Polygraph Testing and Sexual Abuse: The Lure of the Magic Lasso

Theodore P. Cross
University of New Hampshire, Brandeis University
Leonard Saxe
Brandeis University

Polygraph tests to assess veracity are widely promoted for application in sexual abuse matters. The use of polygraph tests is advocated despite substantial differences in professional and scientific opinion about the validity of such techniques. Polygraph diagnoses of an individual's deception are inferences made by an examiner who compares physiological reactions to a set of questions. The test situation, however, is also used to induce examinees to admit crimes. In addition to their use in investigations, polygraph tests are used by defendants seeking exculpatory evidence and by treatment and probation programs to assess and monitor sexual offenders. Although there are dissenters, most knowledgeable scientists consider polygraph testing as unvalidated. Professionals need to access the literature on polygraph testing, evaluate the efficacy and ethics of polygraph tests in their community, and further develop standards for their use.

Polygraph tests to determine an individual's truthfulness are being widely promoted to assess sexual abuse. They are used in investigations and as a component of treatment and probation programs for sex offenders. The application of polygraph testing in sexual abuse matters has grown despite skeptical analysis of lie detection and despite legal and public policy curbs on its use (cf. Cross & Saxe, 1992; Saxe & Ben-Shakhar, 1999). Highly divergent opinions have appeared in the professional literature on sexual abuse. Some professionals who work with children have been critical of the use of polygraph testing with alleged perpetrators (Corwin, 1988; Faller, 1997), and their use with alleged victims of abuse has also been criticized (Sloan, 1995). Some professionals, however, who work with or study sexual offenders advocate use of polygraph tests in treatment and probation programs (see, e.g., English, 1998; English, Jones, Patrick, Pasini-Hill, & Gonzalez, 2000; English, Pullen, & Jones, 1996, 1997; Leberg, 1997).

What underlies the contradictory response to the use of polygraph tests? Although many scientists believe polygraph testing fails to meet the standards for a valid test (see, e.g., Cross & Saxe, 1992; Iacono & Lykken, 1997a; Saxe, 1991; Saxe & Ben-Shakhar, 1999), it may succeed as psychological manipulation (see Goldzband, 1999). An apt metaphor for this manipulation came from Marston (1917), a Harvard-trained psychologist who nearly 80 years ago developed the systolic blood pressure test, the progenitor of modern polygraphy for the detection of deception. Marston also created the comic book character Wonder Woman, who possesses a "magic lasso" that forces all who she corrals with it to tell the truth (see Wonder Woman pages, available at http://www.hastur.com/WonderWoman/marston.html; see also Lykken, 1998). Rather than working through magic, however,

Authors' Note: The Family Violence Research Seminar at the University of New Hampshire was instrumental to the preparation of this article. We also wish to thank Elise Cantor, Monique Simone, Elizabeth McDonald, and Erica Kibbe for their assistance. Correspondence concerning this article should be directed to the first author at the Crimes Against Children Research Center, 126 Horton Social Science Center, University of New Hampshire, Durham, New Hampshire 03824 or by e-mail at ted.cross@unh.edu.

CHILD MALTREATMENT, Vol. 6, No. 3, August 2001 195-206

polygraph examinations create a situation in which examinees are psychologically pressured to confess or provide self-incriminating information. A former police polygrapher called this power a "psychological billy club" (Williams quoted in Parson, 2000), whereas a psychologist-polygrapher has likened it to a Rorschach test (Lawrence, 1998). Although Marston represented polygraphy as a scientific test, belief in it may make it a sort of psychological magic lasso or placebo, regardless of its actual validity (see Saxe, 1991).

How Polygraph Tests Work

Although present-day polygraph tests have the appearance of sophisticated technology, the technique was developed more than 50 years ago and has not fundamentally changed (see, e.g., Matte, 1996; Saxe, Dougherty, & Cross, 1983, 1985). A typical polygraph instrument consists of a set of devices to measure and record breathing, cardiovascular activity, and palmar sweating. The instrument includes a set of stationary pens that record these measures on a moving roll of paper. The latest technology digitizes polygraph data and stores the results on a personal computer. Computerized polygraphs permit more efficient collection and analysis of subjects' responses but do not change the phenomena being measured.

Test questions. The diagnosis of deception is an inference about the meaning of physiological responses to a series of questions (see Katkin, 1987). The central problem with the use of a polygraph to detect deception is that there is no known physiological response that is unique to lying (see, e.g., Saxe et al., 1983). The most common polygraph procedure is the Control Question Test (CQT). A CQT includes three basic types of questions. Irrelevant questions such as "Is your name Joe?" are included as a baseline but not scored. The key questions on which examiners base their diagnosis are relevant and control questions. Relevant questions concern the crime or misdeed at issue, for example, "Did you insert your finger in Betty's vagina?" Control questions (also called comparison questions) are designed to be emotionally arousing for all subjects, regardless of whether they are being deceptive or nondeceptive. They are typically posed as questions about a subject's general honesty and usually concern possible misdeeds in a subject's history prior to the period under investigation. Polygraph examiners assume that they can detect deception by comparing reactions between control and relevant questions. This assumption is, however, disputed between polygraph proponents (e.g., Raskin, Honts, & Kircher, 1997) and opponents (e.g., Iacono & Lykken, 1997a).

Consider a typical control question used to test for sexual abuse: "Between the ages of 18 and 24, do you remember ever engaging in an unnatural sex act?" (Matte, 1996, p. 252). Polygraph examiners expect a nondeceptive suspect to react more strongly to this question than to a relevant question. The assumption is that the nondeceptive suspect will be less concerned about questions regarding the criminal charge, which they know they are telling the truth about, and more concerned with questions about their previous life. It is assumed that innocent subjects will lie in response to control questions or will be very concerned about whether they will be seen as truthful. Their primary fear, it is thought, will be failing the test because of their responses to the control questions. Examinees who react substantially more to relevant questions than to control questions are judged deceptive, whereas examinees who react substantially more to control questions are judged to be truthful. Lack of a substantial difference leads to an inconclusive result.

Innocent persons, however, might actually react more strongly to the relevant questions. Relevant questions, for example, may strike subjects as more threatening than control questions, regardless of subjects' guilt or innocence. Innocent subjects may be more alarmed about questions on a crime they are suspected of and could get punished for than about vague questions about past behavior that is not under investigation and not even necessarily criminal.

There are, likewise, a host of reasons why a deceptive person would react more strongly to control questions. The reaction could, for example, occur because control questions are novel or because examinees know or believe that they have other criminal behavior to hide. Guilty examinees may also have habituated (i.e., no longer be reactive) to a relevant question because they have been asked about it repeatedly. For both deceptive and nondeceptive subjects, it is not possible to rule out alternative explanations and to objectively determine whether differences in reaction are due to deception. As several psychological experts have noted, the theory underlying the CQT is implausible (Ben-Shakhar & Furedy, 1990; Iacono & Lykken, 1997a; Lykken, 1998; see also Saxe, 1991).

