Truth by Ordeal: The Growing Acceptance of Polygraphy

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NOTES

TRUTH BY ORDEAL: THE GROWING ACCEPTANCE OF POLYGRAPHY
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I. THE ART OF POLYGRAPHY

In pursuit of justice, man has fashioned various devices to better discern when other men are not telling the truth. The lantern of Diogenes,\(^1\) trial-by-ordeal,\(^2\) and the Anglo-Saxon jury trial represent, respectively, mythical, primitive, and modern methods for determining veracity. Comparison of trial-by-ordeal with the modern jury trial shows that substantial progress has been made in jurisprudential factfinding. Yet progress is not perfection. Though many jurists might dispute that “jurisprudence [is] the science of the human lie,”\(^3\) few would expect the flame of Diogenes’ lantern to expire, or even flicker, in a contemporary courtroom. But the modern polygraph represents the most reliable “truth machine” ever invented and could, if properly employed, greatly reduce current cynicism about the veracity of testimony in judicial proceedings.

A. History and Theory

The history of the polygraph is the history of modern medical instrumentation. The polygraph’s three detection components—which monitor changes in blood pressure and pulse rate,\(^4\)

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1. Diogenes, a leader of the Greek philosophical sect known as the Cynics, lived an ascetic life which exemplified the sect’s creed of stoic self-sufficiency and rejection of luxury. There are many legends about Diogenes, one of which portrays him as a man dedicated to exposing the falsity of most conventional standards and beliefs. Hence his famous search for an honest man in broad daylight with a lighted lantern. One version of this legend has it that upon discovering an honest man, the flame in the lantern would go out. *Encyclopedia Britannica*, III Micropaedia 558 (1974).

2. “Trial-by-ordeal” was a practice used by primitive people to detect deception. The accused underwent a physical ordeal. If he was successful and unharmed, he was presumed innocent (or truthful). See Trovillo, *A History of Lie Detection* (pt. 1), 29 J. Crim. L.C. & P.S. 848, 850 (1939), for an interesting account of often-used ordeals.

3. *The Great Quotations* 605 (G. Seldes ed. 1960). The phrase quoted is from a work by Mikhail Bakunin. The complete quote reads: “Theology is the science of the divine lie, jurisprudence the science of the human lie, and metaphysics and idealistic philosophy the science of any half-lie.”

respiration, and galvanic skin response—were invented as separate instruments and, at first, were used exclusively for medical diagnosis and research. Not until the late nineteenth century were any of these instruments used to determine veracity. Furthermore, not until the early 1930's were these instruments combined in a single device. This device was the modern polygraph, which has remained essentially unchanged.

Although the theoretical and scientific basis of the polygraph's physiological recording components is well understood and universally accepted, the efficacy of using these instruments in a man-machine paradigm to detect deception has yet to receive widespread

5. Some of the earliest work on the influence of emotions on respiration was done by an Italian physiologist named Mossa. Trovillo, supra note 2, at 858.

6. The galvanic skin response (also known as the psychogalvanic reflex) takes its name from Galvani, an Italian physiologist who published a paper on animal electricity in 1791. Trovillo, A History of Lie Detection (pt. 2), 30 J. CRIM. L.C. & P.S. 104 (1939). The response is defined as a change in the electrical properties of the body (measured as a change in resistance to the flow of electrical current across the palms of the hands or soles of the feet) following noxious stimulation, stimulation that produces emotional reaction, and, to some extent, stimulation that attracts the subject's attention and leads to an aroused alertness. The response appears about two seconds after stimulation, rises to a maximum after two to ten seconds, and subsides at about the same rate. Modern recording instruments are variations of the original device designed in 1888 by the French physician Fere. ENCYCLOPEDIA BRITANNICA, VIII MICROPAEDIA 271-72 (1974).

7. Cesare Lombroso was the first person to use a scientific instrument for the purpose of detecting deception. In 1895, Lombroso published the results of experiments to determine the guilt or innocence of criminal suspects based upon changes in their blood pressure when questioned about the crime under investigation. Lombroso's instrument was relatively crude, but his success in detecting deception was duplicated as early as 1915 by William Marston, who used an ordinary sphygmomanometer—the same instrument commonly used by doctors to measure a patient's blood pressure. In 1914, Vittorio Benussi published his research on respiration changes as indicia of deception. A few years later, Harold Burtt partially confirmed Benussi's results and improved upon Benussi's technique. J. REID & F. INBAU, TRUTH AND DECEPTION 2-3 (2d ed. 1977).

Continuing his work in veracity determination, William Marston reported in 1917 that he and his colleagues used galvanic skin response (GSR) measurements to detect liars for the Army Intelligence Service. Trovillo, supra note 6, at 106.

Scientific efforts to determine veracity began about the turn of the century and have considered many variables, including the shunting of blood supplies from one body part to another and changes in hand volume, reaction time to word associations, respiratory changes, blood pressure, hand tremors, electroencephalographic activity, pupil size, oculomotor activity, voice, oxygen saturation of the blood, and behavioral symptoms. Barland & Raskin, Detection of Deception, in ELECTRODERMAL ACTIVITY IN PSYCHOLOGICAL RESEARCH 417, 419 (W. Prokasy & D. Raskin eds. 1973). For an excellent summary of experimental results using these measures, see Orne, Thackray, & Paskewitz, On the detection of deception: A model for the study of the physiological effects of psychological stimuli, in HANDBOOK OF PSYCHOPHYSIOLOGY 743 (N. Greenfield & R. Sternbach eds. 1972), as cited in Barland & Raskin, supra at 419, 475.

