
THE ANALYSIS OF JACK RUBY'S
POLYGRAPH EXAMINATION

Submitted by

Richard O. Arther, President, Scientific Lie Detection, Inc., New York, N.Y., and director, National Training Center of Polygraph Science, New York, N.Y.

Charles R. Jones, President, Polygraph Division, Lincoln M. Zonn, Inc., New York, N.Y.

Benjamin F. Malinowski, President, Malinowski Polygraph Services, Inc., Savannah, Ga.

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INTRODUCTION*

(1) On July 18, 1964, Jack Ruby voluntarily took a polygraph examination to test his truthfulness. Even though the Warren Commission disclaimed any reliance on the results of the test, (1) the committee believed that popular interest in such tests, as well as the possibility that new investigative "leads" might emerge, warranted a review of the examination.

(2) The committee was specifically prohibited by its own rules (2) from using either failure or agreement to take a polygraph examination, or the results of a polygraph examination, as a basis for fact-finding in any public hearing or report. Such restrictions did not apply, however, to a review of polygraph tests previously administered. The committee therefore engaged a panel of experts to review the Ruby polygraph examination to determine if it was properly conducted and analyzed.

A polygraph examination

(3) A polygraph examination records physiological responses to questions asked. The polygraphist attempts to design the examination in such a way that the truthful person will react to the control questions and the lying person to the relevant questions.

(4) The test structure must be constructed so that it poses a threat to both the truthful and untruthful person. The polygraphist attempts to determine the "psychological set" of the examinee. He tries to determine, by reading the physiological activity of the examinee in the polygraph charts, what questions or question areas pose the greatest threat to the examinee's well-being. A "psychological set" is "a permission disclaimed any reliance on the results of the test, (1) the son's fears, anxieties, and apprehensions, [which] are channeled toward that situation causing the greatest threat to the individual's well-being. He will tune in on that which is of a greater threat, and tune out that of a lesser threat." (3)

(5) Responses to questions are recorded on a polygraph chart, which consists of tracings produced by three different types of psychological reactions associated with the circulatory, nervous, and respiratory systems:

(6) 1. The breathing pattern is recorded by means of a rubber tube placed around the person's chest.

(7) 2. The Galvanic skin response is measured by placing the attachments on either the fingers or the palms.

(8) 3. Changes in blood pressure, heart beat and pulse rate are obtained by a standard blood pressure cuff placed around the upper arm.

*Materials submitted for this report by the committee's polygraph consultants were compiled by HSCA staff members G. Robert Blakey and Whitney Watriss.

- (9) Questions are broken down into three categories:
1. Relevant—those pertinent to the investigation.
 2. Irrelevant—hopefully meaningless, nonemotion-producing ones to get the person used to being questioned and giving answers.
 3. Control—nonrelevant to which it can be assumed the person will lie during the test. These provide a standard for comparing the responses to relevant questions. If a person reacts more to a proper control question than to the relevant questions, then he is considered to be truthful to the relevants. On the other hand, if he reacts more to the relevants than to the proper control question, he is considered to be lying to the relevants.
- (10) Relevant, irrelevant, and control questions are interspersed throughout the polygraph chart. The examination may consist of various series covering various relevant issues. Each relevant issue must be asked a minimum of two times in a series, but as many times as necessary to conclude that relevant issue successfully. Each series should have a minimum of two charts, but as many charts as necessary to conclude the relevant issues in that series successfully.
- (11) The procedure for a polygraph examination is as follows. The polygraphist first conducts a pretest interview, during which the test questions are read to the person exactly as they are going to be asked. It is vital that all questions be properly worded and discussed with the person. Then the actual test is conducted.

Ruby's polygraph examination

(12) Jack Ruby had repeatedly requested that he be examined with a polygraph, truth serum, or other scientific means to test his veracity.⁽⁴⁾ In his testimony before the Warren Commission on June 7, 1964, he stated, "I would like to be able to get a lie detector test or truth serum of what motivated me to do what I did at that particular time * * *."⁽⁵⁾ Chief Justice Earl Warren responded,

* * * if you and your counsel want any kind of test, I will arrange it for you. I would be glad to do that, if you want it. I wouldn't suggest a lie detector test to testify the truth * * *.⁽⁶⁾

Ruby repeated his request several times during his testimony.

(13) Following numerous discussions among attorneys for Ruby and his family and other interested parties,⁽⁷⁾ on July 18, 1964,⁽⁸⁾ Ruby⁽⁹⁾ took the examination signing a standard "Consent to Interview with Polygraph" form.⁽¹⁰⁾

(14) The following persons were present during the examination, in addition to the expert, SA Herndon: ⁽¹¹⁾

1. Arlen Specter, Warren Commission counsel;
2. Clayton Fowler, Ruby's attorney;
3. William R. Beavers, Ruby's psychiatrist;
4. James Woods, FBI special agent;
5. E. L. Holman, chief jailer;
6. Odell Oliver, court reporter.

(15) In addition to the above, Joe Tonahill, Ruby's other attorney, and William Alexander, assistant district attorney for Dallas County, Tex., were present at each of the 13 pretest interviews. ⁽¹²⁾ Clayton Fowler, Ruby's attorney, did not want Assistant District Attorney

William Alexander to hear Ruby's answers and insisted that Ruby not answer questions until the actual tests had begun and Alexander had left the examination room. (13) In some instances, however, Ruby did answer the questions during the pretest stage. Special Agent Hurdon had indicated that he preferred to have Ruby answer the questions during the pretest interview, as this was a generally accepted polygraph procedure. (14)

(16) The polygraph examination lasted from 2:23 p.m. to about 9 p.m. (15) Ruby was asked a total of 101 questions, broken into 13 series. A pretest interview was conducted before each question series, at which time the questions were explained to Ruby. They were often rephrased for the actual tests.

(17) The following are the relevant questions and answers from all 13 test groups comprising the Ruby polygraph examination:

Question. Did you know Oswald before November 22, 1963?

Answer. No. (16)

Question. Did you assist Oswald in the assassination?

Answer. No. (17)

Question. Are you now a member of the Communist Party?

Answer. No. (18)

Question. Have you ever been a member of the Communist Party?

Answer. No. (19)

Question. Are you now a member of any group that advocates the violent overthrow of the U.S. Government?

Answer. No. (20)

Question. Have you ever been a member of any group that advocates violent overthrow of the U.S. Government?

