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Fred E. Inbau

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## DETECTION OF DECEPTION TECHNIQUE ADMITTED AS EVIDENCE

FRED E. INBAU†

As the result of an agreement and stipulation entered into between prosecution and defense counsel in a Wisconsin case, *State v. Loniello and Grignano*, Judge Clayton F. Van Pelt of the Circuit Court of Columbia County recently admitted in evidence so-called "lie-detector" records together with expert testimony concerning their interpretation. The instrument which was used in making the tests upon the defendants is known as the Keeler Polygraph,<sup>1</sup> and the witness who conducted the examinations and who explained the records and his interpretation thereof to the jury was Professor Leonard Keeler of the Scientific Crime Detection Laboratory of Northwestern University School of Law.

This case represents, to the writer's knowledge, the first time in which a court of law has permitted the use of such evidence for the consideration of a jury.<sup>2</sup> Upon several occasions, however, results of this nature had been utilized by judges in civil and minor criminal cases.<sup>3</sup>

At the time when the Polygraph tests were made upon the de-

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†Instructor of Police Science, Scientific Crime Detection Laboratory, Northwestern University School of Law. Raymond Fellow in Criminal Law, Northwestern University School of Law (1932-1933).

<sup>1</sup>For detailed description of this instrument see Keeler, L., "A Method for Detecting Deception," 1 Am. J. Police Sci. 38 (1930); and Inbau, F., "The 'Lie-Detector,'" 40 Scientific Monthly 81 (1935).

<sup>2</sup>Since then, on May 18, 1935, a Chicago physician was permitted to testify, and without any stipulation to that effect, before a jury in a civil case as to deception tests conducted by him upon his client, the defendant in a personal injury damage suit. According to the physician's testimony, his client was not guilty of the alleged acts, but the jury rendered a verdict to the contrary. *Reuter v. Hillberg*, tried in the Circuit Court of Cook County, before Judge John W. Preihs.

<sup>3</sup>In 1924 one of W. H. Marston's assistants testified in two Indiana cases, involving assault and battery, before an Indianapolis city court judge as to the results of deception tests conducted in open court upon three defendants. A Tycos sphygmomanometer was the instrument used for this purpose, and the tests were made on each individual as he testified from the witness stand. According to a personal communication from Mr. Marston, the trial judge's findings accorded with those expressed by the examiner.

Members of the Scientific Crime Detection Laboratory staff have been called upon by trial judges in several cases, to conduct Polygraph examinations, the results of which were used in arriving at a decision. See report of one such case in 1 Am. J. Police Sci. 381 (1930).

defendants, Cecil Loniello and Tony Grignano, they were awaiting trial on a charge of assault with intent to murder. Some of the circumstances surrounding the crime in question tended to show that the two defendants were among a party of four individuals at the time when one of their number shot and seriously wounded a sheriff who was attempting to frustrate their escape from the scene of a robbery which the group had committed in a neighboring county. Practically all the state's evidence was of a circumstantial nature. The principal defense consisted of an alibi.

The probative value of all the evidence did not indicate with any degree of predictable certainty whether or not a conviction or acquittal would result. This state of mutual uncertainty seems to have been the impelling motive for so strange and novel an agreement as that entered into between prosecution and defense counsel. The text of this stipulation, dated February 1, 1935, and signed by the parties mentioned therein, is as follows:

"It is hereby stipulated and agreed by and between the State of Wisconsin, by Arno Miller, District Attorney and H. B. Rogers, Special Prosecutor, and the defendants, Tony Grignano and Cecil Loniello, and Darrell MacIntyre and Gordon Dawson, their attorneys:

"1. That the state shall procure and pay for the services of Mr. Leonarde Keeler to administer the polygraph tests to each of the above named parties, with respect to the charges now pending against them in the Circuit Court for Green Lake County.