8. See J. REID & F. INBAU, supra note 7, at 4; Trovillo, supra note 6, at 109. The contemporary polygraph manufactured for field use has remained basically unchanged since 1935, with the only modifications being a reduction in size and weight and the use of transistors instead of tubes in the electrodermal (GSR) section.
Despite continuing scholarly debate over polygraphy's theoretical underpinnings, however, its utility in detecting deception is widely recognized and supported by a large body of empirical data.9

**B. Accuracy and Reliability**

Addressing the question of polygraphy's accuracy, critics11 and proponents12 alike agree that "the most important factor involved in the use of any [polygraph] is the ability, experience, education, and integrity of the examiner himself."13 In response to charges of widespread incompetence,14 polygraphists have formed associations which attempt to provide "quality control" for professional examiners by performing continuing educational and self-policing functions for their members.15 In some jurisdictions, due to steadily increasing polygraphy use, legislation controlling the polygraph has augmented attempts by polygraphists at self-regulation.16

9. Four major theories of lie detection are summarized in Barland & Raskin, supra note 7, at 445-47: (1) The conditioned response theory holds that the relevant questions are conditioned verbal stimuli which elicit emotional responses related to the subject's past experience. The more traumatic the previous experience, the greater the autonomic response. (2) The conflict theory suggests that when two incompatible reaction tendencies are aroused simultaneously (the tendency to lie or to be truthful), a large physiological disturbance occurs. (3) The punishment theory sees a subject's fear of detection and subsequent punishment as responsible for measurable physiological responses. (4) The arousal theory avoids the use of emotions and states simply that detection occurs because of the differential arousal value of the various stimuli.

10. See id. at 418. This essay presents an excellent summary of polygraphy research in both field and laboratory settings. It also contains an extensive bibliography of polygraphy readings.

11. See Skolnick, Scientific Theory and Scientific Evidence: An Analysis of Lie-Detection, 70 Yale L.J. 694, 707 (1961). Skolnick presents a valuable critical analysis of polygraphy theory and technique, although some of his major arguments against polygraphy have been rebutted by subsequent research.

12. See United States v. Lanza, 356 F. Supp. 27, 31 (M.D. Fla. 1973) (testimony of John Reid). Reid, a leading polygraphy authority, originally believed the polygraphy art to be too primitive for the courts legitimately to sanction test results. J. Reid & F. Inbau, supra note 7, at 314. But only 13 years later, while acknowledging that the basic polygraphy apparatus had not changed, Reid reversed his position and began advocating judicial acceptance of polygraphy results because of improved experience, competency, and reliability of polygraph examiners. 356 F. Supp. at 31.

13. United States v. DeBetham, 348 F. Supp. 1377, 1385 (S.D. Cal.) (brackets in original), aff'd, 470 F.2d 1367 (9th Cir. 1972), cert. denied, 412 U.S. 907 (1973). Although the DeBetham trial court disallowed introduction of polygraph results in a nonjury trial, it noted that polygraphy was extremely accurate if conducted by a competent examiner. 348 F. Supp. at 1384-85.

14. Skolnick, supra note 11.

15. E.g., The American Polygraph Association (APA), which publishes a newsletter, provides recognition for outstanding members and sets standards for polygraphy schools and practitioners.

16. See, e.g., Fla. Stat. §§ 493.40-.56 (1977), which regulate (1) equipment (at least two detection components, including cardiovascular and respiration monitoring are required); (2)
Although the importance of a qualified examiner cannot be stressed too much, such emphasis is intended only as a caveat. It is not intended to reveal a fatal flaw in the process of lie detection. Indeed, professional polygraphists estimate polygraphy's accuracy to be nearly flawless, and more objective observers claim an accuracy of over ninety percent\textsuperscript{17} when the examination is administered by a competent examiner.\textsuperscript{18} Yet, despite polygraphy's well-documented accuracy, it is important to note that the feasibility of using any device to determine veracity turns on two factors: (1) the characteristics of the test population,\textsuperscript{19} and (2) the perceived rela-

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As of 1975, states which had similar laws regulating polygraph examiners included: Arkansas, Georgia, Illinois, Kentucky, Mississippi, Nevada, New Mexico, North Dakota, Texas, and Virginia. Tarlow, *Admissibility of Polygraph Evidence in 1975: An Aid in Determining Credibility in a Perjury-Plagued System*, 26 Hastings L.J. 917, 956 n.188 (1975).

17. Although accuracy estimates are often over 95%, most testimony about the accuracy of the procedure consists of the estimates of veteran operators. Though these operators are certainly experienced, their estimates are often made without proper methodological controls. See Tarlow, *supra* note 16, at 928 n.58, and Note, *Polygraphy: Short Circuit to Truth?*, 29 U. Fla. L. Rev. 286, 290 n.27 (1977), for citations and estimates. Perhaps the best discussion of modern scientific studies made to determine polygraphy's accuracy is presented by Barland & Raskin, *supra* note 7.

18. For purposes of this note, a "competent examiner" is one who has graduated from one of the polygraphy schools sanctioned by the APA and who also meets applicable state licensing requirements.

19. The characteristics referred to are not those which affect individual responsivity—*i.e.*, age (children are difficult to test reliably); physical disorder (cardiac or respiratory disorders produce unusual and difficult-to-interpret records); or mental disorder (low IQ and psychotic or neurotic persons cannot be reliably tested)—but rather those characteristics which are the ultimate objectives, that is, whether or not the individual is lying. J. Reid & F. Inbau, *supra* note 7, at 233-253. Although polygraphy's accuracy is greater than 90%, it is easily shown that the proportion of deceptive persons in the test population will affect the conditional accuracy of test results. For example, consider the following test populations:

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\begin{align*}
A, B, C, D, E &= \text{Test populations of 100} \\
a &= \text{Unconditional accuracy} \\
a' &= \text{Conditional accuracy} \\
L &= \text{Liars} \\
T &= \text{Truthtellers} \\
c &= \text{Correct} \\
i &= \text{Incorrect} \\
\text{L:100} & \quad 90 \quad 0 \\
\text{T:0} & \quad 10 \\
a' &= 100\% \\
a &= 90\% \\
\end{align*}
\]
tive costs of error. But since these limitations apply to any means of detection—including a modern jury trial—polygraphy's uniquely high degree of accuracy and reliability have led to its widespread use.

