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META-ANALYSIS OF MOCK CRIME STUDIES OF THE CONTROL QUESTION POLYGRAPH TECHNIQUE

By

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Abstract

A review of results from standard guilty and innocent treatment conditions in 14 mock crime studies of the control question polygraph technique revealed accuracies ranging from chance to 100% correct. The present study examined several factors that may have contributed to the observed variability in detection rates across studies. Those included sampling error, differences in the populations from which subjects were drawn (Subjects), differences in the nature of incentives provided to subjects for passing the polygraph test (Incentives), and differences in the methods for diagnosing truth or deception (Decision Policy). A meta-analysis revealed that approximately 24% of the variance in detection rates could be attributed to sampling error, and detection rates were correlated with types of Subjects (r = .61), Incentives (r = .73), and Decision Policies (r = .67). The highest diagnostic accuracies were obtained from nonstudent subject samples, when both quilty and innocent subjects were offered monetary incentives to convince the examiner of their innocence, and when conventional field methods were used for interpreting the physiological recordings and diagnosing truth and deception. Together, differences in Subjects, Incentives, and Decision Policies may account for as much as 65% of the observed variance in detection rates. The present findings highlight the importance of conducting mock crime experiments that closely approximate field conditions.

INTRODUCTION

In reviewing the literature on the accuracy of field polygraph techniques, the Office of Technology Assessment (OTA)(1983) summarized the results of 14 mock crime experiments. They reported that accuracy rates obtained under laboratory conditions were generally greater than chance, but there was considerable variability in the accuracy rates obtained by different investigators. Accuracy of decisions on subjects who were guilty of mock crimes ranged from a low of 71% correct (Szucko & Kleinmuntz, 1981) to a high of 100% correct (Dawson, 1980; Ginton, Netzer, Elaad, & Ben-Shakhar, 1982; Raskin & Hare, 1978). Even greater variation occurred for innocent subjects. Accuracy of decisions on innocent subjects ranged from 49% correct (Szucko & Kleinmuntz, 1981) to 97% correct (Kircher & Raskin, 1982). Furthermore, the percentage of subjects correctly identified as truthful or deceptive in the laboratory experiments (61%) was more than 20% lower than

* The authors are at the University of Utah. Reprinted from <u>Law and</u> <u>Human Behavior</u> (1988) 12, 79-90 with the kind permission of the authors and Plenum Publishing Corporation, 233 Spring Street, New York, New York 10013. that obtained from actual criminal suspects in the field studies (82%) (OTA, 1983). The present study explored the possibility that the observed differences in detection rates may be related to differences in the extent to which the research paradigms employed by different investigators were representative of field conditions.

In the typical mock crime experiment, subjects are randomly assigned to guilty and innocent treatment conditions. Subjects in the guilty condition commit a mock crime, such as the theft of an object of value from a place that the subject ordinarily would not frequent. Innocent subjects are given a general description of the crime but do not enact it. Subjects in both conditions are told to deny having committed the theft. They may be promised a reward if they can convince the polygraph examiner of their innocence, or they may be threatened with punishment if they cannot. After acting out the instructions, the subject is given a polygraph examination by an experimenter who is blind with respect to the subject's guilt or innocence.

The mock crime paradigm overcomes many of the problems and limitations of field research on polygraph techniques (Podlesny & Raskin, 1977). As compared to field settings, laboratory environments offer greater control over extraneous variables, testing contexts, instrumentation, and the qualifications and expertise of polygraph examiners. Since the subjects in a laboratory experiment are assigned to guilty and innocent treatment conditions, the accuracy of the polygraph technique may be assessed by comparing the test outcomes to the actual truthful or deceptive status of subjects (ground truth).

In field studies ground truth is rarely known with certainty. Inferences drawn from confessions or physical evidence obtained subsequent to field polygraph examinations may be used as criteria against which polygraph outcomes may be compared, but the validity of such criteria is open to question (Raskin, in press). Since field studies employ fallible criteria for establishing the veracity of criminal suspects in lieu of ground truth, they generally have less criterion validity than do laboratory experiments (OTA, 1983).

Although laboratory paradigms offer many advantages over field research, the accuracies obtained in mock crime experiments may not be representative of the accuracies obtained in the field (Lykken, 1981; Podlesny & Raskin, 1977). There may be important differences between individuals who agree to participate in psychological experiments and those who submit to polygraph examinations during criminal investigations. The consequences of failing the polygraph examination and the motivations of subjects to appear truthful on the test are typically greater in the field than in the laboratory. There may be important differences between the laboratory and field in terms of the amount of experience and the qualifications of those who administer the tests, interpret the physiological recordings, and render diagnoses of truth and deception.

The present study examined three factors that may affect the generalizability of results obtained from mock crime experiments. One variable concerned differences in the populations from which the subjects

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were drawn. Most mock crime experiments have used college students as subjects. College students constitute a relatively homogeneous group with respect to age, intelligence, educational background, socioeconomic status, and level of socialization. Compared to the general public, college students are more familiar with the academic settings in which mock crime experiments usually are conducted. Students may have some general understanding of the goals of behavioral research and may feel more comfortable playing the role of an experimental subject. The artificial nature of the mock crime paradigm may be more evident to the student than in the nonstudent subject. Such perceptions may reduce the subject's personal involvement in the outcome of the test and produce a psychological context that is substantially different from that which surrounds the polygraph examination of a person who is suspected of committing a criminal act.

In an attempt to obtain samples that are more representative of the population criminal suspects, some experimenters have recruited subjects from the community (e.g., Podlesny & Raskin, 1978; Rovner, Raskin, & Kircher, 1978). Others have sampled from the target population of individuals who commit crimes, such as psychopathic and nonpsychopathic prison inmates (Raskin & Hare, 1978) or psychopathic exoffenders (Hammond, 1980).

The subject's motivation to appear truthful on the polygraph test may also play a role in the outcome. Guilty and innocent subjects who undergo polygraph examinations in actual criminal cases are highly motivated to convince the polygraph examiner of their innocence. Depending on the circumstances, a deceptive polygraph outcome may result in the loss of prestige, a job, money, or even arrest or imprisonment. It is generally agreed that the typical mock crime paradigm does not completely simulate the qualitative and quantitative aspects of the motivational structure of the typical field polygraph examination (Lykken, 1981; Podlesny & Raskin, 1977).

The closest approximation to a realistic situation was achieved in a study conducted in Israel. Ginton et al. (1982) administered required aptitude tests to 21 Israeli policemen. The policemen were permitted to score their own tests, which gave them an opportunity to alter their answers. Unknown to the policemen, the answer sheets had been chemically treated so that it was possible to determine who had actually cheated on the test. Subsequently, the policemen were told that they were suspected of cheating and were asked to take a polygraph test. They were also led to believe that their professional careers might depend on the outcome of the test. Of the 15 policemen who agreed to be tested, 2 had actually cheated on the test. Since the police officers were unaware that they were subjects in an experiment, it is reasonable to assume that the investigators succeeded in creating a realistic motivational context for the polygraph examinations.

The least realistic incentives for passing the polygraph test were used by Szucko and Kleinmuntz (1981). They simply told the psychology undergraduate volunteers who served as subjects that "intelligent and well-adjusted" individuals can pass the test without being found guilty. Bradley and Ainsworth (1984) offered guilty subjects a \$1.00 cash incentive to pass the test, but no attempt was made to motivate the innocent subjects. Barland and Raskin (1975) threatened college students in the innocent condition with the loss of college credit if they failed the test and promised guilty subjects a \$10 bonus for passing the test.

Bradley and Janisse (1981) threatened guilty and innocent subjects with a "painful but not permanently damaging electric shock" if they failed the test. However, comparisons between their threatened and nonthreatened control subjects revealed that the threat of punishment had no effect on detection accuracy. In the remaining studies, guilty and innocent subjects were offered some type of a reward such as college credit (e.g., Honts, Hodes, & Raskin, 1985) or a monetary bonus (e.g., Podlesny & Raskin, 1978) for producing a truthful outcome on the test.

The amount of physiological data provided to the polygraph interpreters for making diagnoses also varied across experiments. In an attempt to control for the amount of data provided to the interpreter, the OTA examined the accuracy of judgments based on a maximum of three charts of physiological data for each subject. However, in one experiment (Szucko & Kleinmuntz, 1981), judgments of truth and deception were based on only one chart, and in other studies (e.g., Kircher & Raskin, 1982a) examiner judgments were based on as many as five charts. Although there may be some justification for attempting to standardize the amount of data provided to the polygraph examiners, decisions in field settings are not always based on three or fewer charts, and there is no requirement that decisions be reached in every case. In a typical field polygraph test, the examiner presents the series of test questions three times, evaluates the first three charts of data, and attempts to make a decision. If a decision cannot be reached at that point, one or two additional charts may be obtained and evaluated. If the polygraph examiner is unable to reach a diagnosis after evaluating as many as five charts of data, the test is considered inconclusive.

Instead of controlling the number of polygraph charts evaluated by the polygraph interpreters, the present study explicitly considered the extent to which the number of charts provided to the interpreters fulfilled the requirements of standard field practice. Each experiment was categorized according to whether or not the methods of chart interpretation and decision rules employed by practicing field examiners were accurately represented in the experiment. That procedure used all of the available physiological data and permitted an examination of the effects on accuracy rate attributable to violations of conventional methods of chart interpretation and decision rules.

The classification strategy described above is confounded with another variable, the effects of which cannot be adequately assessed with the available data. Field polygraph examiners use one of two general methods for diagnosing truth and deception. In the older approach, the polygraph examiner forms a global impression of the subject's physiological responses to test questions (Reid & Inbau, 1966). To reach an overall determination of truth or deception, that information is combined in some unspecified manner with evaluations of the case facts and the subject's demeanor during the test.

The other general diagnostic approach is known as numerical scoring (Raskin, 1982). the numerical method attempts to minimize the influence of

extrapolygraphic sources of information on the decision maker and to maximize the reliability of examiner judgments. Physiological responses to test questions are systematically scored, the obtained scores are summed, and the subject is classified as truthful, deceptive, or inconclusive by comparing the total numerical score to standard criteria.

Global evaluations of the polygraph charts were performed in two mock crime experiments (Ginton et al., 1982; Szucko & Kleinmuntz, 1981). However, the Reid-trained examiners and student-trainees in the Szucko and Kleinmuntz study were not provided with the nonphysiological sources of information on which they had been trained to rely; their decisions were based on only one chart of data rather than three or more charts, and they were required to render a definite decision in every case. As a consequence, the use of global evaluators in the Szucko and Kleinmuntz study was confounded with the use of arbitrary decision rules.

Both global and numerical evaluations of the physiological data were performed in the study by Ginton et al. (1982). However, from their description it is not clear whether the polygraph examiners had been trained in global or numerical methods of evaluation, or both. Also, of the 15 subjects who participated in their experiment, only two were guilty of cheating. In view of the limited number of subjects in the Ginton et al. study and the constraints placed on the inadequately trained polygraph examiners in the Szucko and Kleinmuntz study, these two studies do not clearly represent outcomes obtained by global methods of evaluation. A direct comparison of the accuracies of global and numerical interpreters in a field study may be found in Raskin, Barland, and Podlesny (1978).

The OTA study found considerable variability in reported levels of diagnostic accuracy across studies, but it made no attempt to analyze that variability. The present study used procedures described by Hunter, Schmidt, and Jackson (1982) and Glass (1976) to perform a meta-analysis of the observed variability in detection rates. According to Hunter et al., much of the variance in results obtained by different studies may be attributed to statistical artifacts such as sampling error, differences in the reliability of measurement and the range of independent variables, and computational and typographical errors. Various applications of their techniques in the area of personnel selection revealed that the first three artifacts accounted for 72% of the variance in research findings, and approximately 60% of the total variance could be explained by sampling error alone (Schmidt & Hunter, 1981).