The traditional control question is referred to as a probable lie (examiner believes that the subject is lying about this issue). But some polygraphers (e.g., Honts, Raskin, Amato, Gordon, & Devitt, 2000) promote use of the directed lie. A directed lie comparison asks the subject to knowingly lie (e.g., "Have you ever told a lie?"). Intense debate on this matter among polygraphers is ongoing (e.g., Abrams, 1999; Honts et al., 2000; Matte, 2000). The debate illustrates

how little agreement there is, even among polygraphers, about control questions—the central feature of most polygraph tests about specific allegations.

The Guilty Knowledge Test is a polygraph test based on an entirely different theory (see, e.g., Lykken, 1998). Instead of assessing deception the Guilty Knowledge Test tests whether examinees' have a different physiological response to information that only a guilty party would have (e.g., the victim's clothing when the crime was committed). Because of the difficulty of obtaining sufficient guilty knowledge in most situations and because of concerns about the validity of these tests (Raskin et al., 1997), they are used infrequently. Thus, the remainder of this discussion concerns the CQT.

Polygraph tests are sometimes conducted with adolescent perpetrators and victims (see Chambers, 1994), but developmental factors have not been adequately studied, and it is difficult to say whether the test is different with minors. Abrams (1975) suggested that children younger than the age of 11 are poor polygraph subjects, and Matte (1996) argued that testing child victims is inadvisable because it makes them relive traumatic events.

Tests as manipulation. The test involves more than the operation of the polygraph instrument. The examiner interacts with the participant before, during, and after the examination (see, e.g., P. W. Davis & McKenzie-Rundle, 1984; Matte, 1996; Reid & Inbau, 1977). A pretest interview helps the examiner to learn about subjects' background and to influence them to believe in the test. The examiner often will quote high accuracy rates and conduct so-called stimulation tests to demonstrate the power of the instrument. For example, subjects may pick a number, and examiners will determine which number they chose by looking at the polygraph tracings made when a series of numbers were presented to them. The stim test, however, is based on different psychophysiological principles than the standard polygraph test and is sometimes rigged (Lykken, 1998).

If an examiner believes that a subject is deceptive, the subject will typically be interrogated at the conclusion of the test. In this posttest phase, the examiner confronts a subject with the results and tries to elicit a confession. Subjects may confess or reveal self-incriminating information during the pretest or posttest questioning. False confessions have occurred following polygraph-aided interrogation (Lykken, 1998) and examinees may provide false information to "satisfy" an examiner. No systematic data are available on the frequency of such outcomes.

The key issue, however, is that belief that a polygraph test can determine honesty serves as a powerful tool. If subjects are convinced that the test can detect lying, they may conclude that they have nothing to lose by revealing the truth and may even perceive an advantage (more leniency) if they acknowledge a misdeed. Or they may offer rationalizations, distortions, or other responses that inadvertently incriminate them or provide clues for investigation or assessment. The typical polygraph examiner has been trained in skills to elicit confessions (see, e.g., Holmes, 1995). To the extent that the polygrapher relies on the polygraph test outcome, guilty subjects who "beat" the test will not be interrogated. Thus, they are less likely to confess and their crimes may remain undetected.

Proponents suggest that the power of the polygraph in probation or treatment programs generalizes to the period before the examination (e.g., Abrams, 1991b; L. Jones et al., 1996). They argue that offenders may be more honest in nonpolygraph interviews if they know they will later be subjected to a polygraph test. The ability to induce confessions and self-incriminating reports is, perhaps, the major reason that polygraphy has been accepted for at least some uses in sexual abuse matters. In the absence of physical evidence or other corroboration, investigators, probation officers, and treatment staff members need additional information.

Social psychological laboratory research sheds light on the manipulative power of lie detectors (Saxe, 1991; Saxe et al., 1985). To mitigate social desirability effects and to increase the likelihood of honest responses from research participants in matters such as racial attitudes, E. E. Jones and Sigall (1971) devised the "bogus pipeline" procedure. Research participants were "hooked up" to an impressive-looking electronic device that was actually a "pile of electronic junk." Participants were told that the device was a lie detector that would accurately assess deviations from their true opinions. Indeed, those surveyed under bogus pipeline conditions provided responses that were more politically incorrect. Because subjects believe their honesty can be accurately measured, they perceive that it is in their interest to tell the truth (even if it reflects badly on them) rather than be caught telling a lie (see, e.g., Aguinis, Pierce, & Quigley, 1995). A meta-analysis of 20 years of research suggests that subjects offer socially undesirable information because of their fear of the bogus pipeline and not just because of the expectations of the experimenters (Roese & Jamieson, 1993). Although bogus pipeline research does not directly concern the efficacy of polygraph tests, it

supports the present analysis of the placebo function of polygraph testing.

Sexual Abuse Cases

Polygraph testing is used in a variety of ways to assess sexual abuse (Williams, 1999), ranging from investigative applications, to use by suspects or defendants seeking exculpatory evidence, to use to monitor sex offenders and aid in their assessment.

Investigative. The polygraph is used in different investigative settings as a test of specific allegations of abuse. Some police agencies or prosecutors conduct polygraph tests with alleged perpetrators and, sometimes, alleged victims of abuse (see Pence & Wilson, 1994; Sloan, 1995). Federal law enforcement agencies, including the Federal Bureau of Investigation (FBI) and the armed services, also use polygraph tests to assess sexual abuse allegations. However, the former chief of the FBI's polygraph unit has argued that polygraph results do not meet standards to be admitted as evidence in a criminal proceeding (Murphy & Murphy, 1997). The results of a polygraph examination are often used to help investigators decide whether to pursue a criminal charge. Employers sometimes contract with private polygraphers to assess sexual abuse or sexual harassment allegations against employees (Matte, 1996). Polygraph examiners have promoted investigative use of polygraph examinations in sexual abuse cases (e.g., Abrams & Abrams, 1993; Holden, 2000; Raskin & Steller, 1989) but much less so than for assessing known offenders.

It is difficult to know how widespread investigative use is because there is no requirement to report use of polygraph tests. Smith and Goretsky-Elstein (1993) found that a polygraph test was conducted in 15% of a sample of child abuse cases ($N = 297$) screened by prosecutors in 10 jurisdictions. However, criminal justice systems varied in their adoption of polygraph testing, and the 15% appeared to be from a small number of jurisdictions that used polygraph tests frequently. Police officers initiated testing for 77% of polygraphs, defendants for 15%, and others for 8%. Faller and Henry (2000) profiled another such jurisdiction, in which 37.5% of criminal court cases of child sexual abuse featured polygraph tests.