C. Current Extralegal Uses

As early as 1938, many police departments were using a less complex version of the modern polygraph as an investigative and interrogative aid. By 1958, polygraph use and acceptance had mushroomed so much that one author stated:

Stores, banks, insurance companies and industry widely utilize the device. Moreover, all branches of the armed forces have administered the lie detector in criminal work at some time, and several federal agencies have used the machine to test the loyalty and

Although the unconditional accuracy (a) for each of these populations is 90%, the conditional accuracy (a'), or the percentage of those identified as deceptive who are correctly so identified, varies with the percentage of deceptive persons in the test population. Consequently, in population A, where all members are liars, the conditional accuracy is 100%—i.e., all those identified as liars are correctly labeled. But in population C, one-half of whom are liars, the conditional accuracy is 90%, or equal to the unconditional accuracy. And where only one-tenth the population are liars (D), the conditional accuracy drops to a chance level of 50%. (See graph for visual representation of tabular data.) Since these population-dependent effects are inherent in any detection paradigm, their presence does not militate against polygraphy use but only against placing undue reliance on polygraphy's accuracy under certain conditions. Thus, where the perceived relative costs of error are great (as in the criminal justice system), or where a large proportion of the test population will be truthful (as in employment screening situations), a polygraphist's judgment of deception should be checked closely against other information. See generally Skolnick, supra note 11.

20. "Perceived" refers to the viewpoint of the test administrator, whether a potential employer or a prosecutor, while "relative costs of error" refers to the costs (to the test administrator) of following an incorrect assessment.

21. Trovillo, supra note 2, at 879-80.
integrity of both career personnel and applicants for employment. The Atomic Energy Commission, for example, refused to consider applicants for a selected group of "sensitive positions" at Oak Ridge until they had submitted to a lie detector test.\textsuperscript{22}

With minor exceptions, that description of use in 1958 remains accurate today. Now even more federal agencies are employing polygraphy, and use by law enforcement officials has reached the point that most large police departments employ a full-time examiner. The number of police examinations given is increasing as the costs of routine "gumshoe" investigations continue to rise.\textsuperscript{23} In addition, although precise data on the extent of business polygraph use is difficult to obtain, it has been estimated that more than 400,000 tests were administered in 1972 in efforts to thwart an estimated three billion dollars' loss that year from employee theft.\textsuperscript{24}

Partly for that reason, the number of examiners rose fifty percent, to 1,200, between 1968 and 1973.\textsuperscript{25} Furthermore, it appears that polygraphy and business are destined to enjoy a long, close relationship despite heavy opposition from the A.C.L.U. and several labor unions.\textsuperscript{26} A 1976 article reported increased reliance on polygraphy by business and industry but reported also that opposition to such practices was mounting.\textsuperscript{27} Eighteen states have already passed legislation forbidding employers from requiring prospective employees to submit to polygraph testing.\textsuperscript{28} Yet, despite strong labor union and civil libertarian opposition, polygraph use in noncriminal areas continues to grow.\textsuperscript{29} It has been suggested that the overwhelming reason

\begin{footnotes}
\item[22.] Highleyman, \textit{The Deceptive Certainty of the "Lie Detector,"} 10 \textit{HASTINGS L.J.} 47, 48 (1958) (footnotes omitted).
\item[23.] The 1964-65 Moss Subcommittee hearings disclosed that 19 federal agencies were using the polygraph. \textit{R. Ferguson, Jr. \& A. Miller, The Polygraph in Court} 22 (1973).
\item[24.] \textit{Truth or Consequences,} \textit{TIME,} Mar. 19, 1973, at 73-74.
\item[25.] Id.
\item[26.] Id.
\item[27.] \textit{Now a Furor Over Lie Detectors in Business,} U.S. \textit{NEWS \& WORLD REP.,} Mar. 8, 1976, at 68-70.
\item[29.] Although the conditional accuracy of polygraphy is lower than desirable in most preemployment screening situations, this decreased accuracy does not seem to be the primary reason why labor unions and A.C.L.U. representatives have opposed such testing. The reason for their opposition seems to be that employers often abuse prospective (and current) employees by having the polygraph examiner probe personal, non-job-related areas such as drug use and sexual preferences. \textit{See, e.g.,} Osterman v. Paulk, 387 F. Supp. 669 (S.D. Fla. 1974).
\item[29.] \textit{Now a Furor Over Lie Detectors in Business,} supra note 27, at 70.
\end{footnotes}
for such sustained growth is the steadily spiraling costs of employee theft, which have reached an estimated six billion dollars a year.  

Perhaps the most intriguing modern use of polygraphy, however, is in scientific research. For a long time, professional scientists were reluctant to become associated with a "quasi-scientific" technique the high priests of which were detectives. Recently, however, scientists have recognized that polygraphy offers substantial promise for the study of numerous questions in psychology and psychophysiology.

In a country where businessmen, law enforcement officials, security-conscious federal agencies, and scientists rely on polygraph results, it seems anomalous that those same results are generally barred from admission into evidence in courts of law. The remainder of this note will examine the legal status of polygraph evidence, focusing on origins of the current law and developing trends.

II. Legal Status

A. The Frye "General Acceptance" Rule: Perverted Precedent

Frye v. United States is the grandfather of all polygraph cases because it is the first reported attempt to introduce a deception test into evidence. Since the Frye decision in 1923 marked the beginning of an almost unswerving judicial hostility toward polygraph evidence, it should be examined closely.