Answer. No. (21)

Question. Between the assassination and the shooting, did anybody you know tell you they knew Oswald?

Answer. No. (22)

Question. Aside from anything you said to George Senator on Sunday morning, did you ever tell anyone else that you intended to shoot Oswald?

Answer. No. (23)

Question. Did you shoot Oswald in order to silence him?

Answer. No. (24)

Question. Did you first decide to shoot Oswald on Friday night?

Answer. No. (25)

Question. Did you first decide to shoot Oswald on Saturday morning?

Answer. No. (26)

Question. Did you first decide to shoot Oswald on Saturday night?

Answer. Yes. (27)

Question. Did you first decide to shoot Oswald on Sunday morning?

Answer. Yes. (28)

Question. Were you on the sidewalk at the time Lieutenant Pierce's car stopped on the ramp exit?

Answer. Yes. (29)

Question. Did you enter the jail by walking through an alleyway?

Answer. No. (30)

Question. Did you walk past the guard at the time Lieutenant Pierce's car was parked on the ramp exit?

Answer. Yes. (31)

Question. Did you talk with any Dallas police officers on Sunday, November 24, prior to the shooting of Oswald?

Answer. No. (32)

Question. Did you see the armored car before it entered the basement?

Answer. No. (33)

Question. Did you enter the police department through the door at the rear of the east side of the jail?

Answer. No. (34)

Question. After talking to Little Lynn, did you hear any announcement that Oswald was about to be moved?

Answer. No. (35)

Question. Before you left your apartment Sunday morning, did anyone tell you the armored car was on the way to the police department?

Answer. No. (36)

Question. Did you get a Wall Street Journal at the Southwestern Drug Store during the week before the assassination?

Answer. No. (37)

Question. Do you have any knowledge of a Wall Street Journal addressed to Mr. J. E. Bradshaw?

Answer. No. (38)

Question. To your knowledge, did any of your friends or did you telephone the FBI in Dallas between 2 or 3 a.m. Sunday morning?

Answer. No. (39)

Question. Did you or any of your friends to your knowledge telephone the sheriff's office between 2 or 3 a.m. Sunday morning?

Answer. No. (40)

Question. Did you go to the Dallas police station at any time on Friday, November 22, 1963, before you went to the synagogue?

Answer. No. (41)

Question. Did you go to synagogue that Friday night?

Answer. Yes. (42)

Question. Did you see Oswald in the Dallas jail on Friday night?

Answer. Yes. (43)

Question. Did you have a gun with you when you went to the Friday midnight press conference at the jail?

Answer. No. (44)

Question. Is everything you told the Warren Commission the entire truth?

Answer. Yes. (45)

Question. Have you ever knowingly attended any meetings of the Communist Party or any other group that advocates violent overthrow of the Government?

Answer. No. (46)

Question. Is any member of your immediate family or any close friend, a member of the Communist Party?

Answer. No. (47)

Question. Is any member of your immediate family or any close friend a member of any group that advocates the violent overthrow of the Government?

Answer. No. (48)

Question. Did any close friend or any member of your immediate family ever attend a meeting of the Communist Party?

Answer. No. (49)

Question. Did any close friend or any member of your immediate family ever attend a meeting of any group that advocates the violent overthrow of the Government?

Answer. No. (50)

Question. Did you ever meet Oswald at your post office box?

Answer. No. (51)

Question. Did you use your post office mailbox to do any business with Mexico or Cuba?

Answer. No. (52)

Question. Did you do business with Castro-Cuba?

Answer. No. (53)

Question. Was your trip to Cuba solely for pleasure?

Answer. Yes. (54)

Question. Have you now told us the truth concerning why you carried \$2,200 in cash on you?

Answer. Yes. (55)

Question. Did any foreign influence cause you to shoot Oswald?

Answer. No. (56)

Question. Did you shoot Oswald because of any influence of the underworld?

Answer. No. (57)

Question. Did you shoot Oswald because of a labor union influence?

Answer. No. (58)

Question. Did any long-distance telephone calls which you made before the assassination of the President have anything to do with the assassination?

Answer. No. (59)

Question. Did any of your long-distance telephone calls concern the shooting of Oswald?

Answer. No. (60)

Question. Did you shoot Oswald in order to save Mrs. Kennedy the ordeal of a trial?

Answer. Yes. (61)

Question. Did you know the Tippit that was killed?

Answer. No. (62)

Question. Did you tell the truth about relaying the message to Ray Brantley to get McWillie a few guns?

Answer. Yes. (63)

Question. Did you go to the assembly room on Friday night to get the telephone number of KLIF?

Answer. Yes. (64)

Question. Did you ever meet with Oswald and Officer Tippit at your club?

Answer. No. (65)

Question. Were you at the Parkland Hospital at any time on Friday?

Answer. No. (66)

Question. Did you say anything when you shot Oswald other than what you've testified about?

Answer. No. (67)

Question. Have members of your family been physically harmed because of what you did?

Answer. No. (68)

Question. Do you think members of your family are now in danger because of what you did?

Answer. [No response.] (69)

Question. Is Mr. Fowler in danger because he is defending you?

Answer. [No response.] (70)

Question. Did "Blackie" Hanson speak to you just before you shot Oswald?

Answer. No. (71)

Interpretations of the polygraph examination

Dr. Beavers' testimony.

(18) The testimony of Ruby's psychiatrist, Dr. William Beavers, who was present during the examination, was taken by Specter immediately after the polygraph examination on July 18, 1964. (72) Beavers testified that he had examined Ruby 9 or 10 times and had diagnosed him as a "psychotic depressive." However, Beavers stated that on the day of the examination, the "depressive element" had diminished, (73) and that most of the time Ruby understood the questions and answered with an appreciation of reality. (74) The only questions that seemed to tap Ruby's underlying delusional state related to his opinion about the safety of his defense counsel or his family. (75) Beavers did caution, however, that he was not an expert in the area of "interrelationships between mental illness and the polygraph." (76)

Special Agent Herndon's testimony

(19) On July 28, 1964, Special Agent Herndon testified before the Warren Commission regarding his interpretation of the Ruby polygraph. (77) Referring to Beavers' testimony, which Herndon had heard on July 18, 1964, Specter questioned him about the validity of a polygraph examination of a psychotic depressive person as described by Beavers. Herndon responded that an examination of such a person would be inconclusive or invalid in view of the fact that a psychotic individual is divorced from reality, and the tracings of his polygrams could not be logically interpreted. (78)