Exculpatory. There have long been efforts to introduce the results of polygraph tests as evidence in criminal and civil proceedings on behalf of defendants who claim innocence. Lykken (1998) reported that at least 17 states admitted the results of stipulated polygraph tests, that is, tests that are administered based on prior agreement by defense and prosecution. Marston himself first tried to introduce a blood pressure test as evidence of a defendant's innocence in the early 1920s (see Lykken, 1998). The case *United States v. Frye* (1923) led to the precedent that governed the introduction of scientific evidence in U.S. courts for nearly 70 years. The court rejected Marston's testimony because the test had not gained acceptance by the relevant scientific community. The *United States v. Frye* precedent has been superceded by a 1993 Supreme Court decision, *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (1993). *Daubert v. Merrell Dow Pharmaceuticals, Inc.* gives courts the discretion to weigh the validity of evidence, including whether it has gained acceptance by the scientific community (see Murphy & Murphy, 1997; Saxe & Ben-Shakhar, 1999).

Daubert v. Merrell Dow Pharmaceuticals, Inc. (1993) has led courts to reconsider the potential value of polygraph evidence. For example, lawyers for au pair Louise Woodward, who was accused of first-degree murder in a case involving a shaken baby, unsuccessfully attempted to introduce polygraph evidence (*Commonwealth of Massachusetts v. Woodward*, 1998; see also, e.g., Saxe & Ben-Shakhar, 1999; *United States v. Frank Javier Cordoba*, 1998). *Daubert v. Merrell Dow Pharmaceuticals, Inc.* is interpreted by some courts as compelling a hearing on admissibility of polygraph results, if requested by a defendant. There are, however, only a few examples in which such requests have been successful (cf. Honts et al., 2000). The U.S. Supreme Court ruled that a defendant's constitutional rights were not violated when a military court refused to admit polygraph results (*United States v. Scheffer*, 1998; see also Goldzband, 1999). This has discouraged attempts to admit polygraph evidence, although, because the matter involved a military court martial, the ruling may not be broad enough to limit all efforts to introduce polygraph test results.

Assessing and monitoring sexual offenders. Polygraph testing is being used systematically in a number of probation and treatment programs to uncover current and past sexual abuse (see, e.g., Abrams, 1989, 1991a, 1991b; Abrams & Abrams, 1993; Baranowski, 1998; Blasingame, 1998; English, Colling-Chadwick, Pullen, & Jones, 1996; Hager, 1989; Hagler, 1995; Matte, 1996; Pullen, Olsen, Brown, & Amich, 1996; Schlank & Shaw, 1996). An initial examination is often used to uncover information about the offender's past behavior, as an aid to assessment and treatment contracting. Periodic exams are also used to monitor offenders' behavior while in a treatment program or on probation (see, e.g., Abrams, 1989, 1991a, 1991b; Blasingame, 1998). Examinations often test for risky behavior, such as sexual fantasies about children as well as sexual offenses, and can be conducted as fre-

quently as every 3 to 6 months (Matte, 1996). Polygraph testing is used as only one of several bases for decision making, although some experts suggest establishing standardized sanctions and privileges based on whether offenders are judged deceptive or nondeceptive on the polygraph (Ahlmeyer, Heil, McKee, & English, 2000; Cooley-Towell, Pasini-Hill, & Patrick, 2000). L. Davis, McShane, and Williams (1995) advocated using polygraph testing to monitor access to the Internet for sex offenders on probation.

In a 1994 national sample (N= 732), 10% of probation supervisors and 9% of parole supervisors reported that offenders in their programs were often or always required to take polygraph tests for treatment or supervision (English, Colling-Chadwick, et al., 1996). About the same time, a national survey of treatment programs found that 24% used the polygraph with sexual offenders (Knopp, Freeman-Longo, & Stevenson, 1994).

Use has probably increased substantially since these surveys. English, Pullen, et al. (1996, 1997; see also English, 1998) have recommended polygraph testing as one leg, along with treatment and correctional supervision, in a triangle of containment for community management of sex offenders. The federally funded Center for Sex Offender Management (2000) described polygraph testing as "an important asset in treatment and supervision" (p. 11). Sex offender treatment professionals have offered training programs and presentations together with polygraph examiners (Gatlin, Criss, & Porter, 1999; Sinclair Seminars, 1998). Statewide programs or initiatives using polygraph assessment of offenders are active in Colorado (Heil, Ahlmeyer, McCullar, & McKee, 2000), Hawaii (Branson, 1999), Massachusetts (Center for Sex Offender Management, 1999), Oregon (Oregon Department of Corrections, 1995), and Vermont (Center for Sex Offender Management, 1999). In a recent survey of 122 supervision and corrections departments in Texas, more than three quarters of agencies used polygraph testing to supervise and treat sex offenders (McKay, 2000).

Research on Accuracy

Over the past 30 years, those who have reviewed the evidence for the validity of the CQT have come to radically different conclusions (see, e.g., Abrams, 1973; Ansley, 1990; Ben-Shakhar & Furedy, 1990; Forensic Research, 1997; Iacono & Lykken, 1997a; Raskin et al., 1997; Saxe, 1991; Saxe & Ben-Shakhar, 1999; Saxe, 1983, 1985; Williams, 1995, 1999). Differences in assessments of polygraphy represent significant theoretical disagreements as well as conflicting analysis of the adequacy of research.

The core of the debate concerns field studies. In field studies, a sample of polygraph tests conducted in actual investigations are compared against a measure of "ground truth"—some other method for determining whether examinees are lying or telling the truth. Developing an adequate field study is challenging because of the difficulty of establishing ground truth. Indicators of the truth such as physical evidence, eyewitness testimony, or DNA evidence are often unavailable in polygraph cases. Note that sexual abuse cases especially lack such evidence of ground truth (see, e.g., Myers, 1998). Most studies use confession as a criterion of ground truth, whereas a few use the decision of a panel of experts reviewing case evidence (see Iacono & Lykken, 1997a; Raskin et al., 1997).

Compared with critics, supporters of polygraph testing, such as Ansley, Williams, and Raskin, consider as valid a larger number of field studies, many from polygraph and criminal justice professional journals (e.g., *Polygraph, Journal of Police Science and Administration*). Supporters often report accuracy rates exceeding 90%. But critics have rejected many of the studies included by proponents. Iacono and Lykken (1997a) argued that these studies lack adequate peer review and had fatal methodological flaws.

The most damning criticism is that the use of confession to measure ground truth introduces a selection bias (Iacono, 1991; Iacono & Lykken, 1997a; Patrick & Iacono, 1991). The sample of guilty subjects in most studies consists primarily of those subjects who were found deceptive by the polygraph. Confessions were typically elicited by polygraph examiners themselves when they confronted examinees in the posttest interview. But not all examinees are confronted, only those who "fail." Cases in which a guilty subject beats the polygraph are unlikely ever to be included in research studies. Reliance on confession as a criterion of accuracy is likely, thus, to artificially inflate polygraph accuracy rates. Iacono (1991; see also Iacono & Lykken, 1997a; Patrick & Iacono, 1991) demonstrated how an examiner making judgments with chance accuracy could accumulate a sample of cases in this way that suggested accuracy close to 100%.