In Frye, a defendant accused of murder sought to introduce the results of a "lie-detector" test into evidence. The test, administered with an instrument which measured only systolic blood pressure, indicated that the defendant was truthful when denying any knowledge of the crime charged against him. In refusing to admit the evidence, the Frye court enunciated its now famous "general acceptance" test for the introduction of novel scientific test results:

30. Lykken, Psychology & the Lie Detector Industry, 29 AM. PSYCHOLOGIST 725, 725 (1974). Lykken reports that several million polygraph examinations are administered annually by U.S. businessmen in efforts to curb these spiraling theft rates.

31. Barland & Raskin, supra note 7, at 418.

32. The United States is not alone in its use of polygraphy. Other countries using polygraphy are Canada, Mexico, Brazil, Argentina, Puerto Rico, France, Israel, Iran, Japan, Nationalist China, Thailand, and the Philippines. Countries in which polygraphy is known not to be used by the police include England, Australia, Denmark, Norway, Sweden, Finland, Iceland, the Soviet Union, and most of the other Communist-bloc countries. It is interesting to note that the two most repressive dictatorships of this century, the Hitler and Stalin regimes, did not use polygraphy, even though they were probably aware of its existence and utility. Id. at 421.

33. 293 F. 1013 (D.C. Cir. 1923).

34. Polygraphy: Short Circuit to Truth?, supra note 17, at 287.
Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.35

In applying this test to the “lie-detector,” the court concluded: “We think the systolic blood pressure deception test has not yet gained such standing and scientific recognition among physiological and psychological authorities as would justify the courts in admitting expert testimony deduced from the discovery, development, and experiments thus far made.”36 Thus, the Frye decision established the “general acceptance” test and relegated the “lie-detector” to the particular fields of psychology and physiology for evaluation. The Frye court thereby made general acceptance of the device by these scientific communities a prerequisite for judicial acceptance.

B. Critique of the Frye Rule

Although more than fifty years have elapsed, Frye is still the leading precedent cited to exclude polygraph evidence. Numerous courts, following the guide of stare decisis, have adopted the same conclusionary language.37 But these courts have failed to pause and reflect on two critical facts. First, modern polygraphic instrumentation and technique are advanced far beyond the systolic blood pressure “lie-detector” found wanting in Frye. Second, the Frye evidentiary standard, although arguably correct for the machine before the Frye court, is the correct standard for a court requested to take judicial notice of scientific facts. However, this standard is improperly applied as a criterion for the admissibility of scientific evidence. Yet even those courts which have remarked upon the improved instrumentation, technique, and accuracy of polygraphy have generally denied admission on the basis of the “general acceptance” standard.38

35. 293 F. at 1014 (emphasis added). It should be noted that the defendant was convicted but was released from jail three years later when another person was arrested for and confessed to the murder. R. Ferguson, Jr. & A. Miller, supra note 23, at 27 (citing N.Y. Judicial Council, Fourteenth Ann. Rep. 265 (1948)).
36. 293 F. at 1014.
37. E.g., Kaminski v. State, 63 So. 2d 339, 340 (Fla. 1953), in which the Florida Supreme Court quoted blindly from Frye in reference to a “systolic blood pressure deception test” 30 years after such a machine ceased to exist.
Modern evidentiary scholars roundly condemn adherence to the Frye "general acceptance" standard which was established fifty-five years ago and which has almost universally barred admissibility of polygraph evidence. So eminent an authority as McCormick has remarked:

"General scientific acceptance" is a proper condition for taking judicial notice of scientific facts, but not a criterion for the admissibility of scientific evidence. Any relevant conclusions which are supported by a qualified expert witness should be received unless there are other reasons for exclusion. Particularly, probative value may be overborne by the familiar dangers of prejudicing or misleading the jury, and undue consumption of time. If the courts used this approach, instead of repeating a supposed requirement of "general acceptance" not elsewhere imposed, they would arrive at a practical way of utilizing the results of scientific advances.39

Furthermore, the definition of "relevancy" in the new Federal Rules of Evidence supports the admissibility of polygraph evidence. "'Relevant evidence' means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence."40 Thus, the federal standard of relevancy is whether the offered evidence alters the probability of the existence of a disputed material fact.

Arguably, any procedure which offered an improvement over mere chance or randomness would satisfy this federal relevancy requirement. Therefore, since even the most pessimistic assessments of polygraphy's accuracy are substantially greater than chance, polygraph evidence appears to be prima facie admissible under the federal rules. Yet, even though it would seem that a federal court logically must be compelled to admit polygraph evidence, it is entirely possible that a given court may exclude such evidence. Federal courts may exclude polygraph evidence not because it speaks to an ultimate issue of fact, which is allowed under the federal rules,41 but because it may be too prejudicial.42

39. Id. § 203, at 491 (footnotes omitted). Professor McCormick is supported in his views by Wigmore, J. WIGMORE, 2 EVIDENCE § 990 (2d ed. 1923), and Richardson, J. RICHARDSON, MODERN SCIENTIFIC EVIDENCE ch. 10 (2d ed. 1974). The reader should note that even a limited survey of Psychological Abstracts from 1973 to date shows over 50 professional journal articles dealing with polygraphy, as either a research tool or an object of research, in the disciplines of psychology and psychophysiology. Thus, an argument exists that the current state of the polygraphy art satisfies even the too rigorous "general acceptance" rule.