(20) Specter then questioned Herndon about his interpretation of the polygraph examination based on the hypothesis that Ruby was in fact in touch with reality during the examination and understood the nature of the questions and the quality of his answers. Herndon testified that, assuming Ruby was mentally competent and sane, he would interpret the charts as indicating that there was no deception in Ruby's responses to the relevant questions in the examination, that Ruby answered all relevant questions truthfully. (79) During later testimony, when Herndon was questioned about specific questions, he again was careful to qualify his interpretation with the assumption that Ruby was of sound mind. Herndon made it clear that he would find the results inconclusive and the examination invalid in the event Ruby was not of sound mind. (80)

(21) Herndon did mention four factors that he believed should be considered in the overall evaluation of Ruby's polygraph examination. The factors involved the prior extensive interrogation of Ruby, the time elapsed since Ruby shot Oswald, the number of persons present during the polygraph examination, and the number of relevant test questions asked. Herndon stated:

Mr. SPECTER. Do you have anything to add which you think would be helpful to the President's Commission?

Mr. HERNDON. Yes. I would like to make a few additional comments with regard to this polygraph examination, in view of the fact that it was somewhat unique and unusual. I think these factors should be somewhat considered in the overall evaluation of the polygraph examination.

First of all, Ruby has obviously been extensively interviewed by law enforcement officers and by the Commission and other people, and there has been a considerable length of time lapse since the time that the instant offense occurred of him shooting Oswald. These factors of length of time and considerable previous interrogation would tend to detract or negate any specific or definite conclusion that could be rendered with regard to the polygraph examination. ♦

The fact that there were other personnel in the room would tend to negate a valid polygraph technique. However, here again I did mention that this did not appear to bother Mr. Ruby. But it should be considered and made a matter of record.

One other point I would like to mention, and that is the large number of relevant questions asked Mr. Ruby during this particular examination. This is not general standard procedure. However, I realize that the President's Commission wanted to cover many facets, and that it was mutually agreed upon that we would ask the questions that the Commission had originally drawn up for this particular interrogation. In normal polygraph procedure it is usual to keep the relevant questions down to perhaps several specific critical relevant questions and work strictly on those, and in this particular examination we had a large number of relevant questions to ask.

I think these are all factors that should be considered in the overall evaluation of Mr. Ruby's polygraph examination.

Mr. SPECTER. Thank you very much, Mr. Herndon. (81)

FBI memoranda

(22) Two FBI memoranda address the Bureau's interpretation of Ruby's polygraph. The first, dated July 20, 1964, (82) states that a preliminary review of the charts indicated that Ruby was not deceptive when denying that he knew Oswald or that he was involved in any conspiracy. The memo went on to note that this interpretation did not conflict with any of the FBI's prior investigations. The memo did caution, however, that if in fact Ruby had a "psychotic" personality, the test results should be considered inconclusive and not be relied on. The second memorandum, dated July 22, 1964, (83) repeated the same conclusion.

The Warren Commission's conclusion

(23) The Warren Commission stated in its report that it did not rely on the results of the Ruby polygraph examination in reaching its conclusions. (84) The commission noted that it had merely granted Ruby's request for such an examination. It published the transcript of the examination, as well as the transcript of the deposition of the FBI polygraph expert who administered the test.

Selection of the panel

(24) In August 1977, the committee decided to convene a panel of experts with no prior affiliation with the Kennedy (or the King) * case to review the polygraph examination. Recommendations for panel membership were invited from Walter F. Atwood, executive director of the American Polygraph Association in 1976, and Charles R. Jones, vice president of the American Polygraph Association in 1978.

(25) They suggested nine people who were asked to provide resumes; additional information was sought later. Each was also asked to provide a list of the leading polygraphists.

(26) The committee interviewed 19 prospective panel members and chose 3:

(27) Richard O. Arther—B.S., with honors, in police science, Michigan State University, 1951; M.A. in psychology, Columbia University, 1960. Arther has been in private practice in New York City since 1953. He founded Scientific Lie Detection, Inc., cofounded the National Training Center of Polygraph Science. He has taught at Brooklyn College, Seton Hall University, the John Jay College of Criminal Justice, and the Graduate School of Public Administration of New York University. He has authored over 200 professional articles and two books. Arther is a member of the Academy of Certified Polygraphists and the American Polygraph Association.

(28) Charles R. Jones—B.S. in education (major in social science); completed National Training Center of Polygraph Science in 1959. Jones has been an instructor at the police training school in Charleston, W. Va., and currently teaches at the Zonn Institute of Polygraph, Inc., in Atlanta, Ga. He joined the Lincoln M. Zonn firm in 1961. Jones is a member of the American Polygraph Association and was elected vice president in 1976.

(29) Benjamin Frank Malinowski—retired Army warrant officer, with a career in criminal investigation and polygraph examinations.

*The same panel was to conduct an analysis of the James Earl Ray polygraph examinations.

He has been an instructor at the U.S. Army Military Police School, Fort Gordon, Ga. He attended the National Training Center of Polygraph Science in 1966. From 1967 to 1969 he was an operations officer with the Southern European Criminal Investigations task force. In 1975, he founded the Malinowski Polygraph Service. He is a member of the American Polygraph Association, and a former director of the Georgia Polygraph Association; twice president of the Georgia Polygraph Association; author of numerous articles on polygraph and criminal investigations, and formerly president of the Zonn Institute of Polygraph. He is also a nationally recognized speaker on polygraph and criminal investigations.

Examination procedures

(30) On March 6, 1978, a letter was sent to each panel member informing him of the materials available relating to the Ruby polygraph. They were:

1. The original polygraph charts.
2. A stenographic transcript of the entire examination, including the pretest and posttest interviews.
3. Testimony of Dr. Beavers, given before the Warren Commission, concerning Ruby's medical condition at the time of the examination.
4. Testimony of FBI Special Agent Herndon, the FBI polygraph examiner, before the Warren Commission.
5. Expert medical testimony given at Ruby's trial.

(31) Each panel member was asked to review the list and inform the committee if they required all items or additional material. Each responded that the first four items were necessary and that the medical testimony at Ruby's trial would not be required. On May 19, 1978, copies of the materials other than the medical trial testimony were sent to each expert.