Given these problems, Iacono and Lykken (1997a) identified only a handful of adequate field studies, which have much lower accuracy rates. They found no evidence for the validity of polygraph testing in field studies and raised concerns about the percentages of false positives and negatives in these studies. Similar controversy envelops other polygraph studies. For example, Raskin et al. (1997) argued for polygraph validity based on laboratory analogue studies with an aggregate accuracy rate of approximately 90%. But

Iacono and Lykken (1997a) argued that laboratory studies are too dissimilar from field polygraph tests to speak to real polygraph accuracy. Iacono and Lykken argued further that countermeasures are a real threat, whereas Raskin et al. claimed that successful use of countermeasures is unlikely. Results of surveys of scientists have been put forward on both sides (Iacono & Lykken, 1997a; Raskin et al., 1997). Sixty-two percent of scientists in a Gallup Organization (1984) survey and 60% in Amato and Honts (1994) study agreed that the polygraph test was a "useful diagnostic tool when considered with other reliable information." But in Iacono and Lykken's (1997b) surveys of scientists, only 36% in one and 30% in the other agreed that "the CQT is based on scientifically sound psychological principles or theory" (p. 430), and smaller percentages felt that courts should admit CQT polygraphs as evidence.

Regardless of one's position about the evidence, the clear conclusion is that there is no agreement among scientists. Notably, most scientific supporters of polygraph testing were originally affiliated with one research program at the University of Utah. Most other scientists who have written about polygraph test validity have been critics (Bashore & Rapp, 1993; Ben-Shakhar & Furedy, 1990; Furedy, 1996; Iacono & Lykken, 1997a; Kleinmuntz & Szucko, 1984; Saxe, 1991; Saxe & Ben-Shakhar, 1999; Saxe et al., 1983, 1985). At a minimum, it is fair to say that no overall accuracy rates for polygraph testing are accepted.

Research on sexual abuse applications. The validity of a psychological test must be considered separately for different applications of the test and populations (American Psychological Association, 1999). Arguably, sexual abuse represents a very different offense from other felonies, and sexual offenders and victims are very different populations. Cross and Saxe (1992) critiqued the validity of polygraph tests in child sexual abuse cases because the validity of polygraph tests generally had not been demonstrated, field research on the validity of polygraph tests in sexual abuse cases had not been conducted, and the nature of sexual abuse made polygraph assessment particularly problematic. It was argued that the denial and the tendency to rationalize and minimize that is characteristic of sexual offenders might make lying about sexual offenses especially difficult to detect. Williams (1995, 1999), in response, claimed that other criminals cognitively distort their crime and thus that polygraphing sexual offenders is not a special case. But concerns with the potential effects of cognitive distortion by any offender raises concerns, given the lack of demonstrated validity for polygraph testing in general. An additional problem is the difficulty of designing suitable control questions related to sexual abuse.

Faller (1997) studied the relationship of polygraph findings to other assessments of child sexual abuse. A sample of 42 child sexual abuse cases involving polygraph testing was assembled from a university clinic and from solicitations to child abuse professionals. Data abstractors using case files completed questionnaires for the clinic cases, and the referring professionals completed them for the submitted cases. Faller created measures of evidence of child sexual abuse based on corroborating information external to the child interview (e.g., medical evidence, confession, other victim or witness information), on corroborating information from the child (e.g., sexual knowledge, sexual behavior, psychological testing), and on a number of contextual details. Polygraph findings were not statistically related to any of these measures, although the sample size was probably insufficient to assess this question. Passing police polygraph tests significantly predicted cases not being prosecuted, but failing the tests did not predict prosecution. In a borderline finding, polygraph results predicted substantiation by child protective services. But polygraph results were not related to substantiation by health and mental health professionals.

Faller (1997) is not a validity study, however, because it lacks an objective measure of ground truth. Indeed, we know of no field research that specifically tests the validity of polygraph examinations in sexual abuse cases (cf. Cross & Saxe, 1992). Not surprisingly, however, its manipulative effect has begun to be studied.

Research on Manipulative Effects

Some research has looked specifically at the effect of polygraph tests on the information that sexual offenders in treatment, on parole, or in prison report about their crimes. These studies have found that offenders reveal more self-incriminating information when the polygraph was added to criminal history and self-report. In one or more of these studies, the polygraph condition produced more self-incriminating information on the following variables:

- number of offenses, victims, or rate of offending (Abrams, Hoyt, & Jewell, 1991; Colorado Department of Corrections, 1998; Emerick & Dutton, 1993; O'Connell, 1998; Office of Research and Statistics, 2000; "Research Disputes Assumptions," 1988; see also Harrison & Kirkpatrick, 2000);
- number of types of offenses (e.g., rape, exhibitionism, etc.) (Emerick & Dutton, 1993; O'Connell, 1998; Office of Research and Statistics, 2000);

- reports of "hands-off" deviant behaviors and high-risk behaviors (e.g., exhibitionism, voyeurism, bestiality, masturbation to a deviant fantasy) (Emerick & Dutton, 1993; Office of Research and Statistics, 2000);
- degree of force (Emerick & Dutton, 1993);
- degree of intrusion (Emerick & Dutton, 1993);
- number of age groups abused (Office of Research and Statistics, 2000);
- number of types of relationships with victims (Emerick & Dutton, 1993; Office of Research and Statistics, 2000);
- number of genders abused (Emerick & Dutton, 1993; Office of Research and Statistics, 2000); and
- use and severity of pornography (Emerick & Dutton, 1993; Office of Research and Statistics, 2000).

Abrams et al. (1991) found that participants (N= 71) in a sexual abuse treatment clinic made an average of 2.34 admissions of sexually deviant behavior prior to being polygraphed. They interpreted this as evidence that anticipation of being subjected to a polygraph also has effects.

These studies suffer from methodological limitations such as the difficulty of disentangling the effects of polygraph testing and treatment (Office of Research and Statistics, 2000) and flaws in statistical analysis (Emerick & Dutton, 1993). In addition, the effects have not been found in all studies with all groups (see Ahlmeyer et al., 2000), and the accuracy of these admissions has not been validated. It would not be surprising to learn that offenders provide such information because they believe it is expected of them. Nevertheless, the consistency of the results of these studies and the breadth of the self-incriminating information revealed suggest the power of the test. The empirical literature on the bogus pipeline provides added support (see Saxe, 1991; Saxe et al., 1983).

Abrams and Ogard (1986; see also Abrams, 1989) examined recidivism for offenders on polygraph and probation supervision versus those on probation supervision alone. Overall, offenders who were polygraphed had lower rates of recidivism, although the number of sexual offenders in the study was too small for significance testing as a separate group. Small sample size (N= 28) is also a problem for Harrison and Kirkpatrick's (2000) study, in which some sex offenders reported that the polygraph led to avoidance of risky behaviors that may have resulted in treatment or parole violations.

