conduct which gave rise to the offense or to prevent the incarceration of the defendant.

New York State appellate courts in *People v. Wahl* and *People v. Bania* upheld special sex offender conditions of probation including those relating to sex offender treatment and counseling based upon these provisions in law. Moreover, polygraph testing is often coupled with treatment and/or counseling and used in the context of assessment and management.

The right against self-incrimination[33] and the issue of immunity from prosecution is addressed from a programmatic perspective in the next section. Courts have held that the Fifth Amendment does not apply to statements made to a probation officer, since the offender is not "in custody" (see *Minnesota v. Murphy*). That case also held that an offender may not refuse to answer a question because it may reveal a probation violation. Most court rejections of the self-incrimination claim have rested on the argument that the requirement to answer polygraph questions are no more intrusive than having to answer those of a probation officer. However, the courts are not settled on whether an individual must be given immunity to use the admission in a criminal proceeding as opposed to a violation proceeding (NYS Office of Court Administration, 2007).

In *U.S. v. Johnson*, the United States Court of Appeals for the Second Circuit, which includes

[33] The Fifth Amendment states that "no person…shall be compelled in any criminal case to be a witness against himself." For a review see Tanabe, J. (2001). Right against self-incrimination v. public safety: Does Hawaii's sex offender treatment program violate the Fifth Amendment? *University of Hawaii Law Review*. Summer 2001, 23 U. Haw. L. Rev. 825.

New York, upheld a case where the appellant challenged a polygraph condition based upon his Fifth Amendment rights. The court stated that a federal probationer could be compelled to answer the questions associated with the polygraph and observed that "Second Circuit precedent allows the revocation of supervised release of an offender who fails to answer questions even if they are self-incriminating" reasoning that "revocation is an administrative decision that may be made based on a refusal to answer relevant questions, so long as the administrator does nothing to impair the later invocation of the privilege." However, the Court concluded that did not mean that his Fifth Amendment rights were waived – they could still be challenged in any criminal prosecution as not an acceptable evidentiary tool. Significantly, however the Court recognized the "therapeutic value of the tool" for monitoring, treatment, and supervision of sex offenders by recognizing that it "can help penetrate deception and encourage an offender to confront his own motivations and behaviors."

In New York State, the polygraph is not by itself admissible in a criminal trial or grand jury proceedings. In general, expert psychiatric opinion testimony that is based, in part, on polygraph is not admissible (NYS Office of Court Administration, 2007). Overall, statements made after the polygraph is administered have been admitted in several Judicial Departments across New York for specific limited purposes (NYS Office of Court Administration, 2007). However, polygraph results may be admissible in probation violation hearings. The New York State Court of Appeals has distinguished probation violation hearings from criminal trials by determining that probation revocation hearings are *criminal proceedings* brought after a *criminal action*. The rationale is that the purpose of a violation hearing is to determine whether the defendant's *subsequent actions* violation the conditions of the original sentence rather than constitute a new crime (see *Matter of Darvin M. v. Jacobs*). Specifically, in *People v. Moon*, a revocation of probation was sustained by an appellate court despite the sex offender probationer's contention that his refusal to submit to a polygraph test was not grounds for a probation violation. Additionally, in *People v. Bercume*, a probation violation involving a sex offender was sustained in part because of testimony provided by his treatment counselor as to his treatment progress and admissions and for failure to abide by an electronic monitoring/home confinement condition. The latter condition was added after the probationer failed polygraph examinations which were part of his treatment regimen and made certain other admissions. The appellate court outright rejected his argument challenging admissibility of treatment information because of his subsequent revocation of release of his medical records and refuted his questioning the new conditions, asserting that they were imposed on consent not as a penalty.

Mandated Reporting and Conditional Immunity

It is clear that if an identifiable victim is revealed, mandated reporters must uphold their professional responsibility to report suspected abuse. Programs must balance the need to obtain a full picture of the offender's behavior patterns and victim preferences with public safety and the victim's recovery. With immunity, offenders may be more likely to disclose prior victimization. Some prosecutors believe that polygraphed admissions are coerced and therefore not admissible in court, or there may not be enough evidence to prosecute in the event that it is admissible. Input from the local prosecuting agency is recommended prior to making determinations on the issue of immunity.

There are three basic approaches to the issue of immunity (English, et al., 2000). The first is to provide limited or full immunity for prior crimes, which can be offered only on similar type crimes and remain in place as long as the offender is in compliance with supervision and treatment and/or successfully completes the period of community supervision. The second approach is to review each case individually, especially in the event that an offender confesses to a particularly heinous unsolved case.