(32) The procedures were that: (1) Each polygraphist would conduct an independent examination of the materials; (2) the panel would then meet to discuss each member's findings; (3) a final joint panel report would be prepared and submitted to the select committee.

(33) The experts were asked to focus on the following major areas:

1. The circumstances surrounding the administration of the examination.
2. Any problems created by the medical condition, age, mental stability, et cetera, of the subject.
3. The procedure/technique used by the expert in administering the examination.
4. The analysis of the charts.

(34) The experts were told, however, that they should not feel confined by the above areas and should comment on any factor they considered relevant.

(35) On June 22, 1978, the three panelists and two committee staff members met at the Algonquin Hotel in New York City. The National Archives agreed to have the original charts taken to this meeting. At this time, the experts reviewed the original charts and discussed the polygraph examination. The panel was unanimous in its evaluation and agreed that Arther would be responsible for writing the panel's Ruby report, subject, of course, to the review and approval of the other two panel members. (85)

(36) The panel conducted its review using the state of polygraph technology in 1964. However, since the panel's review involved basic polygraph principles, the comments and conclusions are still timely.

REPORT OF THE POLYGRAPH PANEL

Crucial factors affecting the examination

(37) The panel noted the four factors mentioned by Herndon as having a detrimental effect on the examination: The time elapsed since the shooting; Ruby's extensive prior interrogation; the many people present during the examination; and the great number of relevant questions asked. (86)

(38) The panel believed these factors had a serious negative impact on the validity and reliability of the polygraph examination. Because Ruby had been extensively interrogated previously, Herndon should have been sure that the polygraph examination was very carefully conducted.

(39) When first approached by the Commission, Herndon immediately should have explained the polygraph's limitations. He should have refused to compromise the validity and reliability of the polygraph procedure by letting it become yet another interrogation of Ruby.

(40) Herndon himself considered the procedure to be more an interrogation than a polygraph examination, as seen in his testimony before the Commission with regard to test series 9:

Mr. HERNDON. Yes, there was at this point in the interrogation. Realizing the Commission had a large number of questions they wanted to ask, it was decided at this point, in view of the fact that we had asked the main critical questions, to proceed with what I call direct interrogation, that is that each and every one of the questions asked is a relevant question, and that there are no irrelevant questions or control questions asked. (87)

And again, discussing test series 9A, he testified:

Mr. HERNDON. This was done in order to save time inasmuch as the interrogation was becoming rather lengthy at this point, and Mr. Specter indicated he was anxious to proceed and to complete the rest of the questions that we had agreed upon with all those parties that were interested in this interrogation. (88)

(41) Note that in the above quotes Herndon uses the term "interrogation" four times, but not once does he use the term "polygraph examination." If the events of July 18 were considered an interrogation rather than a polygraph examination, the panel would be far less concerned with what it felt were gross abuses of basic polygraph principles. However, since Herndon rendered his opinions as a "polygraph examiner," the panel evaluated Ruby's charts as a polygraph examination.

(42) The panel was also very concerned about the number and movement of people in the examination room. During the pretest interviews, as many as 10 persons were present. Two left for the testing

phase, returning for the next pretest interview. Since there was a series of 13 pretests and then tests, such comings and goings certainly must have caused distractions.

(43) Herndon himself testified:

Mr. HERNDON. Normally during a polygraph examination the only ones in the room are the examinee and the examiner, and during Bureau proceedings we usually have another agent in the room out of sight that takes notes. It is considered an undesirable factor to have many people present in the room during a polygraph examination, particularly if these people are involved in any way in the case, such as the defendant's attorney or someone who has a personal and keen knowledge in the proceedings. In this particular instance, it appeared to me that Mr. Ruby divorced the presence of these people from his mind during his response to the questions. However, it should be considered a factor which is one that could tend to negate a valid conclusion with regard to chart interpretation. (89)

(44) The panel believes the presence of eight persons in the examination room seriously impaired the examination. Any momentary distraction during the examination could cause the examinee to react, thereby recording a "lie" reaction on the polygraph chart. Herndon could well think this reaction was a true reaction to a lie, especially when reviewing the charts at a later time. Further, the panel found that Herndon never repeated a relevant question. The possibility of uncorroborated reactions which are false becomes very crucial in the evaluation of the Ruby polygraph examination.

(45) Herndon should have insisted, long before the date of the examination, that the standard procedure be followed whereby only the polygraphist and the person are in the room. If others had a need to observe the examination, then a room with a one-way mirror, a sound system, and perhaps a recording device could have been used—all standard procedures since the 1930's. A recorder might also have eliminated the need for the presence of a reporter in the examination room. A recorder generally provides a more accurate record. The Dallas Police Department had available a specially prepared and equipped room which would have allowed for a much more professional and conducive atmosphere. (90)

(46) A third factor the panel finds impaired the Ruby polygraph examination concerned the number of relevant test questions asked. The panel members believe it showed total disregard of basic polygraph principles.

(47) The crux of every polygraph examination is the number of test questions and how they are worded. When the Ruby examination was conducted, the primary textbook on the subject was "Lie Detection and Criminal Interrogation," by Fred E. Inbau and John E. Reid (3d ed., 1953). This book recommends three relevant questions, since the more a person is tested, the less he tends to react when lying. That is, sooner or later, liars become so "test-tired," they no longer produce significant physiological reactions when lying. One panel member, Arther, said that in his 27 years of experience he had never heard of

a polygraph examination with more than 17 relevant questions. Yet, in the Ruby examination, Herndon asks some 55 relevant questions. As Herndon himself stated:

In normal polygraph procedure it is usual to keep the relevant questions down to perhaps several specific critical relevant questions and work strictly on those. (91)

(48) Further, the panel could see no need for the vast majority of the relevant questions. It considered most to be trivial in comparison with the major issues on which Herndon should have concentrated. For example, the following trivial and poorly worded relevant questions were asked:

1. Did you get a Wall Street Journal at the Southwestern Drug Store during the week before the assassination?

2. Did you go to the Dallas police station at any time on Friday, November 22, 1963, before you went to the synagogue?

3. Did any close friend or any member of your immediate family ever attend a meeting of any group that advocates the violent overthrow of the Government? (92)

(49) The panel concludes that Herndon should have insisted that the total number of issues covered be reduced to no more than four. The panel suggested, for example, that only the following four relevant test questions should have been asked to cover the critical issues (Herndon did ask questions similar to three of the areas):

Before last November 22, did you ever hear the name of Lee Harvey Oswald?