Hunter et al. suggested that if more than 75% of the variance in research findings is due to the effects of sampling error, errors of measurement, and range restriction, then the search for substantive differences among the studies (moderator variables) is unwarranted. However, the present meta-analysis assessed only the effects of sampling error because the available information was insufficient to assess errors of measurement, and the range of the independent variable was held constant by limiting the analysis to standard guilty and innocent treatment conditions, as discussed below. Since only sampling error was considered, a modification of the 75% decisions rule seemed appropriate. Following suggestions by Peters, Hartke and Pohlmann (1986), we decided not to search for moderator variables if sampling error accounted for more than 60% of the observed variance in detection rates among the 14 studies.

METHOD

Literature Base and Case Selection

Sixteen mock crime studies of the control question technique were found in the literature. Two of those studies were omitted from the present analysis because an index of diagnostic validity could not be computed when only guilty (Widacki & Horvath, 1978) or only innocent subjects (Heckel, Brokaw, Salzberg, & Wiggins, 1962) participated in the experiment.

Some of the variance in the detection rates reported in the OTA study may be attributed to effects of experimental treatments (e.g., training in the use of physical countermeasures) that had been implemented in some experiments but not in others. In the present study, that source of variance was removed by limiting the analysis to control subjects and to subjects who had received experimental treatments that had no significant effect on the accuracy of diagnoses. That requirement results in the loss of 93 (11%) of the total number of 858 subjects who had participated in the 14 experiments. However, it substantively corrected the range of treatments to standard guilty and innocent control conditions.

Assessments of Diagnostic Accuracy

An index of diagnostic accuracy was obtained for each study by correlating the judgments by the polygraph interpreters (coded as 1 for truthful decisions, 2 for inconclusive, and -1 for deceptive decisions) with the criterion of guilt or innocence (coded as 1 for innocent subjects and -1 for guilty subjects). An obtained correlation of 0.0 would indicate that there was no relationship between the judgments made by the polygraph interpreter and the criterion, and a correlation of 1.0 would indicate that the judgments of truth and deception were perfectly accurate.

Our use of the correlation coefficient is based on the assumption that there is an underlying order to the polygraph interpreters' judgments, with inconclusive outcomes being treated as intermediate values along a truthful/deceptive continuum. Although inconclusive outcomes may be viewed as failures of the technique and their occurrence would reduce the value of the correlation coefficient, they would not be weighted as heavily as false positive or false negative decision errors. thus, the correlation coefficient provides a measure of detection efficiency that is consistent with the real-world consequences of various types of polygraph outcomes. Furthermore, procedures for performed a meta-analysis were originally developed for analyzing variability among correlation coefficients, and the present method for measuring detection efficiency facilitated their application.

RESULTS

The outcomes obtained form guilty and innocent subjects, the sample sizes, and the obtained correlation between the judgments by the polygraph interpreter and the criterion (r) are summarized for each of the 14 experiments in the last column of Table 1. A wide range of correlation coefficients was obtained.

The estimate population variance of the correlations is given by $Sr^2 = \sum_{n_1}^{n_1} (r - \bar{r})^{2/n_1}$ is the sample size and r_1 is the observed r for ith study. The average of squared deviations between the observed r's and \bar{r} weighted by their respective sample sizes was .245. The estimated variance due to sampling error was obtained by $Se^2 = k(1 - r^{-2})^{2/N}$, where k is the number of studies and N is the total number of subjects (Hunter et al., 1982). The variance in observed correlations due to sampling error was .0058. Thus, only 23.8% (.0058/.0247) of the observed variability in detection efficiency was due to sampling error. Since that is considerably lower than the criterion value of 60%, a search for moderator variables was appropriate.

Three dichotomous measures were developed to reflect the extent to which investigators employed methods that were representative of existing field conditions. Similar to the meta-analytic techniques used by Smith and Glass (1977), for each study a score of 0 to 1 was assigned for each characteristic to indicate a relatively low or high degree of generalizability to the field situation. As illustrated in Table 2, a score of 0 on the Subject dimension indicated that the subjects were college students or student actors, and a score of 1 indicated that subjects were not students. A score of 0 on Incentives indicated that minimal incentives for producing a truthful outcome on the test were provided to guilty and/or innocent subjects, and a score of 1 indicated that stronger and equal incentives were provided to both groups. A score of 0 on Decision Policy was assigned when diagnoses of truth and deception were based on nonstandard field scoring techniques, and a score of 1 was assigned when standard field methods were used, as previously described.

The extent to which limitations on the generalizability of laboratory results may be related to detection rates was assessed by correlating the scores on each of the three design characteristics with the obtained correlations between the interpreters' diagnoses and the criterion (r's). Correlations were also obtained between the scores on the three design characteristics and z-score transformations of the obtained r's. The results obtained with z scores were uniformly stronger than those obtained using the correlations, but the same pattern of results emerged. For ease of interpretation, only the results obtained with correlation coefficients are reported.

To account for differences in sample size, weighted correlations were obtained according to procedures outlined by Hunter et al. (1982). They are shown in Table 3.

The correlations between each of the three design characteristics and detection efficiency are shown in the first column. In each case, a substantial positive and significant relationship was observed. The more closely the subject sample resembled the field population, the more accurate were the decisions. Relatively low levels of detection efficiency were obtained in studies with college student subjects, and the highest levels of detection were obtained from more heterogeneous samples of subjects, including psychopathic and nonpsychopathic prison immates and exoffenders.

	Guilty ($n = 382$) n Correct Wrong Inconclusive		Innocent ($n = 383$)						
Study			Wrong Inconclusive		n	Correct	Wrong	Inconclusive	Detection Efficiency
Barland and Raskin (1975)	36	64	8	28	36	42	17	42	.51
Bradley and Ainsworth (1984) ^a	16	88	13	0	8	75	13	13	.69
Bradley and Janisse (1981)	96	60	14	26	96	58	9	32	.57
Dawson (1980) ^b	12	100	0	0	12	75	8	17	.83
Gatchel et al. (1984)	14	50	7	43	14	79	0	21	.76
Ginton et al. (1982)	2	100	0	0	13	85	15	0	.65
Hammond (1980)	32	72	3	25	30	40	20	40	.57
• Honts et al. (1983) ^c	10	80 -	0	20	10	70	20	10	.71
Honts et al. $(1985)^d$	31	77	3	19	31	45	19	35	.61
Kircher and Raskin (1982a)	50	88	6	6	50	86	6	8	.84
Podlesny and Raskin (1978)	20	70	15	15	20	90	5	5	.75
Raskin and Hare (1978)	24	88	0	12	24	88	8	4	.87
Rovner et al. (1979) ^e	24	88	0	12	24	88	8	4	.87
Szucko and Kleinmuntz (1981)	15	71	29	0	15	49	51	0	.21
Weighted means		74	8	18		66	12	22	.66

Table 1. Pcrcent Outcomes Obtained under Standard Guilty and Innocent Conditions

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^a Sixteen intoxicated guilty subjects excluded.
^b Data from delayed answer excluded.
^c Ten countermeasure-trained subjects excluded.
^d Forty-three countermeasure-trained subjects excluded.
^e Twenty-four countermeasure-trained subjects excluded.

	Characteristic (assigned code)					
Study	Subject sample	Incentives	Decision policy			
Barland and Raskin (1975)	(0) College students	(0) Course credit and \$10 bonus for guilty only	(0) 3 charts			
Bradley and Ainsworth (1984)	(0) College students	(0) \$1 bonus for guilty only	(0) 3 charts and modified scoring			
Bradley and Janisse (1981)	(0) College students	(0) Course credit or threat of electric shock	(0) 3 Charts			
Dawson (1980)	(0) Student actors	(1) \$5 pay + \$5 bonus	(0) 2 charts			
Gatchel et al. (1984)	(0) Medical students and staff	(1) \$15 pay + \$10 bonus	(0) 3 charts			
Ginton et al. (1982)	(1) Policemen	(1) Career threat	(1) Field technique			
Hammond (1980)	(1) Students, alcoholics and exoffenders	(1) \$7 pay + \$10 bonus	(0) 2 charts			
Honts et al. (1983)	(0) College students	(1) Course credit + \$15 bonus	(1) Field technique			
Honts et al. (1985)	(0) College students	(0) Course credit	(1) Field technique			
Kircher and Raskin (1982a)	(1) General community	(1) \$8 pay + \$17 bonus	(1) Field technique			
Podlesny and Raskin (1978)	(1) General community	(1) \$5 pay + \$10 bonus	(1) Field technique			
Raskin & Hare (1978)	(1) Psychopathic and nonpsychopathic prisoners	(1) \$20 bonus	(1) Field technique			
Rovner et al. (1978)	(1) General community	(1) \$7.50 pay + \$10 bonus	(1) Field technique			
Szucko and Kleinmuntz (1981)	(0) College students	(0) Threat to self esteem	(0) 1 chart and no inconclusives			

 Table 2. Characteristics of Mock Crime Experiments

Laboratory Research on Polygraph Validity

Strong correlations with detection efficiency were also obtained for the Incentives and Decision Policy variables. Studies in which both guilty and innocent subjects were offered monetary incentives for a truthful outcome on the polygraph test produced higher decision accuracies than those that did not. In addition, accuracy of decisions is greatest when trained and experienced polygraph examiners evaluated three or more charts of recorded physiological data using standard numerical scoring criteria and decision rules. Nonstandard scoring techniques and the arbitrary decision criteria employed by Szucko and Kleinmuntz (1981) were associated with the lowest levels of detection efficiency.

Detection efficiency	Subject sample	Incentives
.61		
.73	.83	
.67	.62	•55
	Detection efficiency .61 .73 .67	Detection Subject efficiency sample .61 .73 .83 .67 .62

Table 3.	Correlations among Study Characteristics	and
	Detection Efficiency	

A multiple regression analysis was performed to assess the proportion of variance in detection efficiency that may be attributed to the combined effects of the three design characteristics. The three dichotomously coded design variables were simultaneously entered into the regression equation to predict the observed correlation between interpreter judgments and the criterion of guilt and innocence. The analysis produced an R^2 of .65, which suggests that the Subject, Incentive, and Decision Policy variables may account for as much as 65% of the observed variance in detection rates.

DISCUSSION

The present findings suggest that diagnostic accuracy in mock crime experiments depends on the extent to which the subjects, incentives, and procedures for evaluating the physiological data are representative of field conditions. Those factors may account for much of the variance in the accuracies obtained in laboratory experiments, and they may account for the discrepancy between accuracy rates in laboratory and field studies of the control question technique. However, one cannot infer that differences along any of the three dimensions examined in the present study were causally related to detection efficiency. Although the present findings are suggestive of such relationship, they are not definitive since no attempt was made to manipulate the number and/or types of threats to the generalizability of laboratory results.

The adequacy of the criteria that we used to rate the procedures employed by different investigators may be questioned. This issue is particularly important in light of the small number of studies on which the present findings were based. Under these circumstances, even small change in the criteria could have large effects on the correlations with detection rates.