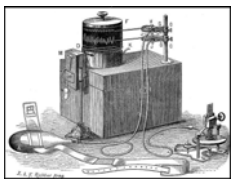
The third and most common approach has been called "don't ask don't tell" in which questions are drafted specifically to omit any information that can identify victims. A significant and related issue is that with this approach, precautions should be taken

to ensure that unidentified victims are not relatives or acquaintances of the offender who may be vulnerable to being victimized again. Therapists have voiced opposition to this approach during interviews with researchers:

> [C]oncealing specific victim information was seen as unacceptable, as it undermines the philosophy and the practice of full disclosure, reinforces the idea that certain secrets are required, and continues the offender's objectification of victims. (English et al., 2000, p. 20).

Some jurisdictions believe that it is important to contact prior victims to offer services, which can pose a dilema. If a victim chose not to come forward, contact may reconstitute the trauma that he or she has been able to avoid, manage or heal. On the other hand, victims may appreciate knowing that the offender, who presumably was never charged, has admitted to the offense. Jurisdictions are encouraged to work with the victim advocacy community to determine the best approach to contacting prior victims disclosed during treatment or polygraph examinations.

Professional Standards and Guidelines



Several organizations endorse and/or provide guidance regarding the use of polygraph examinations as a component of sex offender management. Among them are the American Polygraph Association (APA), the Association for the Treatment of Sexual Abusers (ATSA), and the Center for Sex Offender Management (CSOM). This section will summarize the guidance provided by those organizations, as well as provide some examples of polygraph policies and programs in use by different community corrections agencies around the country.

American Polygraph Association

Both the *By-Laws and the Standards of Practice*[34] provided by the APA include information on PCSOT. The PCSOT is considered an *Investigative Examination* "intended to supplement and assist an investigation and for which the examiner has not been informed and does not reasonably believe that the results of the examination will be tendered for admission as evidence in a court of record" (§ 3.2.3) as opposed to an *Evidentiary Examination* to "provide the diagnostic opinion of the examiner as evidence in a pending judicial proceeding…[and] not intended to prevent admission as evidence of a confession obtained during examination" (§ 3.2.1). The accuracy requirements differ for each type. Both require no more than a 20% inconclusive rate, however, accuracy of evidentiary examinations is 90%, while the rate is 80% for investigative examinations (§ 3.2.4.1 and § 3.2.4.3, respectively). Only full members[35] can conduct evidentiary examinations (§ 3.3.2), which also require the use of a motion sensor to detect countermeasures (§ 3.5.1.4).

All examiners must use a validated testing technique and must note any deviations (§ 3.9.1); a simulation test is required for evidentiary and initial PCSOT examinations (§ 3.9.2). The By-Laws limit the examiner to four investigative or three evidentiary examinations in one day, with a maximum of five (§ 3.9.10).

Audio/video recording is recommended for PCSOT examinations, and should be maintained according to state/local law or a minimum of one year (§ 3.9.9).

Specific *By-Laws* regarding PCSOT include a minimum of 40 hours of specialized training at an APA-certified PCSOT program (§ 3.11.2) and passing a written exam (§ 3.11.3). Neither treatment providers (§ 3.11.6) nor community correction officers (§3.11.7) shall conduct examinations on offenders they directly or indirectly supervise.

[34] http://www.polygraph.org/bylaws

[35] §5.1 includes the criteria: graduation from an APA accredited school; completed no less than 200 examinations and hold a valid license as required by state or Federal entities, and have a bachelors degree.

Association for the Treatment of Sexual Abusers

The Association for the Treatment of Sexual Abusers (ATSA) is a professional organization for clinicians and other professionals that work with sex offenders. However, they do not certify members of the therapeutic community. ATSA publishes the *ATSA Adult Male Practice Standards and Guidelines for the Evaluation, Treatment and Management of Adult Male Sexual Abusers* (2005) to aid its members in their professional practice.

Guideline 21, Corroboration of Self-Report recommends that all self-reported information be independently corroborated where possible (p. 15). *Guideline 22, Psychophysiological Assessments* recommends that clinicians obtain informed consent (§ 22.01); do not use the results as the sole criterion for estimating risk, making release recommendations or determining whether a client has completed treatment (§ 22.02); and obtain assurance that examiners are appropriately trained in their method of assessment and "adhere to applicable standards or guidelines of their profession" (§ 22.03, p. 16).