Did you murder Oswald to silence him?

Did anyone instruct you to murder Oswald?

Did you ever talk with Lee Harvey Oswald? (93)

Loss of control

(50) Numerous instances in the transcript of the Ruby polygraph examination indicate that Herndon completely lost control over the examination. The problem most often stemmed from the ad hoc participation of the observers in the conduct of the polygraph examination. (Of course, the panel found the number of observers itself to be detrimental to the examination.)

(51) As an example, the standard pretest procedure is to ask the person each question and allow for discussion and a response. This is done before any of the components are attached to the examinee. Herndon stated his intention to proceed in this manner, but upon objection from Ruby's attorney, Clayton Fowler, Herndon acquiesced, abandoning this most important aspect of the pretesting phase and disregarding an important polygraph principle. The applicable part of the transcript follows:

Mr. HERNDON. In other words, I am going to tell you what the question is going to be and you shall feel free to answer it "yes" or "no."

Mr. FOWLER. Excuse me, sir.

Mr. HERNDON. Certainly.

Mr. FOWLER. At this time, Jack, I request that in view of the fact that you're not hooked up, that you do not answer the

question and reserve those until such time as you will be on the machine.

Mr. RUBY. That's fine.

Mr. HERNDON. Then, we will just discuss the questions.

Mr. RUBY. Do it to your advantage, may I add.

Mr. HERNDON. I generally prefer in my practice with the polygraph to have the gentleman answer the question so that he knows he has already answered it, and as a matter of record, he knows that that question is coming along.

Mr. RUBY. Please let me do it, will you? [Addressing Mr. Fowler.]

Mr. FOWLER. [No response.]

Mr. HERNDON. I will bow to whatever Mr. Specter or counsel wants to do in this regard.

Mr. RUBY. Fowler, I hate to dispute with you, but let me do it this way?

Mr. FOWLER. Well, Jack, again, Mr. Alexander is here and again I tell you this—that the answers to some of these questions could be absolutely very detrimental to you.

Mr. RUBY. They can't be.

Mr. FOWLER. I'm talking about from a legal standpoint. Now, morally, I know how you feel and you want to do the best you can for the commission.

Mr. RUBY. I will.

Mr. FOWLER. But by the same token, this gentleman over here [referring to Mr. Alexander] represents the State, who at this time is not representing you. Now, if we could allow Mr. Alexander to have the benefit of the nature of the questions, with the exception of the answers—if this is what Jack wants—but I do not want Mr. Alexander to have the benefit of the answers.

Mr. SPECTER. The test may be conducted either way. As Mr. Herndon has explained, he has a slight preference to have the answers, but the ultimate decision on that is up to Mr. Ruby and his counsel. The commission will proceed in either manner.

Mr. RUBY. It's unfortunate that my attorney, Mr. Fowler, don't see as I do. I would like to give every cooperation without the slightest fraction of interference. That's why I requested that. You won't let me do it that way, huh, Fowler?

Mr. FOWLER. I'm requesting that you do not, Jack.

Mr. HERNDON. It will be no problem. (94)

(52) Other examples of Herndon's loss of control abound. For example, on one page of the transcript he makes only two short statements; (95) at another point, a discussion by the observers about one question occupies almost six pages and includes an argument between Ruby and his attorney, Fowler, about who should be present in the room. (96) At other points, Ruby is reminded by Fowler that he could be convicted of first-degree murder by telling the truth and that he should not even be taking the polygraph examination. And at still another point, Herndon seeks the advice of Warren Commission attorney Specter about the phrasing of a question. (97)

(53) A good example of an objectionable result that occurred because of Herndon's loss of control takes place as follows. Just before test series No. 4, Ruby's responses were very erratic. He appeared to have "gone to pieces." Herndon later attributed this to fatigue, citing this as "the first series where Mr. Ruby tends to show a little fatigue." (98)

(54) However, just before that series had started, Ruby had had a private conversation from 4:13 to 4:15 with another of his attorneys, (99) whom Ruby previously had not wanted in the examination room, as shown by this:

Mr. RUBY. Did you get your pants sewed up, Joe?

Mr. TONAHILL. It went through to my leg.

Mr. RUBY. That was a pretty rough brawl we had, wasn't it, Joe?

Mr. TONAHILL. Yes.

Mr. RUBY. Joe, I'd appreciate it if you weren't in the room. Can I ask you to leave, Joe?

Mr. TONAHILL. I'll be glad to leave, if you want me to, Jack.

Mr. RUBY. As a matter of fact, I prefer Bill Alexander to you, you're supposed to be my friend.

Mr. TONAHILL. Let the record show that Mr. Ruby says he prefers Bill Alexander being here during this investigation, who is the assistant district attorney who asked that a jury give him the death sentence, to myself, who asked the jury to acquit him, his attorney. (100)

(55) Ruby then had two off-the-record conversations with Alexander—from 4:15 to 4:18 and from 4:22 to 4:25, (101) followed by still another extremely long argument as to the wording of just one test question, with five people taking part in the discussion: (102) "Were you in the Dallas Police Department jail at the time Lieutenant Pierce's car drove out of the basement?" (103)

(56) The panel questioned Herndon's conclusion that it really was fatigue that caused Ruby to "go to pieces" on this particular test, believing it might have been due either to something said during the three private conversations or to the argument over the wording of that one question. Perhaps it simply was the chaotic nature of the entire situation.

(57) The panel believed that the participation of the observers and the various asides never should have been allowed by Herndon. The panel concluded that Ruby was probably distracted, both mentally and physically, making a difficult examination even more difficult to conduct successfully.

Other factors

(58) In addition to the factors discussed above which impaired the Ruby polygraph examination, the panel concluded that 10 additional factors, of perhaps less importance, further reduced the validity and reliability of the examination. These are as follows:

(59) 1. It is generally agreed that the best time to examine is in the morning, because then the great majority of persons are both physically and mentally "fresh." As the day progresses, a person normally tires. Since the polygraph mainly records physical change induced by mental stimulation, a tired person does not react to stimulation as well

as a rested person does. Although Ruby most likely was a night-oriented person as a result of his occupation as a nightclub owner, by July 18, 1964, normal prison routine no doubt had changed his orientation. The panel therefore concluded that the examination should have started early in the day, perhaps around 8 a.m. As it was, the examination started at 2:23 p.m., with the first test beginning at 3:10 p.m. (104)

(60) 2. When administering an extremely difficult examination, most experts advocate reexamination on a later date to check the reliability of the first examination, that is, will the same reactions be obtained on the reexamination? Ruby was never given a second polygraph examination, nor is there any indication that one was ever considered. After reviewing the charts, each panel member believed strongly that a reexamination was absolutely essential for at least three reasons:

(61) a. It is a basic and commonly accepted polygraph procedure.