The observed correlation between detection rates and decision policies highlights the importance of using standard field scoring techniques in laboratory experiments whenever inferences are to be drawn about the accuracy of such techniques in field settings. The correlations of detection rates with subject characteristics and incentives are of greater theoretical interest. Significantly lower detection rates were obtained from college students as compared to nonstudent samples and when minimal negative consequences were associated with a deceptive polygraph outcome. Relative to other members of the community, college students may be more familiar with the nature and objectives of psychological experiments, feel more comfortable in research settings, experience less emotional arousal while performing their tasks, and have little invested in the outcome of the test. Furthermore, personal involvement in the task may be especially difficult to achieve with college students. For a college student, the loss of a \$20 bonus for failing the polygraph test may be unimportant; but to the unemployed or prison inmates with limited resources and opportunities to earn money, \$20 may be a significant loss. Experiments are needed to assess the effects of personal involvement on detectability. The results of such studies may explain some of the variance in the results of laboratory studies and facilitate attempts to develop a comprehensive theory of detection of deception.

Given the limitations of mock crime analogs in which subjects are informed as to their roles as experimental subjects, a method for assessing the adequacy of the mock crime paradigm is badly needed. Highly realistic procedures that involve entrapment and deception of subjects (Ginton et al., 1982) are not likely to gain widespread acceptance among researchers in this area, since they might violate the ethical standards of research on human subjects (American Psychological Association, 1981). A possible solution would compare sets of intercorrelations among components of physiological responses observed under laboratory and field conditions. Computer tech-niques for data quantification and multivariate statistical methods, such as confirmatory factor analysis, multivariate analysis of variance, and discriminant analysis, may be used for those purposes. Use of such techniques might reveal whether or not the contextual and motivational components of field polygraph examinations that are difficult to simulate in the laboratory are important determinants of subjects' physiological responses to test questions. Similar techniques have already been used to provide powerful tests of quantitative and qualitative differences between the patterns of physiological activation that accompany truthfulness and deception during control question polygraph tests (Kircher & Raskin, 1982b), and their application in this area might prove to be fruitful.

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MOVEMENT RECORDING CHAIRS: A NECESSITY?

By

Kenneth E. Murray

In 1966, the normal field polygraph instrument in use was a 3-channel instrument which recorded separately, respiration, cardiovascular activity, and galvanic skin response. Reactions as reflected in the galvanic skin response were highly suspect, and indeed, many examiners completely discounted its effectiveness.

The Movement Chair was first made public in the first edition of <u>Truth</u> and <u>Deception</u> by John E. Reid and Fred E. Inbau. The Reid polygraph recorded movements in addition to the three conventional channels. One additional channel recorded arm movements and muscular pressure, while another additional channel recorded thigh movements and muscular pressure. This was accomplished through use of the Reid Movement Recorder Chair, a rather awkward seating device. It was evidence that at the time this book was published, that the authors felt these two movement recorder channels were valuable additions to the polygraph instrument.

In 1977, a new edition of <u>Truth and Deception</u> was published. This edition accurately discussed many of the changes which had taken place in the field of polygraphy. By 1977, the GSR was no longer considered experimental. And the field Polygraph generally recorded separately, both abdominal and thoracic respiration. The chart width of the standard instrument had increased from six to eight inches. The Reid Movement Chair had been replaced by a new type of movement chair, developed by Karl S. Klump.

The Klump Body Movement Recording Chair appeared to be a standard Stoelting subject's chair. However, the chair is designed to sense extremely small body movements and changes of pressure of the subject seated upon it. Distinct respiratory tracings similar to the upper pneumo channel are produced by the cooperative subject.

Three transducers (receptors) in the form of heavy rubber bags, are built into the seat and back rest of the chair. One transducer is placed under each thigh, and one in the back of the seat. These are interconnected at the chair, so only one rubber tube is required to be connected to a cardiograph recording channel.

Prior to the examination, the system is pressurized to about 5 mm. The subject's weight, when seated on the chair, will cause a normal increase of pressure to between 40 and 90 mm. The movement channel pen must be centered prior to the beginning of each chart. Even slight movements of the subject will cause a definite display of change in the tracing, while larger movements may make it necessary to readjust the recording pen.

In 1976, the Fort Collins, Colorado Police Department purchased a Stoelting Model 22715 Multigraphic instrument, which recorded body movement through the use of the Klump Movement Chair, as previously described. This instrument was in use until 1982.

It was my opinion that the Movement Channel was most useful, and that all polygraph instruments should record body movements. During a discussion of this matter with Dr. Gordon Barland, he suggested that a study should be conducted in order that the effectiveness of the Movement Chair could be documented.

PURPOSE

It is the purpose of this study to determine the usefulness of the Movement Chair, and to determine whether the Movement Channel should be considered necessary for all polygraph instruments.

METHOD OF EXPERIMENT

The data used in this study consisted of a sequence of six hundred sets of polygraph examination records. All examinations were given using the Stoelting Multigraphic 22715 instrument. The examinations consisted of 213 pre-employment examinations, (Arther format) given to applicants at the Fort Collins Police Department, and 387 specific examinations regarding various criminal acts. All examinations were given by the author.

All polygrams were first evaluated to determine if movements did occur, and if there were no evidence of this, they were separated into "Truthful" and "Deceptive" categories, which were in turn divided into "Verified" and "Not Verified" categories. If there was evidence of movement, an attempt was made to determine if there was a correlation between the subject's movements and the type of question then being asked. Two additional concerns were:

(1) Whether a subject could move without his movements being reflected in channels other than the movement channel.

(2) Whether a subject could move without being recorded by the movement chair.

Following this, the results of the examinations were categorized in the same manner as the non-moving subjects.

For the purpose of this study, only examinations which were verified by confessions are considered verified - either the subject confessed, incriminating himself or another person, or another person confessed, exonerating the first subject. No records are kept of verification through the development of additional evidence, or those subjects who later plead guilty or were found guilty in a Court of Law.

RESULTS

A total of 239 subjects were diagnosed as being deceptive. Of these, 150 were verified as being deceptive and 134 not verified as being deceptive.

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FALSE POSITIVES

Included in the 134 subjects not verified as deceptive were three subjects, diagnosed as being deceptive and later verified as being truthful.

The first subject was a white male, with no criminal record or history of mental problems, engaged in deliberate chair distortion and movements, very apparent with or without the movement channel.

The second subject was a white male, with a lengthy criminal background, who had taken and failed two previous examinations, each time making a full confession following the examination. As in previous examinations, he was cooperative. No confession was obtained, and later a friend of his did confess that the friend had alone committed the robbery.

The third subject was a white male college student, with no prior record, who was quite cooperative. His polygrams also indicated deception. The use of the movement channel did not play a role in causing these subjects to be found deceptive.

DECEPTIVE SUBJECTS

105 Subjects, Verified Deceptive	134 Subjects, Not Verified Deceptive
	1 Moderate movements, without being seen or causing changes in Movement channel Movements apparent in Car- dio channel only.
15 Excessive movements.	17 Excessive movements one subject later verified truthful.
23 Moderate movements.	23 Moderate movements.
67 No movements recorded or noted.	93 No movements recorded or noted.
Of a total number of 239 subjection	cts who were diagnosed as being decep-

tive, 79 subjects did move during their examination. Of these subjects, 18 moved only during the pre-test chart, and ceased movements during the actual examination. One subject moved only each time a control question was asked. Three persons moved only each time a relevant question was asked. The other 57 subjects moved in an erratic manner.

TRUTHFUL SUBJECTS

18 Subjects, Verified Truthful	295 Subjects, Not Verified Truthful
	1 Excessive movements.
	7 Moderate movements.
18 No movements recorded or noted.	287 No movements recorded or noted.
	17

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DISCUSSION

The actual number of verified truthful subjects was 21. there were 3 false positives in this verified truthful group. Considering only the verified truthful group, this would indicate a false positive rate of 14 percent. Considering the total group called truthful, the false positive rate was less than one percent.

Of the 313 diagnosed truthful subjects, only 8 moved. All of them moved during the pre-test only. It is my opinion that once the truthful person understands the importance of not moving, they attempt to cooperate.

Of the 239 diagnosed deceptive subjects, 79 moved. Of these, 18 moved during the pre-test only, being physically cooperative during the remainder of the examination. Only 4 subjects gave indication through their efforts that they had formulated a specific plan to attempt to "beat" the examination.

The other 57 subjects moved it seemed, without any plan or reason. I suspect that these subjects, rather than deliberately moving, were just too nervous to sit still. This has been verified by statements made by some of them following their confession.

While this shows a significant difference between the movements of truthful and deceptive individuals while undergoing a polygraph examination, I must report that in every case except one, when a subject moved during the polygraph examination, the fact that this movement took place was recorded in one or more of the other channels of the instrument as well as the movement channel. In that instance, as noted, movements were recorded by the cardio, but unseen by the examiner and not recorded by the movement channel.

While a total of 600 sets of records in sequence were examined, a total of 552 complete polygraph examinations were given. Not included in the preceding statistics are the following results of attempts to conduct examinations:

Excessive movements made by 2 subjects who confessed during the pretest interview, Moderate movements were made by 1 subject who confessed during the pre-test interview, and no movements were made by 12 subjects who confessed during the pre-test interview.

Excessive movements were made by 7 subjects who refused to be examined following the pre-test chart, with one subject later giving a complete confession to the Detective in charge of the case.

Moderate movements were made by 1 subject who refused to be examined following the pre-test interview, and no movements were made by 7 subjects who refused to be examined following the pre-test interview.

Moderate movements were made by 2 subjects whose charts were inconclusive, even with a re-examination.

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Upon entering the polygraph room, 1 subject immediately confessed and 1 subject requested an attorney.

The examiner refused to give a polygraph examination to 2 subjects due to their poor health, and one subject of a pre-employment volunteered such information as to absolutely make a polygraph examination unnecessary.

It is my opinion, based on these observations, that the pneumatic movement channel, while working very well, does not significantly aid in the detection of movement, as these movements can be detected through other channels and by careful observation of the subject.

During their examinations, 33.1 percent of the deceptive group and only 2.6 percent of the truthful group engaged in any movements during their polygraph examinations.

It seems that movements should be viewed as indications of deception. However, the lack of movements should not be viewed as indications of truthfulness. Also, in order that all subjects understand the necessity of sitting quietly during the examination, they should be repeatedly warned about movements.

In the final analysis, the actual polygraph recordings must be relied upon to determine truth or deception.



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UNITED STATES V. GIPSON: OUT OF THE FRYE PAN, INTO THE FIRE

By

Major Craig P. Whitman, U.S. Army

Introduction

The Court of Military Appeals has delivered its long awaited¹ opinion in <u>United States v. Gipson²</u> and has altered the course of future courts-martial practice in the area of scientific evidence. This article will examine the holding in the case, the new standard for general admissibility of scientific evidence, and the future application of the new standard to polygraph evidence in courts-martial.

The <u>Gipson</u> Decision

Facts

The accused in <u>Gipson</u> submitted to two polygraph examinations, one by the government and one by the defense. The defense sought to lay a foundation for the admissibility of its exculpatory examination, while the government advised the military judge that the accused was deceptive in its examination when he denied his involvement in the alleged crimes.³ The military judge ruled that neither the defense nor the government would be permitted to lay a foundation to admit evidence of the polygraph examinations because of the lack of acceptance of polygraph results in the scientific and judicial communities. The accused was ultimately found guilty of three specifications each of possession, transfer, and sale of lysergic acid diethylamide.⁴

The Death of Frye

The court ruled that the accused should have been allowed to attempt to lay a foundation for polygraph evidence.⁵ The <u>Gipson</u> decision is the death knell of <u>Frye v. United States</u>⁶ as the be-all-and-end-all standard for the admissibility of scientific evidence. the <u>Frye</u> standard will still have some vitality as a factor in determining probative value as will be discussed below.⁷

The author is an instructor in The Criminal Law Division, TJAGSA. This article is reprinted from <u>The Army Lawyer</u>, Department of the Army Pamphlet 27-50-178, October 1987 at 11. The opinions and conclusions expressed herein are those of the individual author, and do not necessarily represent the views of the Judge Advocate General's School, the United States Army, or any other federal agency.