40. FED. R. EVID. 401.

41. FED. R. EVID. 704 states: "Testimony . . . otherwise admissible is not objectionable
Bias is a legitimate concern, especially in the typical trial in which the jury must determine the ultimate issues after hearing lengthy, complex, conflicting, and often boring testimony. As a juror, why make a difficult situation impossible by trying to "weigh" the evidence? Why not instead lean toward the party who presents polygraph evidence, since the "truth machine" has the support of the experts? Such a scenario may indeed occur should polygraph evidence become admissible. However, it should not be assumed that juries would abrogate their solemnly sworn duty, particularly if judges cautioned against such a course by standard instructions on this type of evidence.43

The final and telling argument against continued application of the Frye rule is found in developing decisional law. Polygraph evidence, although almost universally excluded when offered against timely objection, is now admissible in almost one-third of the states when offered pursuant to stipulation.44 That courts have begun to relax their strict exclusionary rules regarding polygraph evidence merely because opposing parties have stipulated to the admissibility of such evidence—a condition which in no way enhances the reliability, accuracy, or weight of the polygraphist's report or lessens any prejudicial effect the evidence might carry—highlights the extreme judicial ambivalence to polygraphy. Furthermore, permitting admission of polygraph evidence pursuant to stipulation may be a sign that unrestricted admissibility over objection, a theme of several recent landmark cases, is soon to become a reality.

III. Florida Law

A. The Legal Status of Direct Use of Polygraph Evidence

Kaminski v. State established the Florida rule that results of polygraph tests are not admissible into evidence over objection by any party to the litigation.45 Florida, however, is among a growing

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42. FED. R. EVID. 403 states: "Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice ...."

43. There is some evidence to show that juries will not be unduly swayed by polygraph evidence. See Tarlow, supra note 16, at 968-69, for an account of one jury's reaction to polygraph evidence and its effect on the decisionmaking process.

44. See id. at 953 for an extensive list of citations.

45. 63 So. 2d 339 (Fla. 1953). The only question before the Kaminski court was whether testimony indicating witness submission to polygraph testing was admissible for purposes of witness rehabilitation. Holding such testimony inadmissible, the court noted that a contrary finding would result in allowing, "by inference, the admission of damaging evidence that would not have been legally admissible had it been submitted directly." Id. at 341. Thus, the Kaminski court, by implication and without the benefit of an evidentiary hearing, an-
minority of jurisdictions that admit polygraph results into evidence when the parties stipulate to their admission. Such stipulations are binding and enforceable, whether made orally or in writing.

In addition to refusing to admit test results, Florida courts have restricted other references to polygraph use. Testimony which gives rise to an inference about the results of a polygraph examination is inadmissible. Florida courts also disallow questioning which reveals a willingness by a witness or a party to submit to polygraphy. Although admission of testimony which violates either of these conditions generally constitutes harmful error, there have been some exceptions to the absolute bar against inadvertent polygraph testimony.

In 1974, in Sullivan v. State, the Florida Supreme Court found that the admission of testimony which arguably gave rise to an inference about the results of a polygraph test was harmless error. The court admonished prosecutorial overreaching in the form of eliciting testimony from a key witness which gave rise to a possible inference that polygraph results damaging to the defense had been obtained. Yet, although the Sullivan court indicated it would not tolerate such behavior, four factors rendered the error harmless in that case. First, the defense counsel failed or deliberately chose not to take advantage of the trial court’s offer to instruct the jury to disregard the polygraph reference. Second, the reference was ambiguous and could not be said conclusively to give rise to an interpreta-


48. Sullivan v. State, 303 So. 2d 632 (Fla. 1974), cert. denied, 428 U.S. 911 (1976); Kamin-}

50. Sullivan v. State, 303 So. 2d 632 (Fla. 1974), cert. denied, 428 U.S. 911 (1976). Although Sullivan stands for this proposition, its holding created the exception to that rule.

51. 303 So. 2d 632 (Fla. 1974).
tion prejudicial to the defendant. Third, the witness never referred to the results of the polygraph test in any manner. And fourth, the evidence of the defendant's guilt, including his prior confession, was so overwhelming that the one reference could not be said to have caused a miscarriage of justice necessitating a reversal of his conviction.\textsuperscript{52}

Similarly, the Florida Supreme Court held in Pinkney v. State that the admission of testimony which indicated whether a witness or a party was or had been willing to be polygraphed was harmless error.\textsuperscript{53} In Pinkney, the prosecutor asked the arresting officer whether the defendant made any statements upon arrest. The officer replied that the defendant, who was charged with rape, had requested a lie detector test. The court sustained an objection to this response and cautioned the jury to disregard the answer. Defendant's motion for mistrial was denied. On appeal, the supreme court offered no rationale for finding the trial court's denial of the defendant's motion for mistrial proper. The supreme court simply cited Belk v. State\textsuperscript{54} to support its finding of harmless error.\textsuperscript{55}

In Belk, a state's witness testified on cross-examination that he had remarked "about a lie detector test" to the defendant. Defense counsel interrupted the witness just after the reference to the polygraph test and moved for a mistrial. The court denied the motion and instructed the jury to disregard the answer. The appellate court found no harmful error where (1) mention of the lie detector test was elicited by the defendant on cross-examination (2) there was no reason on record to find that the witness was doing anything other than making an honest effort to answer the defendant's question, (3) the jury was carefully instructed to disregard the remark, and (4) the reference was casual and without particular meaning or harm to the defendant.\textsuperscript{56}

In summary, Florida has two general rules regarding the admissibility of polygraph evidence. First, neither the results, nor any reference to the results, of polygraph tests are admissible into evidence\textsuperscript{57} except upon stipulation of the parties.\textsuperscript{58} Second, the admission of any evidence which could give rise to an inference about the results