Implications

How should sexual abuse professionals respond to use of the polygraph? They may be reluctant to discourage use of a tool that may help probation and treatment professionals confront intractable denial. Yet, they may not want to lend support to a procedure that has not been validated and is used to exculpate offenders, sometimes in the face of strong evidence of guilt. There is risk. If the polygraph as test is confused with its function as psychological manipulation, it is likely to be misused. At the very least, polygraph testing may lose some of its manipulative effect the more it is used. A placebo can function, but over time, the manipulated subjects may realize it has little power. Sexual abuse professionals can take several useful steps to limit the misuse of the polygraph test.

Knowledge is power. Regardless of a professional's stance toward polygraph testing, understanding the technique is essential. Gaining knowledge about polygraph testing is important to be able to treat claims about polygraph testing with appropriate skepticism. It is possible to develop serviceable knowledge quickly in response to a sudden initiative to use a polygraph test in an individual case or program. This knowledge can then be passed on to a judge, administrator, or other decision maker. Even a quick scan of the literature can tell the reader the following:

- The polygraph is not a simple, objective test;
- accuracy rates vary depending on which studies you consider;
- scientists disagree about which studies adequately test polygraph validity;
- some scientists consider the test valid, and many scientists do not;
- circumstances of testing may affect the outcome;
- countermeasures may be effective with the right training and practice;
- the magic lasso or bogus pipeline effect needs to be taken into account; and
- many programs find them helpful to assess and manage sex offenders.

For those interested in accessing the literature, Lykken's (1998) *A Tremor in the Blood* provides a wide-ranging and entertaining overview. Matte (1996) appears to be the most comprehensive publication in print in support of polygraph testing. Raskin et al. (1997) and Iacono and Lykken (1997a) are thorough, scholarly works, one mostly pro- and one mostly anti-polygraph, designed specifically to address *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, (1993) criteria and presented in the same volume in point-counterpoint fashion. Saxe and Ben-Shakhar (1999) have also reviewed the issue of legal admissibility, summarizing much of the extant literature. Other good sources for professionals include Ben-Shakhar

and Furedy (1990), Iacono and Patrick (1987, 1988), Saxe (1991), and Saxe et al. (1983, 1985).

Evaluate use. Sexual abuse professionals could also monitor and evaluate use of polygraph testing in their communities. They might start by learning more about the specific polygraph protocols and questions used, either in individual cases or in screening programs. Most of the dozens of polygraph reports we have seen in 17 years of consulting list the relevant questions but omit the control questions, despite the crucial role of the latter in diagnosis. Knowledgeable professionals can make intelligent inferences about offenders' interpretations and reactions to these questions. Can relevant questions be rationalized? Do control questions concern behavior about which innocent subjects are likely to have little anxiety or, conversely, behavior that even guilty subjects are very anxious to conceal?

Professionals can also attempt the difficult job of assessing outcomes. What happens following alleged detection of reoffending in a probation program? Are other investigative methods used to follow up on polygraph tests? What weight do polygraph results have on decision making? Is corroborating evidence available to support or negate polygraph diagnoses? How many subjects who pass their tests are later caught offending? How often does other evidence suggest subjects were wrongly judged to be guilty? These frequencies are likely to be small, but they are still worth assessing. Professionals could replicate Faller's (1997) method and compare polygraph results with the judgments of professionals based on other evidence in the case.

Professionals should consider the ethics of using an unvalidated test in their programs. An additional concern is that polygraph examiners often present the test to examinees as highly accurate and omit scientific controversy about its validity. Do treatment professionals want their clients to be deceived in this way? This deception is ironic given that treatment programs stress the importance of honesty (cf. Cross & Saxe, 1992).

Professionals should also inquire about potential side effects of polygraph tests in programs. Suppose that an honest client, trying to meet the demands of the treatment program, is misidentified as a reoffender. That may have a chilling effect on the confidence of that client and of others in the integrity of the program and may adversely affect the treatment alliance. Conversely, reliance on polygraph screening may engender a false sense of confidence among professionals and lead them to overlook other signs that a client who has beaten the polygraph is reoffending. Systematic uses of polygraph testing in a well-regarded program may also lend the procedure credibility for uses in which its validity is at best questionable.

Further develop standards. As the professional response to sexual abuse has matured, professional organizations have developed written standards for specific areas of practice such as evaluation of child sexual abuse (American Academy of Child and Adolescent Psychiatry, 1997; Task Force on the Psychosocial Evaluation of Suspected Sexual Abuse in Children, 1997) and use of anatomical dolls (Task Force on the Use of Anatomical Dolls in Child Sexual Abuse Assessments, 1995). Standards for psychological testing, which arguably should be applied to polygraph testing (see Saxe, 1991), have a long history (American Psychological Association, 1999). Professional standards for use of polygraph tests in sexual abuse cases need further development.

The American Polygraph Association (http://www.polygraph.org) has a code of ethics and standards of practice, including standards for postconviction sex offender testing. But in light of the controversy over polygraph testing and polygraph examiners' vested interest in the procedure, sexual abuse professionals should not leave standard setting solely to examiners.

Across all the organizations representing sexual abuse professionals, only the Association for the Treatment of Sexual Abusers (ATSA) has developed detailed standards. ATSA's (1997) *Ethical Standards and Principles for the Management of Sexual Abusers* states that the polygraph has "significant clinical value" (p. 36). But the manual cautions clinicians to "avoid misuse or over reliance [*sic*] on the instrument, procedure or the resulting data . . . be aware of the limitations of the instruments and current methodology . . . be knowledgeable about the current research regarding interpretation and validity" (p. 36). Guidelines are included on technical issues of polygraph testing: recording, instrument calibration, frequency of examinations, number of issues to be assessed, and number and construction of relevant questions. ATSA guidelines note that "Polygraph examination techniques will be limited to those techniques that are recognized by the industry as standardized and validated examination procedures" (p. 55). These are defined as "a technique or procedure which has achieved a published scientific database sufficient to support and demonstrate validity and reliability from the application and use of that specific polygraph technique" (p. 55). As discussed above, however, it is questionable whether any standardized polygraph examination procedure has achieved an adequate sci-

entific database to support its validity. Although the spirit of the ATSA guidelines is admirable, they fail to deal with the thorny problem of polygraph validity.

The ATSA (1997) guidelines state that polygraph examination results "should always be used in conjunction with other sources of information" (p. 36). The guidelines also state that a polygraph test is not appropriate "for determination of guilt or innocence related to a specific crime" (p. 36) and that it should not be "used as the sole criterion to determine a client's release from prison and/or a treatment program" (p. 36). Interestingly, however, the guidelines do not consider further how to proceed when the polygraph examiner diagnoses deception but there is no corroboration and the offender denies wrongdoing. This is an important policy question on which even proponents disagree. Some call for standardized sanctions and privileges based on the polygraph diagnosis (Ahlmeyer et al., 2000; Cooley-Towell et al., 2000), whereas Blasingame (1998, p. 43) states that treatment providers should not base clinical or legal decisions solely on the polygraph and should refrain from sanctions based on polygraph results. In their survey, L. Jones et al. (1996) found that "results from polygraph exams are rarely used in a probation hearing" (p. 3.7); instead, they are used to identify behavior that needs more surveillance. But such limitations have not found expression as standards. Given the polygraph examination's lack of demonstrated validity and questions about its interpretation, a strong standard is needed so that no decision should be made solely on the basis of the scoring of the polygraph charts.