New Standard for Scientific Evidence

In rejecting <u>Frye</u> as the standard for the admissibility of scientific evidence, the court resolved a long standing conflict with the Military Rules of Evidence. The drafters' analysis to Rule 702 states that the Rule may be broader and may supersede <u>Frye.⁸</u> Indeed, the <u>Gipson</u> opinion is a classic articulation of how the Rules are designed to be used together for the "promotion of growth and development of the law of evidence to the end that truth may be ascertained and proceedings justly determined."⁹ To that end, <u>Gipson</u> refers specifically to four pertinent military rules which together describe a comprehensive scheme for dealing with expert testimony.¹⁰

The sum of the first three rules amounts to what is sometimes called legal relevant. Military Rule of Evidence 401 defines relevant evidence in the least restrictive terms possible. It is a standard of mere logical relevant. Mil. R. Evid. 402 states the obvious. Relevant evidence is admissible and irrelevant evidence is not admissible. Mil. R. Evid. 403 requires the exclusion of relevant evidence if its probative value is substantially outweighed by certain, enumerated dangers. When evidence presents the potential for one of these dangers, the evidence is more likely to be admitted if it is more probative or more relevant than required under the mere logical relevance standard in Mil. R. Evid. 401.

The fourth rule is Mil. R. Evid. 702, which permits testimony by experts, in the form of an opinion or otherwise "[i]f ... [it] will assist the trier of fact to understand the evidence or to determine a fact in issue." According to one commentator, "the test is whether the expert can be help-ful."¹¹

Constitutional Premises

It is interesting to note the treatment given by the <u>Gipson</u> court to the constitutional arguments that were presented. The court rejected a constitutional right to present a defense in the form of favorable polygraph evidence.¹³ To ground the opinion on such a right may have precluded the government from using polygraph evidence as no such right exists for the government. The court thereby allows the government and the defense to present polygraph evidence that is determined to be relevant and helpful.

The court had a kinder view of the due process argument, but explicitly stated that the government may also use polygraph evidence in appropriate cases. Military trial judges were cautioned, however, that due process may require them to "bend even further than normal in the direction of giving the accused the benefit of the doubt"¹⁴ when deciding whether the relevant and helpful standard is met and in conducting the Mil. R. Evid. 403 balancing test. The court also stated, regarding the two-way street of admissibility, "[I]n marginal cases, due process might make the road a tad wider on the defense's side than on the Government's."¹⁵ This treatment reflects the general idea that the accused should be protected and is also consistent with fairness to the accused and the government.

Use of Polygraph Evidence

The <u>Gipson</u> opinion makes it clear that polygraph evidence relating to the credibility of certain statements does not relate to the examinee's character.¹⁶ This forecloses the full range of objections under Mil. R. Evid. 608. For example, a witness need not have his or her credibility attacked prior to the introduction of polygraph evidence. Also barred is an objection based on Mil. R. Evid. 608, which prohibits the use of extrinsic evidence to prove a specific instance of conduct.

The court established two uses for polygraph results. Each requires that the examinee testify at trial. First, a polygrapher could "opine whether the examinee was being truthful or deceptive in making a particular assertion **at the time of the polygraph exam**. It would then be for the factfinder to determine whether an inference [exists] regarding the truthfulness of the examinee's in-court testimony."¹⁷ In this first instance, any witness' credibility could be undermined or supported with polygraph evidence regardless of whether the witness' credibility had been attacked.

Regarding the second use, the court stated, "Theoretically, it is conceivable that an expert's opinion about the truthfulness of a statement made during a polygraph exam could even support a direct inference as to quilt or innocence."18 The court went on to say that it "would not condone such opinion testimony absent the examinee's consistent in-court testimony. If it were otherwise, the conclusions of the expert concerning the credibility of the examinee would be the only evidence presented to the factfinder."¹⁹ What exactly does this mean? Simply stated, to support a direct inference as to quilt or innocence, the questions asked during the polygraph examination must embrace the ultimate issues in the case and the examinee must testify. The questions asked during the polygraph examination must be specific enough to enable the finder of fact to arrive at only one conclusion if the polygrapher's opinion is accepted. For example, if the accused is charged with distributing drugs to named persons on specific dates, the questions asked of him must include all relevant information. If the accused simply denies ever having distributed drugs and deception is indicated, the finder of fact is not limited to a single conclusion as to quilt or innocence as the accused may have distributed drugs to other than the named persons on different dates.

The uses of polygraph evidence established in <u>Gipson</u> may come into play when considering the testimony of several different kinds of witnesses. When the accused is the examinee, the uses seem clear. An inference regarding the truthfulness of the accused's in-court testimony may be drawn and if the questions to the accused during the polygraph examination are specific enough, a direct inference as to guilt or innocence may be made.

If, however, the examinee is a victim, a government witness, or a defense witness, the uses may not be as clearly applied. For example, if a defense alibi witness testifies that he was with the accused at the time an offense was allegedly committed and it would be physically impossible for the accused to have committed the alleged offense, it does not necessarily follow that a direct inference of innocence may be drawn if a polygrapher's opinion supports that testimony. The defense witness may have a problem

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remembering the exact time and date of the offense or he may have confused the accused with another person. Likewise, if an assault victim testifies that the accused assaulted her, a polygrapher's opinion supporting that testimony may not lead to a direct inference of guilt. The victim may have had difficulty perceiving the event because of emotions or poor eyesight, and her testimony may be tainted by some prejudice or bias that affected her perception. Problems such as the ones indicated involving perception and memory may only go to weight, however, and the proponent should still argue that the inference may be applied.

In any given case, the proponent must articulate a proper use. The more collateral the issue becomes, the less likely it is that polygraph evidence will have sufficient probative value to survive the Mil. R. Evid. 403 balancing test discussed below. Proponents of polygraph evidence must therefore evaluate the circumstances of each case to determine if polygraph evidence may be helpful.

It is also important to understand what the court in <u>Gipson</u> did not say. The court did not say that polygraph evidence should have been admitted in <u>Gipson</u>, or in any other case. It simply allows the proponent to attempt to lay a foundation for the admission of polygraph evidence.

Application of the Standard

Relevance

To determine relevancy, one must look to Mil. R. Evid. 401-403. Mil. R. Evid. 401 is a standard of mere logical relevance.²⁰ In order for polygraph evidence to be used in the ways stated by the <u>Gipson</u> court, the first requirement to make the evidence relevant will be the in-court testimony of the examinee. If the examinee does not testify, no inference of whether the examinee testified truthfully in court can be made. If the examinee does testify, the polygraph results may still be excluded as a result of the Mil. R. Evid. 403 balancing test. The proponent must therefore present more evidence to boost the polygraph evidence beyond the mere logical relevance threshold.

The second foundational requirement will be a showing of the validity of the scientific theory.²¹ The polygrapher may have some training in this area, but a proponent would be better able to satisfy this requirement with experts from the fields of medicine and behavioral sciences. Behaviorists should show that humans will react emotionally to certain stimuli and physiologists should relate that emotionality to certain stimuli and physiologists should relate that emotional reactions result in physiological responses. Taken together, these witnesses should establish that humans will be fearful when confronted with a situation that may lead to their being caught in a lie and that fear will be expressed in physiological responses.

Third, the proponent must show that technology exists that can record physiological changes. There is little controversy over the ability of the polygraph to accurately measure and monitor such data as pulse, respiration, blood pressure, and galvanic skin resistance.²² Testimony from the polygrapher should be sufficient to satisfy this foundational requirement.

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The fourth requirement is the reliability of polygraphs in general. Here the proponent will find it difficult to present useful, consistent data. Studies in this area are numerous but the results are far from consistent. Reliability rates in studies range from 17% to $100\%^{23}$ A proponent may therefore present evidence of studies that have high reliability rates, but the opponent will also be able to show that the reliability rates in studies vary significantly.²⁴

Fifth, counsel must establish the good working condition of the polygraph. The polygrapher can testify regarding the proper maintenance of the polygraph machine, and whether those maintenance services had been done. The polygrapher must also state that the machine as in proper working order on the date of the exam. Certain procedures have also been established to screen examinees for suitability. Some people are not suitable or susceptible to being tested. In each case, the polygrapher must testify that these procedures were followed with the examinee in question.²⁵

Finally, the proponent must present the qualifications of the polygrapher.²⁶ Again, all of this evidence is designed to boost the relevance of the evidence to make it more probative. Even if all other foundation requirements are met, a less than fully qualified polygrapher may tip the balance to excluding the evidence.

Helpful

In addition to relevance, the second major criterion for the admission of polygraph evidence is that it must be helpful. Arguably, once the evidence is determined to be relevant, it will also be helpful. For the sake of enhanced likelihood of admissibility, however, the proponent should also lay this foundational requirement by the numbers.

First, Mil. R. Evid. 702 requires that the expert have scientific, technical, or specialized knowledge.

Second, the evidence must relate to a fact in issue. For example, if the issue was consent and the victim of a rape showed no deception on a polygraph when she stated that she had sexual intercourse with the accused, the polygraph evidence would not relate to the fact in issue.

Third, the proponent must show that the evidence is relevant. Evidence that is not relevant is not helpful. Of course, the initial step in the foundational process was just such a showing of relevance.

The <u>Gipson</u> court also suggested that the helpfulness standard of Mil. R. Evid. 702 implies a quantum of reliability beyond that required to meet a standard of bare logical relevance.²⁷ Therefore, the reliability established under the relevance inquiry should be persuasive in determining whether the evidence is helpful.

Determining Admissibility

Now that <u>Frye</u> has been rejected as the independent controlling standard for admissibility, how is the judge to know whether scientific evidence

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should be admitted? The military judge is going to have to use his or her own judgment, based on the evidence submitted to lay a foundation. But even if the military judge finds the polygraph evidence to be relevant and helpful, he or she must still conduct the Mil. R. Evid. 403 balancing test. The evidence will be admissible unless the probative value of the evidence is substantially outweighed by certain enumerated dangers.

The first inquiry then is, "How probative is the evidence?" Interestingly, Gipson rejects Frye as the standard but retains it as one important factor in determining probativeness and helpfulness.²⁸ If the scientific evidence is generally accepted in the relevant scientific community, its probative value should be high. But other factors may be considered. The <u>Gipson</u> case refers the military judge to Weinstein²⁹ for a discussion of other factors that may be persuasive. This is fortunate for polygraph proponents because it seems clear that polygraph evidence cannot meet the Frye test, either as a standard or a factor.³⁰ The Weinstein factors include the degree of acceptance in the scientific community, the polygrapher's qualifications, the use of polygraphs in non-legal areas, normal rates of errors, whether the data is objectively measured (e.g., chemical analysis) or subjectively measured (e.g., polygrapher's or hand-writing expert's opinion), and whether an expert pool exists for independent evaluation. Obviously, a well-qualified polygrapher who examines a willing and suitable subject under ideal conditions will produce an opinion whose probativeness has the best chance of surviving the Mil. R. Evid. 403 balancing test. What are the dangers that are weighed against the probative value?

Dangers

The dangers enumerated in Mil. R. Evid. 403 are unfair prejudice, confusion of the issues, misleading the members, undue delay, waste of time, and needless presentation of cumulative evidence. If the polygraph evidence is found to be relevant and helpful, it should be admitted unless its probative value is substantially outweighed by one of these dangers. The most likely dangers associated with polygraph evidence will be confusion of the issues, waste of time, and the possibility of misleading the members.