The *Guidelines* provide more information in Appendix C, including two objectives of using post-conviction polygraph testing with sex offenders:

1. To generate information beyond what can be obtained from other self-report measures; and
2. To increase compliance with supervision conditions and treatment rules and procedures. (p. 43)

The Guidelines also recommend that ATSA members have an understanding of how the polygraph works, the advantages and limitations of its use, be familiar and current with literature on the subject, obtain appropriate training prior to integrating the polygraph into a clinical treatment program, and be familiar with any state or local laws, rules or regulations regarding the polygraph.

In practice, clinicians should obtain written informed consent, and inform clients in writing about how the results will be used as well as the potential consequences of a deceptive result. Polygraph examination results should be considered in context with other information, and treatment should not be terminated solely for a deceptive polygraph examination.

Center for Sex Offender Management

The Center for Sex Offender Management (CSOM) promotes the use of polygraph examinations as one of the core elements of a sex offender management program. In *An Overview of Sex Offender Management* CSOM states "The polygraph has become an important asset in treatment and supervision because it provides independent information about compliance with supervision conditions and progress in specialized treatment. When an offender is engaging in noncompliant behavior, a polygraph test may reveal information that can impel the supervision officer to revise the case plan and/or take other action to prevent relapse and encourage success." (p. 7)[36]

Examples from Other States

The Wisconsin Department of Corrections provides seven goals of using the polygraph as a treatment strategy in its publication *Supervision of Sex Offenders: A Handbook for Agents* p. 9.50:[37]

1. To disclose offense pattern information for supervision and treatment purposes;
2. To hold the offender accountable for behaviors which occur while on supervision;
3. To verify the accuracy of self-reporting;
4. To assist in the ongoing monitoring and early identification of supervision rule violations and/or other criminal behavior;
5. To provide a deterrent to reoffending;
6. To identify offenders who need more intensive supervision or treatment; and
7. To provide information for the purposes of assessment, treatment and monitoring.

The Iowa Sixth Judicial District has used the polygraph since 1995. However, in association with

[36] http://www.csom.org/pubs/csom_bro.pdf
[37] http://www.wi-doc.com/04-12-2004/Sex%20Offender%20Manual.pdf

its participation in the Dynamic Supervision Project[38] in 2003, there was a shift in philosophy that re-shaped their PCSOT program. Since denial (Hanson & Bussière, 1998), minimization[39] (Hanson & Morton-Bourgon, 2004) and the number of known victims (Hanson & Harris, 1998) are not statistical predictors of recidivism, they were no longer relevant to the line of questioning pursued by the polygrapher. Therefore, a traditional interrogation approach was not necessarily the best.

The DSP research indicates that relevant statistical predictors of recidivism could be incorporated into a PCSOT program including static predictors such as victims who are male, unrelated victims or strangers, and continuing to access a prior victim. Dynamic factors such as sexual drive or preoccupations, self-regulation, cooperation with supervision, and potential victim access proved to be good predictors of recidivism. This caused the program to shift away from identifying the number of prior victims, confronting denial or addressing discrepancies in official records compared to offender admissions. They noted a 5% reduction in the number of tests with inconclusive results (from 8% for 1999 to 2002, to 3% for 2003 to 2005). They were also able to improve their rate of resolution closure when deception was indicated by 13% (from 80% in 2003 to 93% in 2006). Termination rate for examinees with medical or mental health issues was reduced from 6% to less than 2% with a population suffering from an already heightened state of anxiety, paranoia or other psychological arousal. The authors conclude the use of the polygraph as "a profiling tool to assess risk" works better than traditional interrogation (Cole, 2006).

Summary and Conclusions

This research bulletin has guided the reader through the foundation of the psychophysiological detection of deception along with limitations, as well as the principles and structure of Post-Conviction Sex Offender Testing. Research into the effectiveness of the PCSOT indicates that information on victim preferences, sexual offense history, and dynamic high risk non-compliant behavior can augment existing risk assessment instruments and management practice. Additional research should be conducted on the deterrent effect of the PCSOT as well as whether the number and type of deception indicated examinations can predict reoffense. The art and science of the polygraph have advanced so when used properly in the PCSOT context, the polygraph can be a vital tool in the effective management of sexual offenders under community supervision.

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[38] In brief, the Dynamic Supervision Project conducted by the Correctional Service of Canada sought to validate a risk assessment instrument scored by probation officers in the field. For a technical report visit, http://www.ps-sp.gc.ca/res/cor/rep/_fl/crp2007-05-en.pdf

[39] The issue of denial and minimization is hotly debated. See Langton, et al. (2008) for a discussion.

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