Elaborating standards would have additional benefits. The process of inquiry would encourage sexual abuse professionals to learn about and question polygraph testing. Ideally, professionals working with offenders and with victims would confer and gain a balanced view.

CONCLUSION

Sexual abuse professionals need to understand polygraph testing, whether they support it or not. The issues raised by lie detectors are too important to be left in the hands of true believers. Far less attention has been paid to understanding and critically evaluating polygraph testing than to the various methods of assessing children for the validity of allegations (see, e.g., Fisher & Whiting, 1998). Research that specifically assesses the validity of polygraph tests in sexual abuse matters is urgently needed.

Basic research is needed on the underlying psychophysiological reactions of sexual abusers to a wide variety of stimuli, including polygraph procedures. A particular focus should be the interaction of sexual fantasy with memory and verbal statements. Research should also examine repeated testing. Although common in monitoring sexual offenders, it has little precedent elsewhere. Repeated administrations may lead to habituation or to the subject's learning countermeasures and may increase chances of a wrongful decision because of the increased probability of at least one error over the multiple tests.

Field studies of the validity of polygraph testing are complex because of the difficulties of ascertaining ground truth, yet if polygraph testing continues to be employed, such studies are essential. Iacono and Lykken (1997a) suggested a research design in which polygraph tests are conducted in actual cases but examiners avoid making the results known during the investigation. The polygraph charts would be independently scored, and cases would be followed up later to see if corroborating evidence supported polygraph results. This would avoid the selection bias associated with using polygraph-induced confessions as ground truth.

Polygraph tests may have utility to elicit important information about offenders, but the potential cost is substantial. Errors with deceptive individuals can lead to new offenses against children, whereas errors with truthful individuals can devastate people's lives. Association with the technique may affect the integrity and credibility of sexual abuse professionals. We would certainly want to employ a device that could objectively evaluate vexing questions about the honesty of sexual abusers. But it may be wishful thinking to believe that such an instrument exists.

REFERENCES

Abrams, S. (1973). Polygraph validity and reliability: A review. *Journal of Forensic Sciences, 17*, 313-327.

Abrams, S. (1975). The validity of the polygraph technique with children. *Journal of Police Science and Administration, 3*, 310-311.

Abrams, S. (1989). Probation polygraph surveillance of child abusers. *The Prosecutor, 22*, 29-38.

Abrams, S. (1991a). Lies: The polygraph as a tool in the treatment of sex abusers. *Preventing Sexual Abuse, 2*, 10-15.

Abrams, S. (1991b). The use of polygraphy with sex offenders. *Annals of Sex Research, 4*, 239-263.

Abrams, S. (1999). A response to Honts on the issue of the discussion of questions between charts. *Polygraph, 28*, 223-228.

Abrams, S., & Abrams, J. (1993). *Polygraph testing of the pedophile.* Portland, OR: Ryan Guinner.

Abrams, S., Hoyt, D., & Jewell, C. (1991). The effectiveness of the disclosure test with sex abusers of children. *Polygraph, 20*, 197-203.

Abrams, S., & Ogard, E. (1986). Polygraph surveillance of probationers. *Polygraph, 15*, 174-182.

Aguinis, H., Pierce, C. A., & Quigley, B. M. (1995). Enhancing the validity of self-reported alcohol and marijuana consumption using a bogus pipeline procedure: A meta-analytic review. *Basic and Applied Social Psychology, 16*, 515-527.

Ahlmeyer, S., Heil, P., McKee, B., & English, K. (2000). Impact of polygraph on admissions of victims and offenses in adult sexual offenders. *Sexual Abuse: A Journal of Research and Treatment, 12*, 123-138.

Amato, S. L., & Honts, C. R. (1994). What do psychophysiologists think about polygraph tests?: A survey of the membership of SPR. *Psychophysiology, 31*, S22.

American Academy of Child and Adolescent Psychiatry. (1997). *Forensic evaluation of children and adolescents who may have been sexually abused.* Washington, DC: Author.

American Psychological Association. (1999). *Standards for educational and psychological testing.* Washington, DC: Author.

Ansley, N. (1990). The validity and reliability of polygraph decisions in real cases. *Polygraph, 19*, 169-181.

Association for the Treatment of Sexual Abusers. (1997). *Ethical standards and principles for the management of sexual abusers.* Beaverton, OR: Author.

Baranowski, G. H. (1998). Managing sex offenders in the community with the assistance of polygraph testing. *Polygraph, 27*, 75-88.

Bashore, T. R., & Rapp, P. E. (1993). Are there alternatives to traditional polygraph procedures? *Psychological Bulletin, 113*, 3-22.

Ben-Shakhar, G., & Furedy, J. (1990). *Theories and applications in the detection of deception.* New York/Berlin: Springer-Verlag.

Blasingame, G. D. (1998). Suggested clinical uses of polygraphy in community-based sexual offender–treatment programs. *Sexual Abuse: A Journal of Research and Treatment, 10*, 37-45.

Branson, H. K. (1999). How Hawaii's treatment for sex offenders works: Intense follow-up is the key. *Corrections Technology and Management, 3*, 54-56.

Center for Sex Offender Management. (1999). *Case studies on the Center for Sex Offender Management's national resources sites.* Silver Spring, MD: Author.

Center for Sex Offender Management. (2000). *Community supervision of the sex offender: An overview of current and promising practices.* Silver Spring, MD: Author.

Chambers, H. (1994). *Snohomish County Juvenile Court Sex Offender Treatment Program: Policy statement on the use of polygraph in treatment of juvenile sex offenders.* Everett, WA: Snohomish County Juvenile Court Services.

Colorado Department of Corrections. (1998). *Evaluation report: Integration of polygraph testing with adult sex offenders.* Denver: Colorado Division of Criminal Justice.

Commonwealth of Massachusetts v. Woodward, SJC-07635 (D. Boston, 1998).

Cooley-Towell, S., Pasini-Hill, D., & Patrick, D. (2000). Value of the post-conviction polygraph: The importance of sanctions. *Polygraph, 29*, 6-19.

Corwin, D. L. (1988). Early diagnosis of sexual abuse: Diminishing the lasting effects. In G. E. Wyatt & G. J. Powell (Eds.), *Lasting effects of child sexual abuse* (pp. 251-269). Newbury Park, CA: Sage.

Cross, T. P., & Saxe, L. (1992). A critique of the validity of polygraph testing in child sexual abuse cases. *Journal of Child Sexual Abuse, 1*, 19-33.

Daubert v. Merrell Dow Pharmaceuticals, Inc., 113 C. Ct. Supp. 2786 (1993).

Davis, L., McShane, M. D., & Williams, F. P. (1995). Controlling computer access to pornography: Special conditions for sex offenders. *Federal Probation, 59*, 43-48.