\textsuperscript{52} Id. at 635-36.
\textsuperscript{53} 241 So. 2d 380 (Fla. 1970); accord, Sullivan v. State, 303 So. 2d 632 (Fla. 1974); Belk v. State, 167 So. 2d 239 (Fla. 2d Dist. Ct. App. 1964); Johnson v. State, 166 So. 2d 798 (Fla. 2d Dist. Ct. App. 1964).
\textsuperscript{54} 167 So. 2d 239 (Fla. 2d Dist. Ct. App. 1964).
\textsuperscript{55} 241 So. 2d at 382.
\textsuperscript{56} 167 So. 2d at 240-41.
\textsuperscript{57} Kaminski v. State, 63 So. 2d 339 (Fla. 1953).
\textsuperscript{58} Codie v. State, 313 So. 2d 754 (Fla. 1975).
of a polygraph test constitutes harmful error except when: (1) the evidence is ambiguous insofar as it relates to the results of polygraphy, (2) the jury is given cautionary instructions to disregard the evidence or counsel waives the right to such instructions, (3) the evidence arose unintentionally and with no showing of bad faith by any party, (4) other evidence is so overwhelming that the reference cannot be construed as a miscarriage of justice, and (5) no reference to the actual results is made.

B. Indirect Uses of Polygraph Evidence

In Florida, voluntary post-polygraph examination statements or admissions made to the polygraph examiner are admissible. Traditionally, only those statements or admissions which related to the subject matter of the polygraph test were deemed admissible. Prior to 1976, State v. Cunningham established the Florida rule regarding admissibility of statements made by defendants to polygraphers.

In Cunningham, the defendant had been charged with robbery. The defendant protested his innocence, and it was stipulated that he would submit to a polygraph examination, the results of which would be introduced at trial. During the examination, the polygraph operator asked the defendant whether he had ever killed anyone. The defendant said he had not. At the conclusion of the test, the polygraph operator told the defendant that he had lied about never having killed anyone. The examiner said that this would affect the results of the test regarding the defendant’s involvement in the robbery. The defendant then admitted that some years earlier he had been involved in a robbery which resulted in a death. The polygraph operator subsequently informed the prosecutor of the de-

62. Id. In Burch, a murder suspect had been vigorously questioned for five and one-half hours, confronted with fabricated incriminating evidence, and given a mock polygraph test in order to lever a confession. The defendant maintained that he was innocent until told that he had failed the polygraph test, that the detective interrogating him would decide whether he would be charged with first- or second-degree murder, that the detective wanted to believe that the defendant had not premeditated the murder, and that the defendant should consider the difference between a capital crime and a seven- to twenty-year sentence in deciding whether to confess. At this point the defendant confessed. But at trial the defendant argued that his confession was involuntary. On review, the supreme court found the confession to be voluntary. Subsequently, in Hostclaw v. State, 351 So. 2d 970 (Fla. 1977), the supreme court cited Burch for the proposition that voluntary post-polygraph statements to the examiner are admissible.
63. 324 So. 2d 173 (Fla. 3d Dist. Ct. App. 1975).
fendant's admission. Soon thereafter the prosecutor instituted first-degree murder proceedings against the defendant on the basis of information gleaned by the polygraph operator. The trial court granted the defendant's motion to suppress the statements made to the polygraph operator. The appellate court affirmed, finding that "[t]he sole purpose of the stipulation entered into in the Overhead Door Company [robbery] case related to permissible evidence in that cause and in no other." 

Under Cunningham then, a defendant's statement to a polygraph examiner after completion of a stipulated examination would be admissible against that defendant only in the proceeding that was the source of the stipulation. Consequently, post-examination statements could not be used against the defendant in other criminal matters. Recently, however, in Hostzclaw v. State, the Florida Supreme Court expanded the ambit of admissibility for voluntary statements or admissions made to polygraph examiners. 

The defendant in Hostzclaw volunteered information to police investigators and a grand jury which implicated another person in the killing of a police officer. The defendant gave no information to indicate that he was involved in the murder. But when discrepancies between the defendant's testimony and certain facts became apparent, a polygraph test was arranged. After the test, the defendant made statements to the polygraph operator which apparently implicated him as an aider and abettor to the murder. The trial
court held these statements inadmissible on the authority of Cunningham. But the appellate court in Hostzclaw held that when a witness in a criminal investigation voluntarily submits to a polygraph examination for the purpose of verifying his testimony, post-test statements made to the examiner will be admissible against him in any subsequent criminal proceedings. The Florida Supreme Court, on conflict certiorari, took jurisdiction over the Hostzclaw case to determine the ambit of admissibility for post-test statements made to polygraph examiners.

In 1977, in Hostzclaw, the supreme court held that the defendant's post-test statements were admissible. Cunningham was explicitly overruled to the extent that it was inconsistent with the new holding. The practical effect of the Hostzclaw decision was to create a stipulation where there had been none previously. A logical reading of the case leads to the conclusion that any post-test statements or admissions to a polygraph operator will be admissible against the declarant in subsequent proceedings. Dicta in the Hostzclaw opinion bolsters this supposition and arguably presages a judicial disposition toward absolute admissibility for all statements made to a polygraph examiner. This perhaps could include even the fact that the declarant was subjected to a polygraph examination. Such a reading of Hostzclaw is admittedly broad. However,

the polygraph tests that the defendant made admissions to an investigator for the state attorney's office.

67. Id. at 1035.
68. Id. at 1036.
69. 351 So. 2d 970.
70. Id. at 972.
71. Although unnecessary to support its decision, the Hostzclaw court quoted favorably from Johnson v. State, 166 So. 2d 798 (Fla. 2d Dist. Ct. App. 1964). The Johnson court stated:

The established rule that neither the result of a polygraph examination nor any allusion to such an examination to imply a certain result is admissible or proper . . . does not, in our view, label the polygraph a tree whose every fruit is forbidden.