(62) b. Herndon did not repeat relevant questions, thereby providing no possible corroboration of the results.

(63) c. All of the adverse factors working against the orderly conduct of the examination made the results of the examination suspect, at best.

(64) 3. The panel concluded that the polygraph instrument was either improperly adjusted, or defective, or both. It made three tracings, two of which are so totally inadequate that they appear to be defective. The breathing tracing is particularly poor, either because the sensitivity was maladjusted or possibly because the pneumograph tube was not properly placed on Ruby. The amplitude of the breathing tracing is not even minimally acceptable in any of the 13 tests. The panel found this to be a constant handicap in analyzing this extremely important tracing and interpreting the charts. Sufficient amplitude is critical because the polygraphist looks for changes in the breathing pattern. Often such changes are minute and simply do not appear when the amplitude is small to begin with.

(65) The panel found the galvanic skin response (GSR) tracing to be of minimal help in analyzing Ruby's charts. The main problem with the GSR in the first session (before the break) is a lack of sensitivity due to Herndon's setting the sensitivity at one-fourth of maximum. He decreased it to one-fifth for the third series of questions. The panel noted that it should have been tried at a maximum sensitivity prior to the first test, where probably it should have remained for the entire examination. Had the sensitivity been higher, the polygraph probably would have produced an adequate tracing, that is, one that the panel could analyze.

(66) The panel could provide no explanation for why Herndon decreased the sensitivity for the third series. In fact, generally recognized principles in 1964 called for the sensitivity to be continually increased.

(67) After the break, the examination commenced with series 5 through 11, with the sensitivity set at one-fifth of maximum.

(68) The panel concluded that during this entire session, the GSR was completely defective. At best the polygraph appeared to be in extremely poor condition. In an examination of this importance, a backup polygraph should have been available and, in the panel's view, should have been used. The examination should have been stopped until another polygraph could be obtained.

(69) 4. Herndon's definition of a "control" question goes far beyond the generally recognized definition, as discussed in the leading book of the day by Inbau and Reid. The "control" question, developed by Reid in 1943, is one similar but unrelated to the crime being investigated to which the expert knows the correct answer and to which the person will probably lie. If the person's reaction to a properly worded control is more pronounced than to the relevant questions, he is considered to be truthful. On the other hand, if his reaction to the relevant questions is more pronounced, he is considered to be lying to the relevant questions.

(70) If the control questions are properly worded, it is very possible that a person lying to the relevant questions will appear to be truthful.

(71) Herndon's control questions were not correctly worded. He defined a "control" question as one to which the person will have some emotional response. (105) Thus, he used such controls as:

1. Have you ever been arrested? (106)
2. Are you married? (107)
3. While in the service did you receive any disciplinary action? (108)
4. Have you served time in jail? (109)
5. Did you attend the synagogue regularly? (110)

(72) It is obvious that not one of the above questions is a control, as defined by Inbau and Reid. For example, to the question, "have you ever been arrested?", Ruby answered "yes." Therefore, it is not a lie, yet Herndon considered it to be a control question. (111)

(73) Further, Herndon violated a basic rule that surprise questions should never be used as controls. For example, while asking a series, he says, during the test, "have you ever been known by another name? Don't answer that question. Skip it. Just sit and relax." (112)

(74) Such talk by the expert should automatically prevent this question from being used in the chart analysis. Yet Herndon uses it as a control. He testified: "The only significant change physiologically during series No. 2 was in Mr. Ruby's response to the question, 'Have you ever been known by another name?', portrayed by an increase in his blood pressure." (113)

(75) Such a procedure can easily lead to a mistake, particularly in indicating a liar to be truthful. In fact, if one wants to generate a truthful response on the chart when testing a liar, one could ask a surprise question, then immediately give extensive instruction regarding it, and thereafter evaluate it as a control question. In such a situation, at least 95 percent of the liars will give a more intense physiological reaction than they will to the relevant question to which they are lying.

(76) 5. What Herndon considers to be irrelevant questions often do not meet the criteria for an irrelevant question. The generally accepted definition of an irrelevant question is a meaningless, nonemotional question which the polygraphist knows the person will answer truthfully, e.g., "Do you live in the United States", or "Right now are you in Texas?"

(77) It was difficult for the panel to determine if Herndon considered certain questions to be irrelevants or controls. In fact, he himself confused their distinction. For example, question 4 in series 3 is officially listed as an irrelevant ("Are you married?"), yet Herndon used it as one of his control questions. (114)

(78) Following are several examples of irrelevant questions, as indicated on Herndon's question sheets, which the panel concluded were improperly classified. The panel found these questions to be more relevant, at times, to the important issues than the questions Herndon had listed as relevant.

1. Is your last name Ruby? (Originally his name was Rubenstein, and Herndon asked this question even after being told that Ruby changed his name from Rubinstein.) (115)
2. Did you take any medication this morning?
3. Have you answered these questions truthfully?
4. Are your parents alive? (Both are dead, and after his father died Ruby went to the synagogue "consistently for 11 months, morning and evening.") (116)
5. Are you tired?
6. Do you intend to answer the questions truthfully?
7. Were you at one time employed by a union? (There was also a relevant question, "Did you shoot Oswald because of labor union influence?") (117)
8. Is everything you told the Warren Commission the entire truth?

(79) 6. It is customary to repeat every question at least on a second test. This is done in order to establish the consistency (reliability) of the polygraph reactions. This was not done in the Ruby examination. Therefore, there was no way for Herndon to establish the reliability of the relevant questions.

(80) Hence, the possibility that a "lie reaction" to a control was caused by something other than a lie remains an open issue. This is particularly important because there were so many possible distractions in the examination room.