Davis, P. W., & McKenzie-Rundle, P. (1984). The social organization of lie-detector tests. *Urban Life, 13*, 177-205.

Emerick, R. L., & Dutton, W. A. (1993). The effect of polygraphy on the self report of adolescent sex offenders: Implications for risk assessment. *Annals of Sex Research, 6*, 83-103.

English, K. (1998). The containment approach: An aggressive strategy for the community management of adult sex offenders. *Psychology, Public Policy, & Law Special Issue: Sex Offenders: Scientific, Legal, and Policy Perspectives, 4*, 218-235.

English, K., Colling-Chadwick, S., Pullen, S., & Jones, L. (1996). *How are adult felony sex offenders managed on probation and parole?* Denver: Colorado Division of Criminal Justice.

English, K., Jones, L., Patrick, D., Pasini-Hill, D., & Gonzalez, S (2000). We need you to become experts in the post-conviction polygraph. *Polygraph, 29*, 44-62.

English, K., Pullen, S., & Jones, L. (1996). *Managing adult sex offenders: A containment approach.* Lexington, KY: American Probation and Parole Association.

English, K., Pullen, S., & Jones, L. (Eds.). (1997). *Managing adult se offenders: A containment approach* (National Institute of Justice Research Brief NCJ163387). Washington, DC: National Institute of Justice.

Faller, K. (1997). The polygraph, its use in cases of alleged sexual abuse: An exploratory study. *Child Abuse & Neglect, 21*, 993-1008.

Faller, K. C., & Henry, J. (2000). Child sexual abuse; A case study in community collaboration. *Child Abuse & Neglect, 24*, 1215-1225.

Fisher, C. B., & Whiting, K. A. (1998). How valid are child sexual abuse validations? In S. Ceci & H. Hembrooke (Eds.), *Expert wit nesses in child abuse cases: What can and should be said in cour* (pp. 159-184). Washington, DC: American Psychological Association.

Forensic Research. (1997). Validity and reliability of polygraph testing. *Polygraph, 26*, 215-239.

Furedy, J. J. (1996). The North American polygraph and psychophysiology: Disinterested, uninterested, and interested perspectives. *International Journal of Psychophysiology, 21*, 97-105.

Gallup Organization. (1984). Survey of members of the society fo psychophysiological research concerning their opinions o polygraph test interpretation. *Polygraph, 13*, 153.

Gatlin, C. H., Criss, S. E., & Porter, W. D. (1999, September). *Th development of a collaborative program for sex offender treatment usin the treatment triangle approach.* Paper presented at the meeting o the Association for Treatment of Sexual Abusers, Lake Buen Vista, FL.

Goldzband, M. G. (1999). Polygraphy revisited: U.S. v. Scheffer *Journal of the American Academy of Psychiatry & the Law, 27* 133-142.

Hager, D. M. (1989). A guide to conducting polygraph examinations in sexual matters. *Polygraph, 18*, 78-89.

Hagler, H. L. (1995). Polygraph as a measure of progress in th assessment, treatment, and surveillance of sex offenders. *Sexua Addiction and Compulsivity, 2*, 98-111.

Harrison, J. S., & Kirkpatrick, B. (2000). Polygraph testing an behavioral change with sex offenders in an outpatient setting An exploratory study. *Polygraph, 29*, 20-25.

Heil, P., Ahlmeyer, S., McCullar, B., & McKee, B. (2000). Integration of polygraph testing with sexual offenders in the Colorad Department of Corrections. *Polygraph, 29*, 26-35.

Holden, E. J. (2000). Pre- and post-conviction polygraph: Buildin blocks for the future—Procedures, principles, and practice *Polygraph, 29*, 69-98.

Holmes, W. D. (1995). Interrogation. *Polygraph, 24*, 237-258.

Honts, C. R., Raskin, D. C., Amato, S. L., Gordon, A., & Devitt, M (2000). The hybrid directed-lie test, the overemphasized comparison question, chimeras and other inventions: A rejoinder t Abrams (1999). *Polygraph, 29*, 156-168.

Iacono, W. (1991). Can we determine the accuracy of polygrap tests? In J. R. Jennings & P. K. Ackles (Eds.), *Advances i psychophysiology: A research annual* (Vol. 4, pp. 201-207). Londo Jessica Kingsley.

Iacono, W., & Lykken, D. T. (1997a). The scientific status research on polygraph techniques: The case against polygrap tests. In D. L. Faigman, D. H. Kaye, M. J. Saks, & J. Sande (Eds.), *Modern scientific evidence: The law and science of expert test mony* (pp. 582-618). St. Paul, MN: West.

Iacono, W. G., & Lykken, D. T. (1997b). The validity of the lie detector: Two surveys of scientific opinion. *Journal of Applied Psych ogy, 82*, 426-433.

Iacono, W. G., & Patrick, C. J. (1987). What psychologists shoul know about lie detection. In I. B. Weiner & A. K. Hess (Eds. *Handbook of forensic psychology* (pp. 460-489). New York: Joh Wiley.

Iacono, W. G., & Patrick, C. J. (1988). Assessing deception: Polygraph techniques. In R. Rogers (Ed.), *Clinical assessment of malingering and deception* (pp. 203-233). New York: Guilford.

Jones, E. E., & Sigall, H. (1971). The bogus pipeline: A new paradigm for measuring affect and attitude. *Psychological Bulletin, 76,* 349-364.

Jones, L., Pullen, S., English, K., Crouch, J., Colling-Chadwick, S., & Patzman, J. (1996). Summary of the national telephone survey of probation and parole supervisors. In K. English, S. Pullen, & L. Jones (Eds.), *Managing adult sex offenders: A containment approach* (pp. 3.1-3.14). Lexington, KY: American Probation and Parole Association.

Katkin, E. S. (1987). Psychophysiological assessment for decision-making: Conceptions and misconceptions. In D. R. Peterson & D. B. Fishman (Eds.), *Assessment for decision. Rutgers symposia on applied psychology* (Vol. 1, pp. 107-133). New Brunswick, NJ: Rutgers University Press.

Kleinmuntz, B., & Szucko, J. J. (1984). Lie detection in ancient and modern times: A call for contemporary scientific study. *American Psychologist, 39,* 766-776.

Knopp, F. H., Freeman-Longo, R., & Stevenson, W. (1994). *Nationwide survey of juvenile and adult sex offender treatment program and models.* Orwell, VT: Safer Society.

Lawrence, S. (1998, August). Shedding light on the polygraph [Letter to the editor]. *APA Monitor, 29,* 3.

Leberg, E. (1997). *Understanding child molesters: Taking charge.* Thousand Oaks, CA: Sage.

Lykken, D. (1998). *A tremor in the blood: Uses and abuses of the lie detector* (2nd ed.). Reading, MA: Perseus.

Marston, W. M. (1917). Systolic blood pressure symptoms of deception. *Journal of Experimental Psychology, 2,* 117-163.