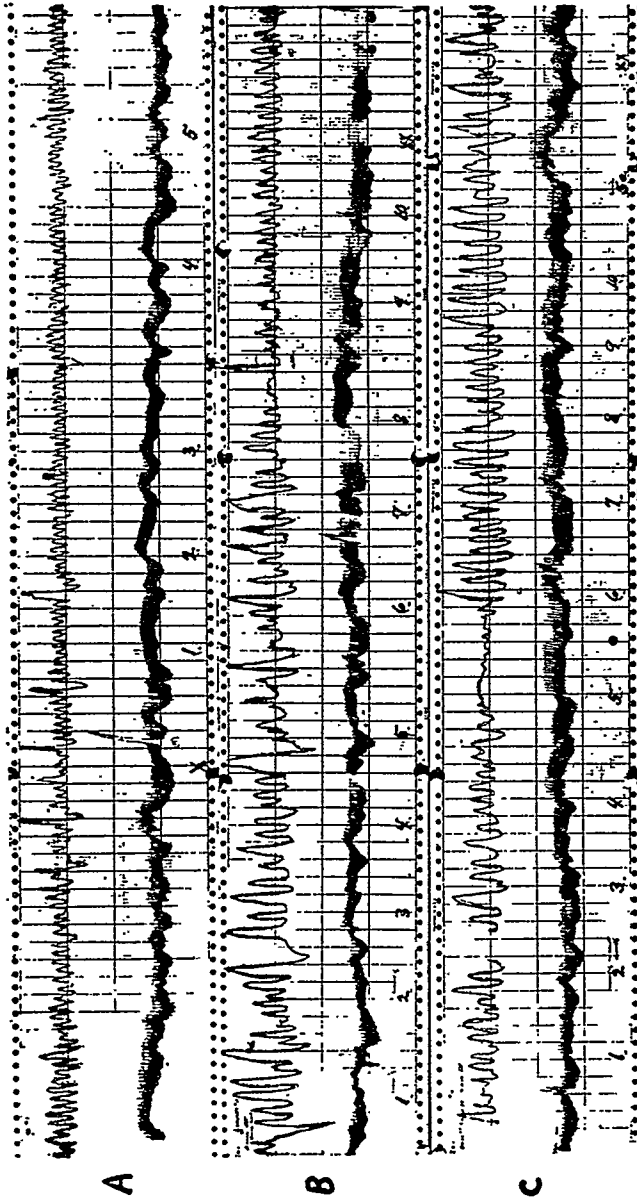
"2. That the State of Wisconsin and each of the defendants hereby waive any objection which they might have to the admissibility in evidence of the results of such tests and the methods used in the administering of such tests and the experience with respect thereto.

"3. That the evidence so taken may be used by either party to be considered by the jury, together with all the evidence in the case against each of such defendants upon the trial of the charges against each of them.

"4. That the State shall pay the witness fees for the attendance of Mr. Leonarde Keeler at the trial upon the request of either party.

"5. That in addition to the graphs showing the results of such tests, it is expressly agreed that said Leonarde Keeler may testify as an expert as to the conclusions reached by him in the interpretation of such graphs."

The following day, February 2nd, each defendant was given a series of Polygraph tests. The results, as interpreted by the examiner, indicated not only a general consciousness of guilt, and deception to pertinent questions of a general nature, but also, to some extent, the



App.  $\frac{1}{2}$  actual size.  
Time interval for  
each record:  $6\frac{1}{2}$  ms.

PLATE I.

*Cecili Lonietto's Polygraph Records:* The upper curve in each record indicates the respiratory changes; the lower curve the pulse wave and changes in blood pressure. On (A) observe the sudden increase in blood pressure at 4, when the subject was asked the question "Did you have anything to do with the robbery in Baraboo?" Similar responses were given on this first test to questions 6 and 7 (not shown on plate), pertaining to the shooting of the sheriff. On (B) observe particularly the general irregularity in the subject's respiratory curve up to and including 8, when he was asked the question "Did Tony Grignano drive the automobile?" and then notice the regularity and uniformity in the breathing from that point on. Also observe the gradual, though irregular, increase in blood pressure up to 8, after which there is a decrease to the subject's "normal." On (C) observe the increase in blood pressure, the change in pulse frequency, and the suppression in respiration at 5, when the subject was asked whether he, Lonietto, shot the sheriff. The same question was repeated at 5a. Lonietto's average pulse rate for all tests was approximately 140. At times the pulse rate was as high as 160. (This very rapid pulse accounts for the fact that the pulse wave ink tracings do not show up more clearly on these reduced plates.) The pulse rate at 5 on "C" dropped from 140 to 84 for an interval of 15 seconds.

particular part played by each defendant in the commission of the crime. The latter statement may seem somewhat paradoxical and cannot be fully appreciated without referring to the accompanying photographs. The Polygrams marked "A" on Plates I and II contain the respiratory, pulse wave, and blood pressure responses to various questions pertaining to the shooting and to the robbery. That portion of each record up to the point marked "x" indicates the subject's "normal," during which time no questions were asked. At that point the subject was directed to answer all questions by either "yes" or "no," reserving any explanatory remarks until completion of the test. (Previously, of course, he had been informed of the object and nature of the examination.) On "A" of Plate I, the only pertinent question was asked at (4); (1), (2), (3), and (5) indicate stimulus points of irrelevant question, *e. g.*, Is your name —?, Do you live in Madison?, Did you have some breakfast this morning?, *etc.*, which were asked for the purpose of further ascertaining the subject's "norm." Similarly on "A" of Plate II, (4) and (6) are points of stimulus with relevant questions; all others being of an irrelevant nature.