Confusion of the issues may exist when too much attention is drawn away from the main issues in the case and directed toward collateral matters. A number of witnesses will have to be called to lay the foundation for admitting polygraph evidence. The opponent will probably call a like number of witnesses to rebut the proponent's evidence. The whole process will be very time-consuming, and compared to the other evidence in the case, the time spent on polygraph evidence may be inordinate. All this may lead to a case where the polygraph is on trial and not the accused.

Waste of time will also be an issue. The military judge will be required to sit through a lengthy procedure for laying the foundation. If the military judge decides to admit the evidence, the same foundation should be laid again before the members so they can accord the evidence its proper weight. The final danger is misleading the members. The concept of misleading the members refers primarily to the possibility of the members overvaluing the probativeness of a particular item of evidence. Professor Graham, in his <u>Handbook of Federal Evidence</u>, gave an example of the possibility of the members overvaluing the probative value of evidence. His example involved the polygraph.³¹

Considering the posture of the evidence currently available as outlined in <u>Gipson</u>, if the military judge allows counsel to lay a foundation for the admission of polygraph evidence and conducts the Mil. R. Evid. 403 balancing test on the record, it would be surprising to see an appellate court find error for an abuse of discretion if the evidence was excluded. The probative value is questionable, the uses of the evidence are limited, and the potential for confusing the issues and misleading the members is great.

<u>Scenario</u>

A brief discussion of a possible scenario may be helpful to determine how these issues should be framed.

Assume that an accused person passes either a government or private examination and testifies at trial. After <u>Gipson</u>, the military judge must allow the defense to attempt to lay a foundation for the evidence. The government will probably challenge the foundation every step of the way. The government may be placed in the awkward position of using experts to attack the foundation that it had used in earlier cases to establish a foundation for its evidence. Accordingly, the government may wish to limit its attack to the polygrapher, the suitability of the examinee, and the condition of the machine. Defense counsel should be cautious to avoid this same awkward position.

If the accused passed a private exam, the government should request the defense to produce data from the private exam and any audio or video recordings of the exam. This data may be used to evaluate the technique of the examiner, the demeanor of the accused, and maybe even allow for an independent opinion. The government should also request that the accused be required to take a government polygraph examination. If an accused refuses to take a government exam, that fact could probably be considered by the military judge in conducting the Mil. R. Evid. 403 balancing test. The theory upon which the polygraph is based requires the examinee to be fearful when faced with the possibility of being caught in a lie. The military judge could determine that the accused had nothing to fear in the private examination, and therefore the reliability of the results would be questionable.

Conclusion

The court in <u>Gipson</u> concluded that the <u>Frye</u> test should be abandoned in favor of a test using the Military Rules of Evidence and expressed the opinion that the state of polygraph evidence may be such that it should be admitted in courts-martial. To that end, the court has opened the door to the defense and the government and has invited them to marshal the evidence at the trial level.³² In each case, the military judge must consider a wide range of factors and the decision will rest in the military judge's

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discretion. The subjective nature of polygraph evidence is such that even after the evidence has been admitted in a number of cases, the battle will still be waged in each succeeding case. While the outcome in each case may not be predicted, the <u>Gipson</u> decision will likely result in this issue being hotly contested in each trial where polygraph evidence is sought to be admitted. It may be said that the court in <u>Gipson</u> has taken the issue of the admissibility of scientific evidence out of the <u>Frye</u> pan and thrown it into the fire.

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¹ Petition for review was granted on 15 February 1984. 17 M.J. 343 (C.M.A. 1984).

² 24 M.J. 343 (C.M.A. 1987).

³ Id. at 247-48.

⁴ Id. at 247.

⁵ Id. at 253.

⁶ 293 F. 1013 (D.C. Cir. 1923). The <u>Frye</u> standard held that, to be admissible, the scientific evidence offered must be generally accepted in the "particular field in which it belongs." Id. at 1014.

⁷ See infra text accompanying notes 28-29. See also Note, Absolute Ban Against Polygraph Evidence Lifted: Frye Test Superseded, <u>The Army Lawyer</u>, Sept. 1987, at 36.

⁸ <u>Manual for Courts-Martial, United States</u>, 1984, Mil. R. Evid. 702 analysis, app. 22, at A22-45.

⁹ Mil. R. Evid. 102.

10 24 M.J. at 251.

¹¹ S. Saltberg, L. Schinasi, & D. Schlueter, <u>Military Rules of Evidence</u> Manual 588 (2d ed. 1986).

12 24 M.J. at 251.

¹³ Id. at 252.

14 Id.

15 Id.

16 Id.

¹⁷ Id. at 253 (emphasis in original).

18 Id. 19 Id. 20 Id. at 251. 21 See generally P. Giannelli & E. Imwinkelreid, Scientific Evidence 231-48 (1986). 22 Id. at 233. 23 Id. at 238-41. 24 Td. 25 See A. Moenssens & F. Inbau, Scientific Evidence in Criminal Cases 616 (1978). 26 P. Giannelli & E. Imwinkelreid, supra note 21, at 235-38. 27 24 M.J. at 251. ²⁸ Id. at 252. 29 Id. (citing 3 J. Weinstein & M. Berger, Weinstein's Evidence para. 702[03] (1985)). 30 Id. at 249. 31 M. Graham, <u>Handbook of Federal Evidence</u> 185 (2d ed. 1986). 32 24 M.J. at 253.

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United States v. Gipson: A Leap Forward or Impetus for a Step Backward?

By

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Introduction

In <u>United States v. Gipson</u>,¹ the Court of Military Appeals (COMA) relaxed the <u>Frye</u>² test for admissibility of scientific evidence and thereby lifted a longstanding bar to the admissibility of polygraph evidence at courts-martial.³ Commentary to date has centered on a discussion of the new "helpful and relevant" test with some treatment of polygraph issues.⁴ This article focuses on the practical consequences of <u>Gipson</u> and makes some suggestions for trial counsel faced with polygraph issues at trial. In addition, a recommendation for a change in the Rules for Courts-Martial is presented.

Boiler Technician Second Class Gipson was charged with three specifications of possession, transfer, and sale of lysergic acid diethylamide (ISD). The main witnesses against Gipson were two servicemembers who testified that they purchased LSD from Gipson. Prior to trial, at his own expense, Gipson obtained a polygraph examination conducted by a civilian examiner. The examiner concluded that Gipson was telling the truth when he denied committing the offenses. Gipson also took a polygraph examination conducted by a Naval Investigative Service (NIS) agent. The NIS examiner concluded that Gipson was deceptive when he denied committing the offenses. At trial, the defense made a motion in limine to admit evidence of the exculpatory examination. The prosecution was willing to stipulate to the civilian polygraph examiner's qualifications but objected to the defense attempt to lay a foundation for the admission of the test result arguing that polygraph evidence is not admissible at courts-martial. Also, trial counsel related that appellant had failed the government administered polygraph test.⁵ The military judge ruled that neither side would be permitted to lay a foundation to admit the polygraph evidence, because polygraph tests were not sufficiently accepted in the "scientific community or the judicial community."6 The judge also expressed concern that introduction of polygraph test results would invade the province of the fact-finder.

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COMA held that the judge abused his discretion in not allowing the defense an opportunity to lay a foundation for admission of the results of Gipson's polygraph examination. The court addressed each of the military judge's concerns. First, apparently conceding that polygraph results are not "generally accepted in the scientific community" within the meaning of Frye,⁷ the court determined that the Frye test should be relaxed. Polygraph test results should be evaluated under the court's new "helpful and relevant" test for admissibility.⁸ Second, the court expressed its confidence that panel members would not be overwhelmed by polygraph evidence⁹ and emphasized that the examiner would be permitted to testify that the examinee was truthful or deceptive only in response to the questions asked and only at the time he or she gave the responses.¹⁰ The court expressed no opinion on whether the polygraph evidence in <u>Gipson</u> should have been admitted.

Gipson undoubtedly will have a significant impact on courts-martial practice. The decision, representing perhaps the most liberal approach to admissibility of polygraph test results,¹¹ opens the door to efforts to introduce this powerful evidence. While the military judge may be required to caution the members that the test results is only indicative of whether the examinee was being truthful "at the time of the polygraph exam" and may therefore only be used to draw an inference regarding the truthfulness of the witness's in-court testimony, trial counsel should not under estimate the effect of such evidence. The members, many of whom have been encouraged by their legal advisors to rely on polygraph results in making preferral, referral, or nonjudicial punishments decisions, will be inclined to trust polygraph results. The polygraph test results could very often be the tie breaker in close cases. Moreover, many members will probably view the military judge's instruction about inferences and the polygraph results as a distinction without a difference.¹² In any case, it cannot be disputed that the polygraph examiner, an "expert" in the dominant issue in most contested cases (credibility), is a formidable witness. Trial counsel should recoqnize this and be prepared to both introduce polygraph evidence at trial and respond to defense efforts at introduction. Critical to such preparation is a full understanding of the court's holding and analysis in Gipson.

The Problem--Understanding <u>Gipson</u>

The key to understanding <u>Gipson</u> is to first recognize its narrow holding: the military judge abused his discretion in not permitting the defendant to lay a foundation for the admissibility of his polygraph test result. The court did not rule that polygraph test results are admissible at courts-martial. In fact, the court provided little guidance for military judges to follow in evaluating proffers of polygraph evidence. Its admissibility will depend on "the competence of the examiner, the suitability of the examinee, the nature of the particular testing process employed, and **such other factors as may arise**"¹³ as balance against the collateral dangers described in Mil. R. Evid. 403.¹⁴ If that is not sufficiently cryptic, the court goes on to state that even its conclusions about the admissibility of polygraph test results (discussed below) should not be accepted as "immutable principles."¹⁵ These statements, combined with the presence of three separate opinions in <u>Gipson</u>,¹⁶ produce a situation where it is almost impossible to predict how the court will react to polygraph issues in the future. To say the least, that situation is not a bright picture for counsel and military judges. Common sense tells us that the majority in <u>Gipson</u> must have had some scenario in mind in which polygraph test results would be admissible. The problem is determining when the court would find it appropriate to admit the test results. Perhaps the court will not "recognize it until it sees it."

A close examination of the majority opinions in Gipson may give some hint of the court's ideal scenario for admitting polygraph test results and thereby give trial practitioners and military judges some idea of how to evaluate polygraph evidence. In his lead opinion, Judge Cox, while assessing the reliability of polygraph results, makes the following observations. First, he notes that the studies indicate negative polygraph test results (no deception indicated) may be more reliable than positive ones.¹⁷ Second, he notes that exparte examinations may be less reliable, because the ability to discard unfavorable test results eliminates or reduces an essential basis for the reliability of such results--the nervousness created by fear of detection. In this regard, Judge Cox approvingly cites the practice of jurisdictions that accept polygraph test results only where the parties stipulate, before the test, that the results will be admissible.¹⁸ Another indication of Judge Cox's ideal case for admissibility of polygraph evidence is found in his discussion of the Mil. R. Evid. 403 balancing test that the military judge must conduct in evaluating such evidence. Rejecting the notion that an accused has a due process right to admit exculpatory polygraph evidence, he nonetheless indicates that the 403 balancing test should be slightly skewed for admitting defense polygraph test results.¹⁹ Thus, for Judge Cox, the best case for admitting a polygraph test result (assuming the examiner was qualified and the examinee and issue were testable) would be a defense negative test, conducted under conditions where fear of detection was maximized (ideally where the parties stipulated to its admissibility beforehand). A close second would be a similar test results offered by the prosecution.