(81) 7. Between tests, a polygraphist should not tell a person if the tracings indicate truthful or lying responses to the relevant questions. This is particularly important in case a liar has some method of "beating the lie detector." If he believes he is coming across as truthful, he is reassured that his method is working. Thus, he will feel less uneasy when he lies, producing less dramatic reactions.

(82) In spite of this, after completing the first series, Herndon told Ruby: "Mr. Ruby, there are two questions I want to ask you about on our first series." At this point he discussed only the questions having to do with Ruby's middle name and the question having to do with whether Ruby had ever been arrested. Herndon did not mention the relevant questions, which could easily have led Ruby to believe that he had "passed" the test in regard to the relevant questions. (118)

(83) Herndon finished the discussion of series 1 with the comment: "Mr. Ruby, you are now a veteran of the first series. You did real well. You cooperated very fine." (119)

(84) Such statements could easily be interpreted by Ruby as meaning that he seemed to be truthful (to the relevant questions), especially when Herndon stated, "You did real well."

(85) If Ruby had lied on the first test, he would have had good reason to believe he had beaten the polygraph. Such knowledge certainly would have reduced his fear of lying, hence his lying reactions would have been reduced in subsequent questioning.

(86) And again, just as the first series is ending (prior to the break at 4:45 after series 4), Herndon stated: "You've done very well thus far, Mr. Ruby, as far as cooperating on the examination." (120)

(87) 8. A great deal of thought and preparation is necessary to conduct a quality polygraph examination. When a case is complicated or the examination conditions adverse, more preexamination preparation is necessary.

(88) In the panel's opinion, Herndon appeared largely unprepared to conduct the Ruby examination. Herndon testified that he knew the issues the Warren Commission wanted covered. (121) However, it appeared that all questions were not prepared in written form before the day of the examination. For example, as the first phase of the examination was being completed, Herndon said: "We will have to prepare some more questions." Specter: "May the record show that Mr. Alexander and Mr. Tonahill are now back in the room, and we are going to take a brief recess." (122) The "brief recess" lasted 1 hour and 40 minutes, during which time Ruby apparently was left in the examination room. (123)

(89) 9. The panel concluded that Herndon often used techniques in conducting the polygraph examination which did not conform to generally recognized principles of polygraphy. An example is test series 3A, which apparently was a "searching peak-of-tension test." A searching peak-of-tension test usually contains six or seven logical questions on the same issue. The polygraphist does not know which one is actually true. It is hoped that the liar will give a lying reaction to the appropriate question, thus permitting the expert to learn information not previously known. This test is usually given to locate loot and/or weapons, learn the names of accomplices, determine the amount of money embezzled, et cetera.

(90) The panel found the wording of the basic question in this series—"When did you first decide to shoot Oswald?"—to be very poor. This question ignored the possibility that Ruby might have been ordered to murder Oswald. The panel also found other choices to be poor. For example, the possibility that Ruby may have decided to shoot Oswald on the previous Friday night or the next Saturday afternoon were not even asked.

(91) 10. It is generally agreed that the more a person is tested, the less responsive he becomes. If a liar is tested enough times, sooner or later, his reaction to lies will be no more intense than to control and relevant questions. He therefore will appear truthful when lying. For this reason, the great majority of the recognized polygraph techniques limit the number of test groups to five or less, with no more than two different series of questions. Most call for the entire examination to be concluded within 2 hours. Panel member Richard Arther, for example, uses just one series of four relevant questions, asked in three separate test groups.

(92) The Ruby examination consisted of 13 groups of questions, with the actual examination starting at 2:23 p.m. (124) and ending at 8:59 p.m. (125) Even though there supposedly was a break of 100 minutes, the testing should never have been resumed that day.

(93) Herndon himself recognized this:

MR. SPECTER. Is there any overall limitation on the amount of time that a person can appropriately take a polygraph examination?

MR. HERNDON. Yes; there is a limitation. Certainly if a person is interviewed with polygraph at great length, in

due time he is bound to become desensitized to the technique. In other words, the pressure on his arm and the technique itself becomes less valid as the increase in time proceeds.

Mr. SPECTER. Did Mr. Ruby ever become desensitized to the technique?

Mr. HERNDON. I believe in the last series of the first session, which I believe is series 4, Mr. Ruby showed some indications of becoming fatigued and displayed some tiredness in the charts. Also, I might add in the later phase of the examination, in the latter series, there was some indication that he was approaching this desensitization that I have mentioned before. (126)

(94) The panel concluded that the Ruby examination was far too long.

Chart analysis

(95) The panel concluded that the Ruby polygraph examination was probably invalid and unreliable. As discussed above, the panel found serious flaws in the examination procedures. The questions were especially poorly worded. The polygraph instrument itself was either incorrectly adjusted or defective in its operation. The panel could render no opinion regarding the examination results.

(96) Of the 13 test groups, the first and second are perhaps the most valid in that they were conducted when Ruby was still "fresh." Because of the importance of the relevant questions in these two tests, the panel has briefly summarized its opinion about them.

(97) The relevant questions on the first series and Ruby's answers were:

1. Did you know Oswald before November 22, 1963?

Answer. No.

2. Did you assist Oswald in the assassination?

Answer. No.

(98) Herndon concluded from his analysis of the charts that Ruby was truthful in answering these two relevant questions. He arrived at this conclusion by comparing Ruby's response to the control question (Have you ever been arrested? Answer: Yes.).

(99) As previously noted, the panel believed this to be an extremely poor control question.

(100) Herndon testified that Ruby's physiological response to this control question was recorded on the charts in terms of a "noticeable rise in his blood pressure." (127) The panel took issue with this conclusion because the rise in blood pressure occurred at least 7 seconds after Ruby answered. A response normally never occurs this long after the question. The typical reaction, would be in 1 or 2 seconds. Further, the panel noted that at the point of the rise in blood pressure, Herndon indicated on the chart (as "MF") that Ruby moved his feet. The panel believed that the rise in blood pressure most likely was caused by Ruby's movement and not his physiological reaction to the "control" question. This conclusion is corroborated by the fact that Ruby's breathing remained relaxed at the time of the rise in blood pressure, and the Galvanic skin response showed no reaction.

(101) In fact, the reactions to the preceding question—(Did you assist Oswald in the assassination?)—showed the largest valid GSR reaction in test series No. 1. In addition, there is a constant suppres-

sion of breathing and a rise in blood pressure at the time of this crucial relevant question. From this test, it appeared to the panel that Ruby was possibly lying when answering "no" to the question, "Did you assist Oswald in the assassination?" This is contrary to Herndon's opinion that Ruby was truthful when answering that question.