Perhaps the most frequent instances of a jury being advised of a defendant's having taken a lie detector test are in cases involving confessions or admissions procured in anticipation of, during or subsequent to administration of a lie detector examination. It is well established that the mere fact that a lie detector examination may have been involved in procuring a confession does not render the confession inadmissible. . . . However, if the defendant is forced to submit to the examination or if the methods of examination are such as to constitute actual or psychological coercion the resulting confession may well be found involuntary.

Necessarily, when a confession procured during or as a result of a lie detector examination is challenged, the facts surrounding the confession will be disclosed. If the court determines the evidence competent, these same facts—including the fact that the defendant was subjected to a lie detector—may be disclosed to the jury as bearing on the confession's credibility.

Id. at 801-03 (citations omitted).
it is notable that even a narrower reading—that all post-test statements or admissions to a polygraph operator will be admissible against the declarant—denotes greater judicial acceptance of polygraphy.

The favorable judicial attitude toward polygraphy embodied in Hostczlaw, however, is one which lays a treacherous trap for the clients of unwary defense attorneys. Should an attorney have his client stipulate to a polygraph test, he must ensure that the examiner's questions are precisely formulated and strictly limited to the legally relevant issues. If otherwise, and if the examiner is allowed broad latitude in question formulation, it is possible that a subject may be questioned about criminal activity beyond the scope of the events which gave rise to the stipulation. Any post-test admission or statement made to the examiner, albeit irrelevant and impermissible evidence in the pending action, could be admissible against the declarant in a subsequent proceeding. Thus, Hostczlaw mandates that attorneys who allow their clients to enter into polygraph stipulations should preclude examiner questioning which is irrelevant to the subject matter of the stipulation, lest they risk additional legal problems for those clients.

IV. THE LEGAL FRONTIER

Recently, several state courts have admitted the results of polygraph tests into evidence in nonjury cases where the tests were either ordered or accepted by the trial judge to assist him in ruling on a nonjury issue. This procedure could become popular, espe-

72. As, for example, the defendant in Cunningham was questioned about whether he had ever killed anyone. This question was posed during a polygraph examination stipulated to for the purpose of determining whether he was involved in a robbery.

73. Attorneys might attempt to limit the scope of examiner questioning by specifying such limitation in the written stipulation. However, any violation of the limitation which resulted in a confession or admission (particularly to a heinous crime) might force the courts to balance the public interest in punishing criminals against the public interest in enforcing or interpreting stipulation contracts strictly against the state. The result of such a balancing test is at best uncertain and at worst disastrous for the client.

74. See Note, The Emergence of the Polygraph at Trial, 73 COLUM. L. Rev. 1120, 1134-36 (1973), for a discussion of cases. In State v. Watson, 278 A.2d 543 (N.J. Hudson County Ct. 1971), the court permitted the defendant to introduce exculpatory polygraph results at a post-trial sentencing proceeding. The court in People v. Cutter, 12 CAM. L. REP. (BNA) 2133 (Cal. Super. Ct. 1972), admitted polygraph evidence at a suppression hearing on the issue of whether the defendant had consented to a search. In In re Stenzel v. B., 336 N.Y.S.2d 839 (Niagara County Fam. Ct. 1972), the defendant was allowed to introduce test results in a paternity suit to show the mother's deception regarding her sexual behavior. Lastly, the court in Walther v. O'Connell, 339 N.Y.S.2d 386 (Queens County Civ. Ct. 1972), ordered a polygraph test to resolve directly conflicting testimony regarding the making of a loan where no witnesses were present.
cially in civil litigation, since civil trial courts often face difficult credibility-of-witness questions. Also, nonjury trial courts traditionally have admitted types of evidence which never have been permitted before a jury. Developments in the jury trial area have primarily been in federal courts.

In four recent cases, federal district courts have admitted unstipulated polygraph evidence: United States v. Ridling, United States v. Zeiger, United States v. Dioguardi, and United States v. Hart. Decided in the same week, Ridling and Zeiger were reported as landmark decisions signaling the demise of the Frye rule. Later, however, Zeiger was reversed per curiam by the appellate court.

A well-reasoned opinion, Ridling is good precedent because the polygraph evidence offered was on the ultimate issue. Ridling involved a perjury prosecution. The court made two findings regarding polygraph evidence. First, the court implicitly rejected the Frye rule, insofar as it is based on the unreliability of the polygraph. The court found this conclusion to be at odds with the reality of polygraph instrumentation and technique, which have greatly improved in the past decade. Second, the court found that the process by which scientific evidence becomes admissible at trial is a bifurcated procedure. Initially, the underlying scientific theory must be proved at each trial through expert testimony. Then, as the gradual, cumulative effect of such testimony serves to establish the theory firmly in the judicial consciousness, it becomes an appropriate subject for judicial notice. Based on the evidence presented, the Ridling court concluded that the present state of the art had reached the first stage and that test results should be admitted after establishment of the reliability of the process by expert testimony.

The court went even further toward debunking the traditional objections to polygraph evidence, stating that under the Federal Rules of Evidence the relevancy of polygraph evidence is as great as that offered by other scientific tests such as radar, breathalyzer,

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77. Crim. No. 72-1102 (E.D.N.Y. 1972), cited in The Emergence of the Polygraph at Trial, supra note 74, at 1129. Although this case is not officially reported, The Emergence of the Polygraph at Trial, supra note 74, at 1133, contains a good discussion of the case based on information gleaned from the press, the court record, and discussions with the trial court's clerks.
79. See The Emergence of the Polygraph at Trial, supra note 74, at 1129.
80. 475 F.2d 1280 (D.C. Cir. 1972).
81. 350 F. Supp. at 95.
and blood tests. Additionally, the court said that the taking of a polygraph test after receiving Miranda warnings constitutes a waiver of the privilege against self-incrimination. The court said too that although polygraph evidence is arguably hearsay, it should be admissible nevertheless under an exception to the hearsay rule because of its high degree of trustworthiness.