In his concurring opinion, Chief Judge Everett seems most concerned about enhancing the reliability of polygraph test results by maximizing fear of detection. He notes that reliability of test results may diminish with later tests (because nervousness about the test may be reduced after one becomes accustomed to taking the test).²⁰ He also expresses his preference for a test conducted where "representatives of the adverse party had been permitted to observe" the test.²¹ Presumably, therefore, Chief Judge Everett likes the idea of having the parties stipulate to the admissibility of the test result beforehand—the situation where fear of detection is maximized. Thus, Chief Judge Everett's contribution to Judge Cox's ideal scenario for introduction of a polygraph test result is that the test be the only one taken by the witness. Both judges agree that an accused cannot introduce a polygraph test result supporting his version of the facts without first testifying.²²

What emerges is some indication of what situation the court would be most likely to sustain the introduction of polygraph test results. The test should be (1) the only one taken by the witness, (2) negative, and (3) given under conditions where fear of detection is maximized (preferably following stipulation as to admissibility by both parties). Additionally, the test result would be relevant only after the witness testifies, and in marginal cases, defense offers of test results should be accorded more favorable consideration. Certainly, there may be other situations where the court will uphold receiving in evidence polygraph test results, but this appears to be the ideal situation and gives trial practitioners and military judges at least some idea how to evaluate the admissibility of polygraph evidence. Or does it?

The problem with the "ideal scenario" is that Judge Cox's preference for negative results is mutually inconsistent with his and Chief Judge Everett's desire for a test conducted under circumstances where fear of detection is maximized. Can there be any doubt that an examinee's knowledge that the test results will only be admissible if it indicates that the examinee is telling the truth diminishes the fear of detection and thereby undermines the basis for validity of his test result? Surely not, and that is the inevitable consequence of a rule admitting only negative results.²³ Thus we are indeed back to where we started--with little idea of when a polygraph test result will be admissible. The most we can say is that because the majority in <u>Gipson</u> agreed that maximizing fear of detection was fundamental to the validity of the test result, that ought to be the overriding concern for trial practitioners and military judges.²⁴

Practice Pointers

With this in mind, I offer the following suggestions for trial counsel facing polygraph issues at trial.

First, oppose any defense effort to introduce a polygraph test result unless the examinee knew that the test result was going to be admitted regardless of the outcome. In other words, do not concede the admissibility of a test result unless you have stipulated to its admissibility prior to trial and prior to the date of the test. The decision to stipulate will depend on many factors to include, but not limited to, the suitability of the examinee and issue(s) to reliable polygraph testing, the qualifications of the polygraph examiner, and the strength of your case.²⁵ Your opposition to the admissibility of ex parte polygraph test results should focus on the unreliability of polygraph test results in general, and ex parte tests in particular, as established through cross-examination of the defense expert(s) and your own evidence, such as expert testimony, treatises, and studies.

Second, even if you have stipulated to the admissibility of a test result, oppose its introduction if the witness has not already testified. Your objection should be on the grounds that the result is not relevant until the witness testifies, citing <u>Abeyta</u>, and that permitting introduction of the result prior to the witness testifying would constitute improper bolstering of the witness's testimony.²⁶ To avoid a similar defense objection to your introduction of the accused's polygraph test result, include in the stipulation agreement a waiver clause in which the accused waives all objections to the government's introduction of the polygraph test result. Such a waiver is clearly consistent with the goal of maximizing fear of detection (if the accused knows he can veto introduction of his test result by simply not testifying, then surely his fear of detection is reduced).

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Moreover, <u>Abeyta</u> would not seem to prohibit the waiver; an accused's statement, in contrast to other witnesses' statements, can be introduced and attacked regardless of whether the accused testifies.²⁷

Third, avoid surprises and prepare for possible defeat of your opposition to an exparte defense polygraph examination. Reduce the likelihood of surprise by serving a reciprocal discovery request under Rule for Courts-Martial 701(b)(3) and (4)²⁸ for all documents, recordings, charts, or any other evidence that might be generated during a polygraph examination. Upon learning (before or at trial) that the defense may attempt to introduce an ex parte polygraph test result, request that the examinee (usually the accused) submit to a government test. If the examinee refuses, make a motion in limine to exclude the test result unless the examinee submits to a government test. Judge Cox hinted at the wisdom of such a motion in a footnote to his opinion wherein he cites Mil. R. Evid. 302(d) (allowing the military judge to exclude defense mental examination evidence where the accused refuses to submit to a government examination) and notes that the court is not faced with the situation where the accused refused to cooperate with the government.²⁹ The manifest rationale of Rule 302(d), to provide the parties equal access to evidence, is equally applicable to polygraph evidence. You should argue that to allow the accused to present an exculpatory polygraph test result without submitting to a government test would be tantamount to shielding a witness from meaningful cross-examination.³⁰ In any case, make every effort to subject the defense polygraph examiner's conclusions to exacting scrutiny. Ask for charts and all other data that led to the defense expert's conclusions. Employ your own expert and make sure that the government expert can listen to the testimony of the defense expert. Require the defense expert to explain his choice of questions, articulate his reasoning process, and justify his conclusions. In short, recognize that polygraph evidence can be very persuasive and treat it accordingly.

With regard to polygraph test results favorable to the prosecution, the decision to seek introduction of such results at trial will turn on all the considerations mentioned above. The only difference is that in marginal cases, prosecution proffers may receive less favorable consideration than defense proffers. Also, the risk of error-overturned conviction on appeal--is much greater where the military judge errs by admitting test results offered by the government. For this reason, I recommend that trial counsel only attempt to introduce polygraph test results in the safest circumstances, i.e., following stipulations by both parties.

Recommendation and Conclusion

<u>Gipson</u> is a troublesome case. The court invites counsel to marshal "the latest developments in support of or in opposition to particular [polygraph] evidence ... at the trial level"³¹ but provides little guidance for evaluating these developments. The Rules for Courts-Martial are also silent concerning polygraph evidence. The question is what to do about this lack of guidance. We could, of course, do nothing and trust the trial and appellate processes to make the law. That course of action has the beauty of simplicity but perpetuates uncertainty. The alternatives are to (1) amend the Rules for Courts-Martial to allow polygraph test results as evidence under certain circumstances or (2) amend the Rules to forbid polygraph test results as evidence.³² The only workable amendment allowing polygraph evidence is a stipulation rule allowing the parties to stipulate to the admissibility of a test result prior to the test. The rule should address admissibility of offers to take polygraph test results, permissible methods of impeachment of the examiner's testimony, permissible reasons for the government to refuse to stipulate, instructions for the panel members on permissible uses of the evidence, and permissible reasons for withdrawal from the stipulation.³³ And the list, no doubt, will grow as trial and appellate courts wrestle with issues created by allowing "credibility experts" to testify. Perhaps the most fundamental issue of all will be whether the parties can stipulate to the admissibility of what may be unreliable evidence.³⁴

In my view, the benefits of a stipulation rule are outweighed by the costs. The question really boils down to whether military judges and counsel should be the primary participants in the longstanding controversy surrounding the validity of polygraph test results. In 1981, the Supreme Court of Wisconsin ended a seven year experiment with a stipulation rule by noting that the "Burden on the trial court to assess the reliability of stipulated polygraph evidence may outweigh any probative value the evidence may have." ³⁵ The court barred all polygraph evidence in criminal proceedings.

We should join the majority of state and federal courts and reenact the bar to polygraph evidence. Judge Cox hit the nail on the head when he noted that "the battle over polygraph reliability will continue to rage." ³⁶ Let it rage somewhere else.

References

¹ 24 M.J. 246 (C.M.A. 1987).

² <u>Frye v. United States</u>, 293 F. 1013 (D.C. Cir. 1923). <u>Frye</u> requires the proponent of scientific evidence to show that the principles or techniques from which the evidence was derived are "sufficiently established to have gained general acceptance in the particular field in which it belongs." Id. at 1014. Applying that test, the court upheld exclusion of polygraph test results.

³ See, e.g., <u>United States v. Ledlow</u>, 29 C.M.R. 475 (C.M.A. 1960); <u>Manual</u> for Courts-Martial, <u>United States</u>, 1969 (Rev. ed.), para 142e.

⁴ See United States v. Gipson: Out of the Frye Pan, Into the Fire, <u>The Army</u> <u>Lawyer</u>, Oct. 1987, at 11: Note, Absolute Bar Against Polygraph Evidence Lifted: Frye Test Superseded. <u>The Army Lawyer</u>, Sept. 1987, at 36.

⁵ The facts are taken from Judge Cox's opinion at 24 M.J. 247-48.

⁶ Id. at 247.

⁷ Chief Judge Everett Hinted that polygraph evidence might even meet the

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Frye test. Id. at 255 (Everett, C.J. concurring).

⁸ Id. at 251.

⁹ Id. at 253, n. 11.

¹⁰ Id. at 253.

¹¹ Polygraph evidence is per se excluded in the Fourth, Fifth, Tenth, Eleventh, and District of Columbia Circuits. United States v. Brevard, 739 F.2d 180 (4th Cir. 1974); United States v. Clark, 598 F.2d 994 (5th Cir. 1979), cert. denied, 449 U.S. 1128 (1981); <u>United States v. Hunter</u>, 672 F.2d 815 (10th Cir. 1982); <u>United States v. Hilton</u>, 772 F.2d 783, 785 (11th Cir. 1985) (citing Clark, supra). Frye v. United States, 293 F. 1013 (D.C. Cir. 1923). Unstipulated polygraph evidence is per se inadmissible in the Sixth, Eighth, and Ninth Circuits. Poole v. Perini, 659 F.2d 730, 735 (6th Cir. 1981), cert. denied, 455 U.S. 910 (1982); United States v. Alexander, 526 F.2d 161, 163-170 (8th Cir. 1975); Brown v. Darcy, 783 F.2d 1389 (9th Cir. 1986). No United States Court of Appeals has affirmed the admission of unstipulated polygraph evidence. Also, no federal circuit court has found that a trial judge abused his discretion in excluding polygraph evidence. Brown, 783 F.2d at 1395. Most states exclude all polygraph evidence. At least fifteen states permit polygraph evidence by stipulation of both parties. Only two states (New Mexico and Massachusetts) have upheld the admissibility of polygraph evidence without stipulation. See generally P. Gianelli and E. Imwinkelreid, Scientific Evidence 244-256 (1986).

¹² The court expressed its confidence that courts-martial panels will not be overwhelmed by polygraph evidence. See supra note 9. Other military courts have reached an opposite conclusion. See, e.g. <u>United States v. Ledlow</u>, 29 C.M.R. 475 (C.M.A. 1960); <u>United States v. Helton</u>, 10 M.J. 820 (A.F.C.M.R. 1981).

¹³ Gipson, 24 M.J. at 253.

¹⁴ <u>Manual for Courts-Martial, United States</u>, 1984, Mil. R. Evid. 403 [hereinafter Mil. R. Evid.].

15 Gipson, 24 M.J. at 253.

 16 Judge Sullivan dissented, finding no abuse of discretion where the military judge avoided a battle of experts by not permitting either party to lay a foundation for the polygraph evidence. He also alluded to concerns about the reliability of polygraph test results in general. Id. at 255-56 (Sullivan, J. dissenting).

17 Id. at 249.
18 Id.
19 Id. at 252.
20 Id. at 255 (Everett, C.J. concurring).

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²¹ Id. at 255. n. 2.

²² <u>United States v. Abeyta</u>, 25 M.J. 97 (C.M.A. 1987) cert. denied, 108 S.Ct. 752 (1987).

²³ Judge Cox reaffirms what can at least be described as a preliminary preference for negative results when he notes, "[a]rguably, as indicated, there may be a rational basis for distinguishing between positive and negative results." Gipson, 24 M.J. at 252.

 24 Of course, counsel should be concerned about the qualifications of the examiner and the suitability of the examinee and issue(s) to reliable polygraph testing.