(102) The relevant questions on the second series and Ruby's answers were:

1. Are you now a member of the Communist Party?

Answer. No.

2. Have you ever been a member of the Communist Party?

Answer. No.

(103) Herndon concluded that Ruby was truthful when answering these two questions. He testified that the only significant physiological change noted occurred in response to the question, "Have you ever been known by another name?" The response identified by Herndon was a rise in blood pressure. (128) However, Herndon stated that Ruby later said he was confused on how to answer the question because he had changed his name from Jack Rubenstein years before. Herndon testified that other variations in the breathing tracing were caused by Ruby's hesitating to answer some questions due to their length. (129)

(104) The panel noted that according to the transcript of the examination, Ruby did not answer the question about his having another name. Herndon told him not to answer because they had not reviewed it during the pretesting phase. (130) The panel concluded that Ruby's reaction was simply a false reaction to Herndon's unorthodox instruction after he asked the question. On the other hand, the panel noted a large rise in blood pressure in response to the question, "Have you ever been a member of the Communist Party?", to which Ruby answered, "no."

(105) This question also evoked by far the most dramatic breathing reaction. Although Herndon claimed that the only variation in breathing in this series is caused by the length of the questions, this was certainly a short question, and it is much more likely he was referring to other questions. (131)

(106) In fact, in regard to the question, "Are you a member of the Communist Party?", Herndon stated, "there was no significant physiological change." (132) However, Herndon himself apparently wrote on the chart on this question, "slight suppression," which indicates a specific emotional change and one which is an excellent indicator of lying.

(107) It is interesting to note that during the entire first testing session this is the only place where Herndon wrote on the chart anything having to do with the breathing, except on series 4, when he wrote as a general comment, "Breathing irregular."

(108) In summary, the panel strongly disagreed with Herndon's opinions, and specifically with series 1 and 2, as discussed above. The panel concluded that the "lie" reactions on these two tests occurred on questions different from those suggested by Herndon. Based on its analysis of the charts themselves, and not considering the negative factors affecting the veracity of the examination, the panel could not form an opinion that Ruby told the truth when answering "No" to the four relevant questions asked on test series 1 and 2. On the contrary, the panel found more indication that Ruby was lying in response to these four questions.

(109) It is emphasized by the panel, however, that no opinion could be rendered on the validity of this examination or the reliability of the results for the numerous reasons discussed in this report.

REFERENCES

- (1) Report of the President's Commission on the Assassination of President Kennedy, p. 808 (hereinafter cited as the Warren Report).
- (2) Procedural rules of the House Select Committee on Assassinations, rule 7.2 (a).
- (3) From the curriculum of the U.S. Army Provost Marshal General Polygraph School, Fort McClellan, Ga.
- (4) Warren Report, p. 807.
- (5) Warren Report, p. 807; hearings before the President's Commission on the Assassination of President Kennedy (1964), vol. 14, p. 181 (hereinafter cited as Warren Commission hearings).
- (6) *Ibid.*
- (7) FBI teletype, to director from Dallas, July 15, 1964, file No. 44-24016-1762; letter from Hoover to Rankin, July 16, 1964, FBI file No. 44-24016-1765; FBI teletype, to director from Dallas, July 25, 1964, FBI file No. 44-24016-1797; Warren Report, p. 808.
- (8) Warren Report, p. 808; FBI teletype to director from Dallas, July 18, 1964, file No. 44-24016-1801.
- (9) Warren Commission hearings, vol. 14, p. 515.
- (10) Consent to Interview with Polygraph, signed by Jack Ruby, July 18, 1964, FBI file No. 44-24016-1821. See Warren Commission hearings, vol. 14, p. 515.
- (11) *Id.* at 511.
- (12) *Id.* at 514.
- (13) *Id.* at 514.
- (14) *Id.* at 518.
- (15) *Id.* at 511, 569.
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- (19) *Ibid.*
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- (37) *Id.* at 551.
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- (42) *Ibid.*
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- (45) *Ibid.*
- (46) *Id.* at 556.
- (47) *Ibid.*
- (48) *Ibid.*
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- (50) *Ibid.*

- (51) Id. at 560.
- (52) Ibid.
- (53) Ibid.
- (54) Id. at 560-561.
- (55) Id. at 561.
- (56) Ibid.
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- (58) Ibid.
- (59) Ibid.
- (60) Ibid.
- (61) Ibid.
- (62) Ibid.
- (63) Ibid.
- (64) Ibid.
- (65) Ibid.
- (66) Id. at 563.
- (67) Ibid.
- (68) Ibid.
- (69) Ibid.
- (70) Ibid.
- (71) Ibid.
- (72) Id. at 570.
- (73) Id. at 571.
- (74) Id. at 572.
- (75) Ibid.
- (76) Id. at 575.
- (77) Id. at 579.
- (78) Id. at 582.
- (79) Id. at 586.
- (80) Id. at 587.
- (81) Ibid.
- (82) FBI memorandum, to Conrad from Jones, July 20, 1964, file No. 44-24016-1807.
- (83) FBI memorandum, to Conrad from Jones, July 22, 1964, file No. 44-24016-1827.
- (84) Warren Commission Report, p. 816.
- (85) HSCA Outside Contract Report, June 22, 1978, JFK Document No. 006748.
- (86) Warren Commission hearings, vol. 14, p. 598.
- (87) Id. at 595.
- (88) Ibid.
- (89) Id. at 583.
- (90) In July 1964, Paul Bentley was the chief polygraphist, Dallas Police Department. During the summer of 1978, Bentley confirmed to panel member Arther that his properly equipped room would have been made available had anyone requested it for Ruby's examination.
- (91) Warren Report at 598.
- (92) Id. at 551-556.
- (93) Id. at 559-561, inter alia.
- (94) Id. at 518.
- (95) Id. at 528.
- (96) Id. at 530.
- (97) Id. at 528.
- (98) Id. at 592.
- (99) Id. at 537.
- (100) Id. at 515.
- (101) Id. at 537.
- (102) Id. at 537, 539.
- (103) Id. at 537.
- (104) Id. at 511, 522.
- (105) Id. at 581.
- (106) Id. at 587.
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