The Polygrams marked "B" and "C" contain the responses given during what might be termed "name tests," when an attempt was made to ascertain which of ten suspects, including the defendants, drove the automobile and which one shot the sheriff. For the purpose of such an examination, a list containing the names of these individuals, all known to each defendant and some of whom were also alleged to be implicated in the crime, was exhibited to the subjects and at points numbered from one to ten those names were mentioned in the question "Did — drive the automobile?" or "Did — shoot the sheriff?" "B" on both plates contains the responses to the name test as regards the driving of the automobile, while "C" concerned the shooting of the sheriff.

By referring to the explanations appearing under each plate, the reader will observe that in Loniello's name test "B" (of Plate I) (pertaining to the driving of the automobile) the greatest change or deviation from his "normal" occurs at (8), where he reaches his "peak of tension" in blood pressure—due doubtless to the anticipation of being asked the question to which he expected to lie—and at which point there occurs a distinct and definite change in his respiratory curve. At (8) Loniello was asked whether Grignano drove the automobile; at (5) whether he, Loniello, drove the automobile, where no change occurred, relatively speaking. From this response at (8)

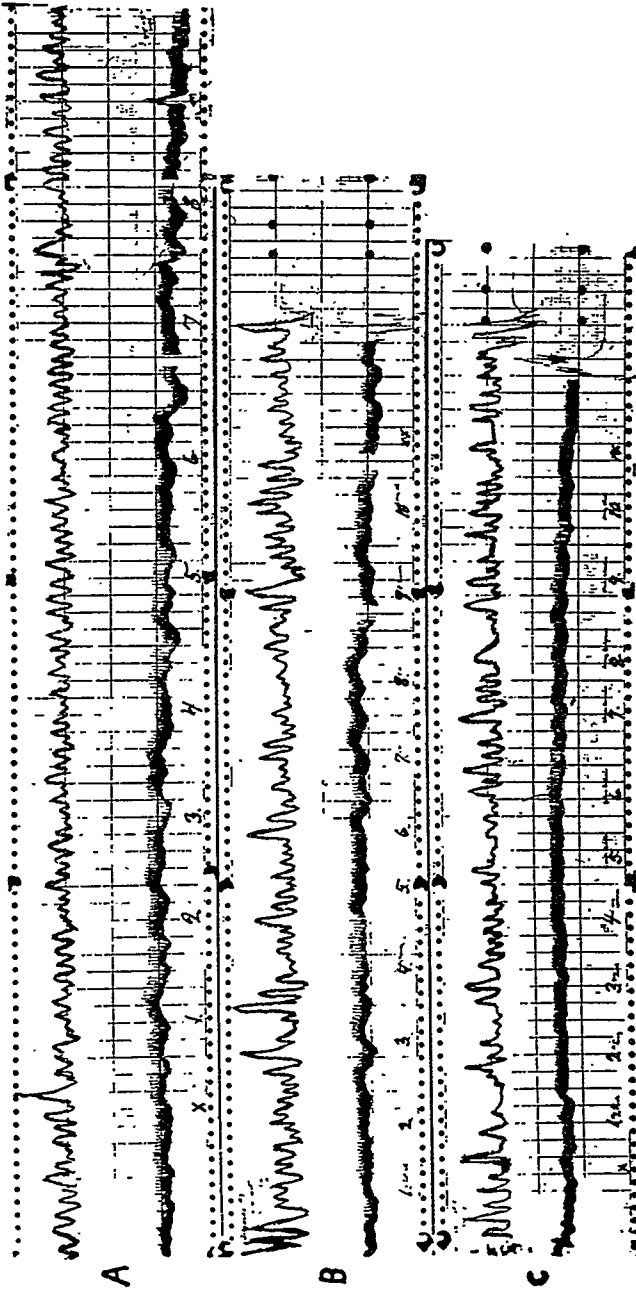


PLATE II.