²⁵ One federal circuit court has held that a prosecutor's failure to articulate reasons for refusing to stipulate to the admissibility of a test where state law allowed stipulations deprived the defendant of due process. McMorris v. Israel, 643 F.2d 458 (7th Cir. 1981), cert. denied, 455 U.S. 967 (1982). Justice Rehnquist, in his dissent to the denial of certiorari, described McMorris as establishing a rule requiring a prosecutor to explain his reasons for "refusing to stipulate to the admission of otherwise inadmissible evidence" and cites approvingly cases from two other federal circuits holding that a defendant's constitutional right to a fair trial is not infringed when the prosecutor refuses to stipulate to the admissibility of polygraph test results. Israel v. McMorris, 455 U.S. 967, 969, 971 (1982) (Rehnquist, J., dissenting from denial of certiorari). <u>McMorris</u> raises some troubling questions. Can a prosecutor refuse to stipulate simply because he does not trust polygraph test results? In other words, can a prosecutor effectively veto the admissibility of test results by ensuring that the test will not be conducted under optimum conditions, i.e., pursuant to stipulation? My advice is to give some reasons based on suitability of the examinee or issue(s) to testing or on the qualifications of the examiner.

²⁷ See Mil. R. Evid. 801 (d)(2).

²⁸ <u>Manual for Courts-Martial, United States</u>, 1984, Rule for Courts-Martial 701(b)(3) and (4).

29 Gipson, 24 M.J. at 253 n.12.

 30 Cf. <u>Brown v. United States</u>, 356 U.S. 148 (1958) (any witness can be held in contempt of court for improperly invoking privilege against self-incrimination in response to cross-examination questions); Mil. R. Evid. 301(f)(2) (Military judge may strike testimony of witness who asserts privilege against self-incrimination in response to non-collateral cross-examination questions.)

³¹ Gipson, 24 M.J. at 253.

 32 Judge Cox notes that "[a] few courts have experimented with the notion that an accuses has an independent, constitutional right to present favorable polygraph evidence. We do not subscribe to this theory because there

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can be no right to present evidence ... unless it is shown to be helpful and relevant." Id. at 252. In fact, only two state courts (lower courts) and one federal district court have held that an individual has a constitutional right to present polygraph evidence. See P. Gianelli and E. Imwinkelreid, supra note 11, at 257-59. The district court decision was overruled on appeal. Jackson v. Garrison, 677 F.2d 371 (4th Cir. 1981), cert. denied, 454 U.S. 1036.

³³ See generally P. Gianelli and E. Imwinkelreid, supra note 11, at 248-54.

³⁴ See <u>State v. Dean</u>, 103 Wis. 2d 228, 307 N.W. 2d 628, 646-649 (1981) for an excellent discussion of this issue.

³⁵ Id. at 653.

³⁶ Gipson, 24 M.J. at 253.

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By

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Vittorio Benussi was born on January 17, 1878 in Trieste, Italy. He studied philosophy in Graz (Austria) - psychology was not yet an independent field of science - and received a Ph.D. degree in 1900 from the University of Graz under Alexius Meinong, an Austrian Philosophy - with the impressive complete name of Alexius Meinong, Ritter von Handschuchsheim (1853-1920). From 1902 to 1914 Benussi was Privatdozent of Philosophy in Graz (University lecturer without tenure) and did extensive experimental research in the field of perception of forms, optical illusions, visually and tactilely perceived movements, space perception, weight perception, and perception of time (Psychologie der Zeitauffassung, 1913, a book of over 500 pages). While Benussi was in Graz he also acquired experience in hypnotic induction techniques. Benussi developed the theory of form quality and is considered the founder and most important scientists of the Austrian School of Form Quality. This school is also called the School of Act Psychology. In the second decade of this century the importance of this school decreased and was replaced by the Gestalt School. Both schools are highly related in their research subjects but differ slightly in the explanations of Gestalt perception.

From 1914 to 1919 Benussi was a faculty member of the University of Vienna. In the spring of 1919 he received a call from the University of Padua which he apparently accepted for political reasons. It allowed him to return to Italy.

From the years in Graz, Benussi was accustomed to a well-equipped laboratory, but in Padua there was no laboratory, the entire available equipment consisted of a box of chalk. Because of these limited research facilities he focused his research efforts to hypnosis.

At this time hypnosis was either subject of research or was used for psychotherapeutical intervention. Benussi used hypnosis as a tool to investigate perception. This approach was new. He discovered that it is possible to discriminate sleep, wakefulness and the state of hypnosis by certain breathing patterns and used these patterns as a criterion of the hypnotic state which he had created in his subjects.

See also N. Ansley (1988) Vittorio Benussi and research. <u>Polygraph</u>, <u>17</u>, (3), 121 and V. Benussi (1914), Die atmungsymptome der luge. <u>Archiv</u> <u>Fuer Die Gessampte Psychologie</u>, <u>31</u>, 244-273. Translated in <u>Polygraph</u> (1975, Mar.) <u>4</u>, 52-76.

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Benussi carried out the experiment about the respiratory symptoms of lying during his years in Graz. During this experiment he advised his subjects to read cards containing digits, letters, and pictures. They were questioned as to the nature, number, and arrangement of the symbols and were asked to describe the picture and to read the symbols in a specified order. Some cards were marked with a red star, the lie cards. At these cards his subjects were instructed to lie upon every point. A number of spectators were present to enhance the subjects' emotional state. His subjects were instructed to try as hard as possible to deceive these listening spectators. He recorded three to five breathing cycles before and after the answer and calculated the quotient of the inhalation to exhalation time. In the case of true statements, the average of these quotients was almost always greater before the statement than afterwards; in case of wrong statements, the average was smaller. The ratios did not change even when his subjects intentionally controlled their breathing following a metronome.

Until this day, it is an unresolved riddle why Benussi's results regarding the variations in the inhalation-exhalation ratio during truth and deception were never replicated. Burtt (1921) tried it in an experiment with rather sophisticated instrumentation that allowed him to record the inhalation and exhalation ratios directly from an instrument during the experiments. He thus avoided to measure the inhalation and exhalation time from the charts. The actual experiment was carried out during the winter of 1919/1920 at the Ohio State University. He used 14 subjects but not all of them in all series. He followed Benussi's arrangements very closely, used similar cards, similar questions, and even had spectators present. He stated that there is "a certain correspondence but not a striking one, between the I/E and telling of truth or falsehood" (page 8). IN fact he received Benussi's symptoms for lying in 49% of the questions and in 53% when telling the truth. 52% of the lie cards were correctly identified and 64% of the truth cards - indeed not a striking result.

Otto Schutz (1924), a M.D. of the district and City Court in Leipzig attempted replication using jailed defendants. Since he was part of the court system his subjects were not cooperative and this made his recordings distorted and unreadable. Schutz attributed this fact to the abnormality of his subjects. Otto Klemm (1931) tried to replicate this experiment again unsuccessfully. Klemm was not a member of the court system but he was required to have a judge present during his experiment who actually did the questioning. His experiment took place in the jail. His subjects were not cooperative either. From today's standpoint neither Schutz nor Klemm really proved or disproved anything because of flaws in the experimental procedures but even with today's improved knowledge of pitfalls of experimentation and avoidance of them, the change of the inhalation/exhalation ratio during truth and deception could not be replicated. Benussi's Contemporaries already speculated why. Seelig (1927), a colleague of Benussi in Graz conducted another experiment and included several of the same persons that served as subjects in Benussi's experiment. He conducted a kind of mock crime experiment and did not get Benussi's symptoms of truth and deception in the breathing. He suggested that Benussi's special experimental design was the reason for his results. Benussi's subjects had to choose themselves how to lie. This strong intellectual concentration and these two conditions were actually responsible for the results, not the act of simple lying.

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Benussi was an experimental psychologist in the field of perception, he was not involved in lie detection or "Tatbestandsdiagnostik" as it was called at that time in German speaking countries.

Benussi died at the age of 50 in Padua in 1927.

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LAW NOTES

By

Norman Ansley

JURY POLLED

In the first <u>Anderson v. People</u> trial [Boulder District Court, Boulder, Colorado, January 23, 1980, followed by <u>People v. Anderson</u>, 637 P.2d 354 (Colo. 1981)], the judge admitted over objection evidence of a polygraph examination taken by Anderson, which indicated Anderson was truthful in denying rape and robbery. The trial ended with a hung jury. Anderson was put on trial again in January 1980, and the trial judge ruled again that the testimony of the polygraph examiner was admissible, again over objection. This time the jury found Anderson not guilty. After the trial, the Judge polled the jury and asked them about the polygraph evidence. He subsequently told the press that "They said their decision didn't turn on the polygraph evidence. In fact, two of them were not convinced by the polygraph expert. They didn't think that the polygraph results are reliable. the jurors said the key issue in the case was identification."

In <u>U.S. v. Grasso</u>, Federal District Court, Boston, 1973 [unreported], a jury found the defendant not guilty following a trial which included the admission of the results of a polygraph examination. Prior to that testimony a foundation was put on the record by several expert examiners. The polygraph evidence was admitted without objection by the prosecution. A poll of eight of the twelve jurors indicated they were impressed with the foundation testimony and were convinced that the polygraph did what it purported to do. However, being at somewhat of a loss as to what to do with the testimony of the examiner, they put the testimony aside to see if they could not arrive at a verdict by considering the other evidence, and if not, they would use it. They did arrive at a decision without it. See Barnett, Frederick J. (1973). How does a jury view polygraph examination results? Polygraph, 2 (4), 275-277.

The second trial of Kenny for robbery included the admission of a Pathometer [only an electrodermal channel] test result. The results were admitted over objection. The test was given by Father Walter Summers, a psychologist from Fordham University, who testified that the device, when properly employed, was 100 percent efficient and accurate in the detection of deception. A poll of jurors followed the trial, and the question was "Was the lie detector testimony, in your opinion, conclusive proof of the innocence or guilty of Kenny?" Six answered "yes," four said "no," and two did not respond to the poll. See Forkosch, M.D. (1939) The lie detector and the courts. New York University Law Quarterly, 16, 202-231.

In a later case in New York, <u>People v. Daniels</u>, 102 Misc. 2nd 540 (Supreme Court, Westchester County, 1979) the results of a polygraph examination was admitted over objection of the prosecution, and the jury found

the defendant not guilty. In a poll, the jurors said the polygraph results had no influence on their decision.

The first case of successful admissibility of polygraph test results is probably <u>State v. Loniello</u>, Circuit Court of Columbia County, Wisconsin (1935). In that case, polygraph evidence was admitted by stipulation. The test results were unfavorable to the defendants, and the jury found them guilty of assault with intent to murder. A poll of the jury indicated that each said the polygraph and the testimony were of considerable help to them in determining the credibility of not only the defendants themselves, but also the other witnesses for the state who contradicted much of the testimony of the defendants. See Inbau, Fred. E. (1935) Detection of deception technique admitted as evidence. <u>Journal of the American Institute of Criminal Law and Criminology</u>, <u>26</u>, 262+.

POLYGRAPH EVIDENCE AND THE JURY: A BIBLIOGRAPHY

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FEDERAL CASE ABSTRACTS

SEVENIH CIRCUIT

<u>U.S. v. Dietrich</u>, 854 F.2d 1056 (7th Cir. 1988)

A government witness stated that he had taken a polygraph examination. The judge told the jury the remark was stricken from the record and to disregard it. A motion for a mistrial was denied, and the defendant appealed, claiming reversible error. No error, said the Court of Appeals, "A

Law Notes

district court's decision concerning polygraph results deserves considerable deference." <u>U.S. v. Williams</u>, 737 F.2d 594 (7th Cir. 1984). thus, on appeal, they would not reverse a decision to admit or exclude polygraph evidence, absent abuse of discretion. The appellate court was also of the opinion that the admonishment to the jury was sufficient to cure potential error. Affirmed.