Matte, J. A. (1996). *Forensic psychophysiology using the polygraph: Scientific truth verification—Lie detection.* Williamsville, NY: J.A.M. (Available on the World Wide Web: http://www.mattepolygraph.com)

Matte, J. A. (2000). A critical analysis of Honts' study: The discussion (stimulation) of comparison questions. *Polygraph, 29,* 146-150.

McKay, B. (2000). State of polygraph testing on sex offenders under community supervision in Texas. *Polygraph, 29,* 36-39.

Murphy, C. A., & Murphy, J. K. (1997). Polygraph admissibility: A critical analysis under standards set by Daubert v. Merrell Dow Pharmaceutical. *Update, 10,* 1-2.

Myers, J. B. (1998). *Legal issues in child abuse and neglect practice* (2nd ed.). Thousand Oaks, CA: Sage.

O'Connell, M. A. (1998). Using polygraph testing to assess deviant sexual history of sex offenders (Doctoral dissertation, University of Washington, 1998). *Dissertation Abstracts International, 58,* 3023.

Office of Research and Statistics. (2000). Combo of polygraph & treatment reveals many sex offenders offend across multiple relationship, age, gender, & crime type categories. *Elements of Change: Highlighting Trends and Issues in the Criminal Justice System, 5,* 1-7.

Oregon Department of Corrections. (1995). *Sex offender community notification in Oregon* (Report for the Oregon legislature, NCJ No. 155233). Washington, DC: National Institute of Justice.

Parson, A. (2000, August 15). The quest for truth. *The Boston Globe,* pp. F1, F3.

Patrick, C. J., & Iacono, W. G. (1991). Validity of the control question polygraph test: The problem of sampling bias. *Journal of Applied Psychology, 76,* 229-238.

Pence, D., & Wilson, C. (1994). *Team investigation of child sexual abuse: The uneasy alliance.* Thousand Oaks, CA: Sage.

Pullen, S., Olsen, S., Brown, G., & Amich, D. (1996). Using the polygraph. In K. English, S. Pullen, & L. Jones (Eds.), *Managing adult sex offenders: A containment approach* (pp. 15.1-15.18). Lexington, KY: American Probation and Parole Association.

Raskin, D. C., Honts, C. R., & Kircher, J. C. (1997). The scientific status of research on polygraph tests: The case for polygraph tests. In D. L. Faigman, D. Kaye, M. J. Saks, & J. Sanders (Eds.), *The West companion to scientific evidence* (pp. 565-582). St. Paul, MN: West.

Raskin, D. C., & Steller, M. (1989). Assessing credibility of allegations of child sexual abuse: Polygraph examinations and statement analysis. In H. Wegener, F. Lösel, & J. Haisch (Eds.), *Criminal behavior and the justice system: Psychological perspectives* (pp. 290-302). New York/Berlin: Springer-Verlag.

Reid, J. E., & Inbau, F. E. (1977). *Truth and deception—The polygraph technique* (3rd ed.). Baltimore: Williams & Wilkins.

Research disputes assumptions. (1988). *National District Attorneys Association Bulletin, 7,* 1-3.

Roese, N. J., & Jamieson, D.W. (1993). Twenty years of bogus pipeline research: A critical review and meta-analysis. *Psychological Bulletin, 114,* 363-375.

Saxe, L. (1991). Science and the CQT polygraph: A theoretical critique. *Integrative Physiological and Behavioral Science, 26,* 223-231.

Saxe, L., & Ben-Shakhar, G. (1999). Admissibility of polygraph tests: The application of scientific standards post-Daubert. *Psychology, Public Policy, & Law, 5,* 203-223.

Saxe, L., Dougherty, D., & Cross, T. P. (1983). *Scientific validity of polygraph testing* (OTA-TM-H-15) (Report for the U.S. Congress, Office of Technology Assessment). Washington, DC: Government Printing Office.

Saxe, L., Dougherty, D., & Cross, T. P. (1985). The validity of polygraph testing: Scientific analysis and public controversy. *American Psychologist, 40,* 355-366.

Schlank, A. M., & Shaw, T. (1996). Treating sexual offenders who deny their guilt: A pilot study. *Sexual Abuse: A Journal of Research and Treatment, 8,* 17-23.

Sinclair Seminars. (1998). *Sex offender evaluation and treatment training program* [Brochure]. Madison, WI: Author.

Sloan, L. M. (1995). Revictimization by polygraph: The practice of polygraphing survivors of sexual assault. *Medicine & Law, 14,* 255-267.

Smith, B. E., & Goretsky-Elstein, S. (1993). *The prosecution of child sexual and physical abuse cases* (Final report of a grant from the National Center on Child Abuse and Neglect). Washington, DC: American Bar Association.

Task Force on the Psychosocial Evaluation of Suspected Sexual Abuse in Children. (1997). *Psychosocial evaluation of suspected sexual abuse in children* (2nd ed.). Chicago: American Professional Society on the Abuse of Children.

Task Force on the Use of Anatomical Dolls in Child Sexual Abuse Assessments. (1995). *Use of anatomical dolls in child sexual abuse assessments.* Chicago: American Professional Society on the Abuse of Children.

United States v. Frank Javier Cordoba, 158 (D. California, 1998), *aff'd,* SA CR 95-39-GLT [SF].

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

United States v. Scheffer, 118 S. Ct. Supp. 1261 (D. Washington, 1998), *aff'd,* USCA Dkt. No. 95-0521/AF. (U.S. Court of Appeals for the Armed Forces).

Williams, V. L. (1995). Response to Cross and Saxe's "A critique of the validity of polygraph testing in child sexual abuse cases." *Journal of Child Sexual Abuse, 4,* 55-71.

Williams, V. L. (1999). Response to Cross and Saxe's "A critique of the validity of polygraph testing in child sexual abuse cases." *Polygraph, 28,* 105-116.

Theodore P. Cross, Ph.D., is a research associate at the Crimes Against Children Research Center, at the University of New Hampshire, and in the Department of Psychology at Brandeis University. He has conducted research for the past decade on the criminal justice response to child maltreatment and the evaluation of a variety of interventions for troubled children. He is the principal investigator for the National Evaluation of Children's Advocacy Centers. With Saxe, he coauthored the 1983 Congressional Office of Technology

Assessment report on the validity of polygraph testing and has served as an expert witness and court expert on polygraph testing in several cases. He teaches graduate-level statistics and maintains a practice in child clinical psychology.

Leonard Saxe, Ph.D., is a social psychologist on the faculty of the Heller School of Social Welfare at Brandeis University. His work concerns the evaluation of social interventions, and he has long-standing involvement in assessing the validity of polygraph tests. He was a Congressional Science Fellow at the Congressional Office of Technology Assessment and was principal author of its study of the scientific issues of polygraph testing. He has coauthored a number of monographs, book chapters, and journal articles on the conduct of applied research. He has also served as an expert witness and court expert in numerous cases involving the use of psychological tests. Saxe received the American Psychological Association's award for Research in the Public Interest (Early Career) and has been a Fulbright scholar.