*Tony Grignano's Polygraph Records:* Observe on (A) the responses to questions 4 and 6: "Did you have anything to do with the drug store robbery in Baraboo?" and "Were you with a group of fellows on the night when the sheriff was shot?". Approximately twelve seconds after the subject replied "no" to both questions his blood pressure decreased rapidly for ten or fifteen seconds, as indicated by the sharp decline in the general curve. On (B) there is shown a gradual increase in blood pressure up to and including 8 ("Did you, Tony Grignano, drive the automobile?"), where the subject had reached his peak of tension, so to speak; then comes a sudden decrease in pressure, followed by a more gradual decrease to a relatively normal condition. In addition to the blood pressure reaction, there appears on the record an indication of suppression in respiration at that point, which is followed by considerable relief (heavier breathing). At 5 on (B) observe the suppression in respiration ("Did Lonelle shoot the sheriff?"), and also the "relief" at 6. Grignano's average pulse rate during each test was approximately 120.

it was inferred that Grignano drove the automobile. On "C" of Plate I appears Loniello's responses to the name test questions pertaining to the shooting. This time his greatest deviations occur at (5)—"Did you, Loniello, shoot the sheriff?"—from which fact it was inferred that Loniello shot the sheriff.<sup>4</sup>

The foregoing deductions seem to be borne out by the duplication of these responses in Grignano's name test records, "B" and "C" of Plate II. In "B" Grignano responds to his own name (8) as the driver of the car, and on "C," particularly in the respiratory curve, to Loniello's name (5) as the gunman.

At the trial of the defendants, on February 7th, Judge Van Pelt permitted Mr. Keeler to display to the jury the records pictured on Plates I and II, and also to explain his interpretation, outlined above. Then, for the benefit of the jury and in order to elicit the witness' opinion as to the significance which he thought they should attach to the Polygrams and his interpretation thereof, Judge Van Pelt propounded the following question which resulted in the dialogue quoted below:

Judge Van Pelt: Would you act upon the results of these tests alone, if they related to the most important affairs of human life?

Mr. Keeler: I don't know just how to answer that question.

Judge Van Pelt: I will state it this way. You have a result in this case, haven't you?

Mr. Keeler: Yes.

Judge Van Pelt: And that result is based upon your detector?

Mr. Keeler: Yes.

Judge Van Pelt: And your experience with the detector?

Mr. Keeler: Yes.

Judge Van Pelt: You have made as a result definite findings?

Mr. Keeler: Yes.

Judge Van Pelt: And would you give those definite findings the standing and the weight to decide the most important affairs of your life?

Mr. Keeler: I wouldn't want to convict a man on the grounds of the records alone. Does that answer the question?

Judge Van Pelt: I think it does. You consider the result, then, an element in the case?

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<sup>4</sup>Previously it was supposed by the police that another suspect had shot the sheriff.

Mr. Keeler: True.

Judge Van Pelt: To be considered with the other circumstances and facts in the case?

Mr. Keeler: That is right; we do.

The idea expressed in the foregoing opinion found further emphasis in the remarks made by Judge Van Pelt in his charge to the jury:

"Previous to this trial, each defendant submitted himself to examination by the Keeler Polygraph. This examination was conducted by Leonarde Keeler, at Portage, Wisconsin, by a proper stipulation between the State and the defendants, and Mr. Keeler was permitted to tell you the results of the examination in question. This testimony does not tend to show or prove any element of the crime charged. It at most and best only tends to show that at the time of the examination of the defendants they were not telling the truth. Now, Members of the Jury, it is for you to give it such corroboratory weight and effect as you think it fairly and reasonably entitled to receive."

The jury found both defendants guilty of assault regardless of human life, in a manner evincing a depraved mind, without any premeditated design to effect death.<sup>5</sup> Loniello received a sentence of from one to eight years in the penitentiary, and Grignano one to six. No appeal was taken by either defendant.

Although for many purposes a conviction is tantamount to unquestioned proof of the commission of a crime, the writer realizes the limitations of that principle when applied to the present case. Standing alone, and for the purpose of scientific evaluation, the conviction does not absolutely verify Professor Keeler's interpretation of the defendant's Polygrams—especially in view of the fact that the same interpretation constituted part of the evidence utilized by the jury in arriving at a verdict. Nevertheless, even though considered in light of this limitation, the Polygrams pictured on Plates I and II, as well as the others obtained but not shown herein,<sup>6</sup> offer valuable material for analysis.

<sup>5</sup>After the verdict had been received, the Court interrogated the jury as to whether or not the Polygrams as explained by Professor Keeler were of any assistance to them, and if so to what extent. This interrogatory was put to each juror and the response from each was identically the same, viz., that the Polygrams and the testimony were of considerable help to them in determining the credibility of not only the defendants themselves, but also of the other witnesses for the state who contradicted much of the testimony given by the defendants. According to Judge Van Pelt, who informed the writer of the jury's reaction as outlined herein, the jury was of "an exceptionally fine and high type. Among them were two school teachers, and several small business men and farmers—a real cross section of American life."