The Ridling court admitted that the inadequate professionalization of polygraph examiners created a threat of fraud on the court. Finding a practical solution by exercising its power to appoint experts, the court held that both parties must meet and recommend three competent polygraph examiners, other than those offered by the defendant. The court would then choose one or more of these experts to administer a polygraph test to the defendant. If the results clearly showed that the defendant was lying or that he was telling the truth, they would be admitted. Should the test results be ambiguous or should the defendant refuse to cooperate in the tests, no polygraph evidence would be admitted. This solution to the examiner reliability problem is certain to gain adherents as more courts begin to face these issues.

Charged with falsifying a loan application, the defendant in Dioguardi attempted to introduce polygraph results supporting his innocence. In an approach similar to that used in Ridling, the Dioguardi court ruled that if the defendant and another man who had confessed to the crime would both submit to tests given by a court-appointed expert, both results would be admissible before the jury. Apparently the results of the court-appointed expert matched those offered by the defendant because the government dismissed the indictment.

In Zeiger, the defendant was charged with armed assault with intent to kill. In contrast to the tightly drawn admissibility requirements of Ridling and Dioguardi, the Zeiger trial court allowed the defendant to introduce the results of a test given to him by the Washington, D.C. police prior to his arrest. Noting that the government did not refute two defense psychologists' testimony that the

82. Id. at 96.
83. Id.
84. Id. at 99.
85. Id.
86. Id.
87. For a discussion of the facts of this unreported case, see The Emergence of the Polygraph at Trial, supra note 74, at 1133.
88. Id.
89. Id.
90. 350 F. Supp. 685.
polygraph was at least eighty-five percent reliable, the court found
the results admissible despite the defendant's written stipulation
that the test results would not be introduced at his trial. On ap-
peal, Zeiger was reversed per curiam without an opinion. Hence, the
grounds for reversal are unknown.

As in Zeiger, the prosecution in Hart had given a polygraph exam
but did not want to disclose the results. Hart involved the prosecu-
tion of two former federal narcotics agents on charges of soliciting
bribes. Unlike the Zeiger situation where the government tried to
block admission of the defendant's test results, in Hart the govern-
ment tried to suppress the results of a polygraph test given to its
principal witness. The witness was a confessed narcotics dealer, and
the results of the test showed that he was lying. During cross-
examination, the court learned that the witness had been given a
polygraph test. When it discovered further that the government had
known the results prior to putting the witness on the stand, the
court declared a mistrial. The court also ruled that the government
had to explain why it had given the witness a polygraph exam and
then disregarded the results.

The Hart court relied on Brady v. Maryland, in which the
United States Supreme Court held that the government has a duty
to disclose any exculpatory evidence. The Hart court reasoned that
the government's duty to disclose extended to any investigations
which indicated that a government witness was lying. Actually,
the only ruling on admissibility was the denial of a motion to intro-
duce the results of tests the defendants had taken to prove their
innocence. However, the Hart court's ruling can be seen as an
indirect judicial recognition of the polygraph's validity. By placing
a burden on the government to justify its failure to proceed accord-
ing to the test results of witnesses, the court showed confidence in
the accuracy of polygraph readings. Furthermore, the extension of

91. Id. at 690, 692.
92. See The Emergence of the Polygraph at Trial, supra note 74, at 1132.
93. One commentator who has studied the briefs filed by both parties feels that the
reversal may have been grounded on an objection to the circumstances surrounding this
particular test, although he does not elaborate further as to the source of the problem. Id. at
1133.
94. 344 F. Supp. at 523.
95. Id.
96. Id. at 524.
98. 344 F. Supp. at 523.
99. Id. at 524. The court stated that with regard to admission of the defendant's test
results, it felt bound by earlier decisions, particularly the definite statement by the Second
Circuit Court of Appeals in United States v. Bando, 244 F.2d 833, 841 (2d Cir. 1957).
the *Brady* rule will offer defendants added protection against arbitrary and bad faith prosecutions which otherwise might be conducted without fear of exposure.\textsuperscript{100}

In summary, the *Zeiger* and *Dioguardi* decisions, although encouraging for polygraphy proponents, are not helpful as precedent because the former was overruled and the latter was unreported. The *Ridling* and *Hart* decisions, however, are both well reasoned and should provide persuasive support for trial courts presented with the opportunity to admit unstipulated polygraph evidence over objection through expert testimony.

V. Conclusion

Formerly considered a "black art," polygraphy now stands closer to the threshold of complete judicial acceptance. Although the majority of courts still erroneously apply the "general acceptance" standard to polygraph evidence, more than one-third of the states now admit polygraph evidence pursuant to stipulation.\textsuperscript{101} As ardent advocates continue to present cautious courts with evidence of recent state-of-the-art advances,\textsuperscript{102} the trend toward universal admission of polygraph evidence should accelerate sharply.

Lawyers should welcome polygraphy's entrance into the judicial arena, for reliance on polygraphy could eliminate spurious or bad faith claims and testimony, thereby enhancing the integrity of the judicial process and reducing Bakunin's remark that "jurisprudence [is] the science of the human lie" to a mere historical curiosity.\textsuperscript{103}

\textsuperscript{100} Note that had the *Brady* argument been advanced in *Zeiger*, it is possible that the admission of the polygraph test given to the defendant by the police might have been upheld.  
\textsuperscript{101} See note 46 supra.  
\textsuperscript{102} For a thorough discussion of the latest developments in polygraphy technique, instrumentation, and research, see *T. Reid & F. Inbau, Truth and Deception* (2d ed. 1977). This book contains an excellent section on polygraph law and extensive bibliographies.  
\textsuperscript{103} See note 3 supra.