EIGHIH CIRCUIT

U.S. v. St. Clair, 855 F.2d 518 (8th Cir. 1988)

At trial, a police officer testified that the defendant refused a polygraph test. A request for a mistrial was denied but he jury was instructed by the judge to disregard that testimony. Such testimony is improper, <u>Rothgeb v. U.S.</u>, 789 F.2d 647 (8th Cir. 1986). The 8th Circuit Court of Appeals held that in this case the instruction did not cure the error because credibility of the defendant was critical to the outcome of the verdict. Reversed and remanded for this and other reasons.

STATE CASE ABSTRACTS

CONNECTICUT

State v. Plourde, 205 Conn. 455, 545 P.2d 1071 (Conn. 1988)

The Supreme Court of Connecticut agreed with the state that, because of its minimal probative value, the defendant's willingness to take a polygraph test does not significantly support the reliability of the defendant's testimony. In excluding the evidence of the willingness of the defendant to take a polygraph test, the trial court did not err.

ALASKA

Haakanson v. State, 760 P.2d 1030 (Alaska App. 1988)

Defendant claimed trial court erred in not allowing his polygraph test results admitted into evidence, claiming advances in technology and reliability of polygraph tests in the last ten years, sufficient to satisfy <u>Frye</u>, as required in <u>Pulakis v. State</u>, 476 P.2d 474 (Alaska 1970). The Court of Appeals of Alaska noted that the sole witness presented by the defense was the examiner who gave the test. The court said he was not a member of the scientific community for determining reliability. Moreover, in <u>Van Meter v. State</u>, 743 P.2d 388, the same appellate court upheld a trial court's decision not to hold an evidentiary hearing for the same reason, and involving the same examiner. On the other hand, the court found in <u>Haakanson</u>, that the state's witness was a psychology professor who was in a better position to evaluate the acceptance level of polygraph tests within the scientific community than was the examiner.

Reversed and remanded for a new trial for other reasons.

Norman Ansley

CALIFORNIA

People v. Rich, 248 Cal.Rptr. 510 (Cal. 1988)

The defendant was found guilty of four counts of murder, three counts of kidnapping, one count of rape by force, and other related offenses. On automatic appeal from the death sentence the subject said that his confessions after failing a third polygraph test should have been inadmissible because he was not given a new <u>Miranda</u> warning after the test. A <u>Miranda</u> warning was given before the test. Also, the defendant claimed his counsel should not have stipulated to a polygraph test.

The Supreme Court of California saw a sound tactical reason for defendant's attorney to have made such a decision. For the same reason the court rejected a claim that counsel should have objected to the examiner's testimony that the defendant was the only person who failed a polygraph examination. The court found no error in testimony about the circumstances surrounding the defendant's agreement to take the polygraph examinations, and no error in the admissibility of the confession. Actually, the defendant took one test, on another day was scheduled and began a second which was interrupted, and on a third day, took another examination.

The judgment of death was affirmed.

INDIANA

Couch v. State, 527 N.E.2d 183 (Ind. 1988)

The defendant claimed error in that the police officer testified that the defendant took a polygraph test and was still a suspect, inferring failure of the test. There was no stipulation on admissibility. The trial court ordered the questions and answers stricken and admonished the jury to disregard them.

The Supreme Court of Indiana said that was not enough to remove "the grave peril he was subjected to," and said the testimony was reversible error. Reversed and remanded for a new trial.

OHIO

State v. Hill, 37 Ohio App.3d 72, 523 N.E.2d 894 (1988)

Defendant claimed error when the prosecution witness testified about a polygraph examination, and further error by the trial court in permitting the prosecution to comment on it in their closing argument. The appellate court observed that absent an agreement, and there was none, such testimony is improper. However, error was rectified by the court's instruction. Also, mention of a polygraph test elicited by defense counsel, if error, was invited. The defendant also claimed error in that the court did not order production of questions asked and answers given during the polygraph test mentioned at trial. No error, said the appellate court, because the test was inadmissible, lacking stipulation. Moreover, the prosecution couldn't find a tangible record, so there was nothing to discover. Judgment affirmed.

City of Zanesville v. Sheets, 38 Ohio App.3d 24, 525 N.E.2d 842 (1988)

The city appealed from judgment of the court of common pleas which held that polygraph tests were not admissible during disciplinary proceedings of a policeman. The Court of Appeals of Ohio said that Ohio law does not allow the results of a polygraph examination to be used as evidence in criminal cases, absent a stipulation, and at the discretion of the trial judge that the test was properly conducted, plus as instruction to a jury. Because these conditions were not met, the examination results were properly excluded by the civil service commission.

RHODE ISLAND

State v. Dery, 545 A.2d 1014 (R.I. 1988)

In an arson case, the state sought to preclude the admissibility of polygraph evidence by the defendant. His test was administered by Everett Armour, a former detective lieutenant with the Rhode Island State Police, who would testify that Dery was telling the truth when he stated he did not start the fire. The Supreme Court of Rhode Island was of the opinion that the introduction of any information regarding polygraph examination into evidence for any purpose would be more likely to mislead the jury rather than assist it in determining the factual issues involved.

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RESOURCE MATERIALS ON THE POLYGRAPH AND CHILD ABUSE CASES

By

Norman Ansley

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Commonwealth v. McIntosh, 435 A.2d 1263 (Pa.Super. 1981)

State v. Turner, 675 P.2d 539 (Utah 1983)

ABSTRACTS

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Belief and Role Selection

M.T. Bradley (1988). Choice and the detection of deception. <u>Perception and Motor Skills</u>, <u>66</u>, 43-48.

A laboratory experiment in which the subjects were allowed to choose the role of innocent or thief. If they chose innocent they received a fixed fee of \$4.00, regardless of outcome of the test. If they chose a guilty role, they were to steal \$10.00 and could keep it if the polygraph test incorrectly called them innocent. A questionnaire was given to the 76 psychology students who were subjects, asking them for their estimate of polygraph accuracy. Also, the Eysenck Personality Inventory was administered to each subject.

The only physiological measure used was skin resistance response. The mock crime was a theft of ten dollars from a desk. The test format was a Backster zone comparison, with three repetitions, and 20 second interstimulus intervals. The numerical scoring was +/-1 for each relevant question with a +/-9 the maximum possible, and an inconclusive range of +/-1.

56 subjects selected the safe innocent role, while only 20 chose the risk role of guilty. 15 of the 38 men and 5 of the 38 women chose the thief's role. there was no correlation between the subject's estimates of accuracy and the detection rate, but there was a correlation between the detection rate and the role they chose in that those who chose the guilty role believed the polygraph would be less effective on them as guilty than as innocent, whereas those who thought the polygraph would be more effective of them if they were guilty chose to be innocent. Personality variables as provided by good, py good, p

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The accuracy of the tests was 100% for the deceptive (n.20) and 67% for the nondeceptive (n.56), inconclusives excluded.

For reprints, write to M.T. Bradley, Division of Social Science, P.O. Box 5050, University of New Brunswick, Saint John, New Brunswick, E2L 415, Canada.

Eyewitness Memory

Neal E.A. Kroll, Keith H. Ogawa and James E. Nieters (1988). Eyewitness memory and the importance of sequential information. <u>Bulletin of the</u> <u>Psychonomic Society</u>, <u>26</u> (5), 395-398.

Misleading post-event information increased the probability of incorrectly recognizing a detail suggested by the misleading information. this often-reproduced finding has been interpreted as demonstrating both memory impermanence and recoding. However, recent evidence suggests that postevent information affects not the memory of the original event, but rather the guessing bias when memory fails. An experiment is presented that supports this response-bias interpretation. Providing witnesses with the original sequence information, even after they had already chosen the incorrect detail on an earlier test, greatly enhanced the probability of their retrieving the original memory, previously believed to be irretrievable, and improved the validity of the witnesses' confidence ratings.

University of California, Davis, CA 95616.

<u>Recognition and Recollection</u>

John M. Gardiner (1988). Functional aspects of recollective experience. <u>Memory and Cognition</u>, <u>16</u> (4), 309-313.

The functional relationship between recognition memory and conscious awareness was examined in two experiments in which subjects indicated when recognizing a word whether or not they could consciously recollect its prior occurrence in the study list. Both levels of processing and generation effects were found to occur only for recognition accompanied by conscious recollection. Recognition in the absence of conscious recollection, although less likely, was generally reliable and uninfluenced by encoding conditions. These results are consistent with dual-process theories of recognition, which assume that recognition and timing in implicit memory have a common component. And they strengthen the case for making a functional distinction between episodic memory and other memory systems.

For reprints write to John M. Gardiner, Memory & Cognition Research Group, the City University, Northampton square, London ECLV OHB, England.

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<u> Law - Interrogation - Miranda</u>

Mark Berger (1988). Compromise and continuity: Miranda waivers, confession admissibility and the retention of interrogation protections. <u>University of Pittsburgh Law Review</u>, <u>49</u> (4), 1007-1064.

A review of the decisions and the changes in interpretations that have taken place in the past twenty years. Berger's thesis is that reversal of <u>Miranda</u> is not necessary because the current law and rules represent an accommodation of competing interests in interrogation issues, and that as now practiced, <u>Miranda</u> closely parallels the due process voluntariness test. Professor Berger even goes to far as to suggest that <u>Miranda</u> procedures may help insure the admissibility of confessions, rather than serving as an obstacle to police interrogation. The article is well-researched and argued, but the author apparently knows nothing about the real world of law enforcement. Worth reading despite his conclusions.

Test Environment

Robert Gifford (1988). Light, decor, arousal, comfort and communication. <u>Journal of Environmental Psychology</u>, <u>8</u>, 177-189.

The effect of lighting level and room decor on interpersonal communication was investigated. Arousal and comfort models were invoked to generate hypotheses that (a) brighter lighting would stimulate more general communication, (b) lower lighting levels would encourage more intimate communication, (c) over time, lower light levels would dampen both general and intimate communication, and (d) home-like decor would encourage more general and more intimate communication. In a 2 X 2 between-subjects design, pairs of female friends wrote two letters to one another in bright vs. soft lighting and office-like vs. home-like decor. All the hypotheses were confirmed except that brighter light encouraged more rather than less intimate communication. A question for the future is whether brighter-than-normal lighting actually increases communications, in contrast to the present finding that normally bright lighting maintains communication levels while subnormal lighting levels diminish it.

For reprints, write to Professor Robert Gifford, Department of Psychology, University of Victoria, Victoria, British Columbia, Canada V8W 2Y2.

Lying

Charles V. Ford, M.D., Bryan H. King, M.D. and Marc H. Hollender, M.D. (1988, May). Lies and liars: Psychiatric aspects of prevarication. <u>Ameri-</u> <u>can Journal of Psychiatry</u>, <u>145</u> (5), 554-562.

The authors discuss the phenomenon of lying, a common process that has received remarkably little scrutiny. The ubiquity of lying and other forms of deception, say the authors, suggests that they have normal aspects, and it becomes pathological only when it is persistent or destructive to the quality of a person's life. Antisocial, histrionic, narcissistic, borderline, and compulsive personalities have been associated with lying. The

treatment of lying needs to be individualized according to the overall symptom complex in which it is embedded.

For copies of reprints write to Dr. Charles V. Ford, Department of Psychiatry and Behavioral Sciences, University of Arkansas for Medical Sciences, 4301 West Markham, Slot 554, Little Rock, Arkansas 72205.

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