<sup>6</sup>Five others of Loniello's Polygrams, and seven more of Grignano's.



In each set of Polygrams may be found a combination and variety of symptomatic changes not ordinarily present in any one individual's Polygrams. For instance, observe Loniello's response to question 5 on "C," consisting of respiratory suppression, sudden increase in blood pressure, and very apparent change in pulse frequency. Also observe the marked difference between that response and the one at 8 on "B." To the trained examiner, however, both are equally indicative of deception. Then, in Grignano's Polygrams can be seen one of his characteristic responses in the nature of a delayed decrease in blood pressure rather than an immediate increase after untruthful answers; his respiratory responses, however, are quite similar to Loniello's, though not so accentuated. To the untrained individual these variations, as well as the responses themselves, may appear quite confusing, but to the experienced examiner, who is in a position to evaluate them on the basis of numerous previous case histories, they are highly significant.<sup>7</sup>

These two sets of Polygraph records illustrate quite clearly the principle that this method is nothing more nor less than a technique—a diagnostic method—for detecting deception.<sup>8</sup> Moreover, they should present, by their obvious complexity, ample proof of the utter folly of an untrained individual considering himself qualified to detect deception merely because he has available an apparatus for recording one or more of these physiological changes. The word "untrained" is here used in a restrictive sense, and by it is meant *untrained in methods of detecting deception*. Whatever other qualifications an individual may possess, and regardless of their nature, it is essential for him to acquire specific training in the technique, either by years of experimentation and study, if working alone and unassisted, or by an extended period of instruction under a qualified examiner, and this too, followed by further experimentation and study.

Just as an aftermath to any new development, incompetent and unscrupulous individuals will appear upon the scene with their "lie-detectors." Already several such persons have made known their presence. They have become possessed of instruments recording, in some shape or form, one or more physiological phenomena, and after acquiring a little skill in the mechanical operation they attempt to

<sup>7</sup>The term "previous case histories" is here used to include experimental cases conducted under controlled conditions, and also actual cases involving the examination of individuals suspected of crimes ranging from homicide to petty larceny, in which the Polygraph examinations were followed by such convincing, substantiating evidence as to leave little or no doubt as to the accuracy of the examiner's interpretation.

<sup>8</sup>See Keeler, L., "Debunking the 'Lie-Detector,'" 25 J. Crim. Law 153 (1934).

hold themselves out as "experts." If given the opportunity they will "interpret their results" as best suitable for the particular occasion. Because of this objectionable feature, if for no other reason, it is perhaps highly desirable for courts of law to defer complete judicial recognition of this technique for some time to come, and to restrict its court application to cases such as the present one, in which the stipulation prerequisite will serve as a safeguard and as a deterrent to unethical practices of incompetent examiners. A lawyer, whose client's interests are at stake will in all probability thoroughly investigate the character and qualifications of an examiner before entering into any agreement with opposing counsel to permit him to conduct a deception test and to testify as to his results. This same privilege and opportunity would not be accorded the trial judge who may be confronted with the problem of passing upon the qualifications of such a witness—in the event judicial precedent permitted him to admit testimony of this nature in the absence of a stipulation or agreement.

Every day more genuine interest is being aroused, and more experimentation and investigation is being conducted in the field of detecting deception by conscientious, honest, and otherwise generally qualified individuals. Eventually a sufficient number of them, practicing this art with caution and in a truly scientific spirit, will justify its universal application. In due course of time, after the technique "has gained general acceptance in the particular field in which it belongs,"<sup>9</sup> the judiciary will absorb it just as it has accepted other scientific developments— but not without the same degree of caution.<sup>10</sup>

<sup>9</sup>See *Frye v. United States*, 293 Fed. 1013, 1014, 34 A. L. R. 145, 146 (D. C., 1923).

<sup>10</sup>For a discussion of *Frye v. United States*, *supra* note 9, and *State v. Bohner*, 210 Wis. 651, 246 N. W. 314 (1933), in which cases the admissibility of "lie-detector" testimony was denied, see Inbau, F., "Scientific Evidence in Criminal Cases: II Methods of Detecting Deception," 24 J. Crim. Law 1140 at pp. 1148-1150. In the *Bohner* case the defendant had not submitted to any deception test and merely offered, in support of his testimony, to submit to such an examination, which offer was refused by the trial court. As to the effect of the constitutional safeguard against self-incrimination upon "lie-detector" evidence, see *ibid.* at pp. 1150-1153.