

Contents

Chapter	Page		
1. SUMMARY		4. REVIEW AND ANALYSIS OF POLYGRAPH	
Introduction	3	FIELD STUDIES	47
Federal Polygraph Use	3	Introduction	47
Federal Polygraph Policy Changes	3	Study Selection	47
Polygraph Validity	4	Studies Excluded	48
Findings	4	Studies Included	49
Personnel Security Screening	4	Coding	51
Criminal Investigations	5	Findings and Discussion	51
False Negatives/Countermeasures	5	Variation Among Studies	52
False Positives	5	Studies Using Panel Criterion	
Voluntary v. Involuntary	6	and Examiners' Decisions	52
Polygraph Theory	6	Studies Using Confession as a Criterion	
Further Research	6	and Blind Evaluations	54
Chapter-by-Chapter Overview	6	Studies Using Judicial Outcomes	
Conclusions	7	and Original Examiners' Results	56
		Other Considerations	56
2. VARIETIES OF POLYGRAPH TESTING		Conclusions	58
AND USES	11	5. REVIEW AND ANALYSIS OF POLYGRAPH	
Introduction	11	ANALOG STUDIES	61
Polygraph Instrument	11	Introduction	61
Types of Testing Procedures	12	Characteristics of Analog Studies	61
The Pretest Interview	12	Study Selection	62
Types of Questions	14	Description of Studies	65
Polygraph Question Techniques	17	Control Question Technique	65
Post-Test Interview	23	University of Utah Studies	65
Uses of Polygraph Testing	23	Other Studies	68
Current Use	23	Concealed Information Tests	72
Conclusions	25	Lykken	72
3. CONTROVERSY OVER POLYGRAPH		Davidson	73
TESTING VALIDITY	29	Podlesny and Raskin	73
Introduction	29	Giesen and Rollison	73
Judicial Reviews	29	Balloun and Holmes	74
Polygraph Findings as Evidence	30	Bradley and Janisse	75
Laws Regulating Polygraphs in		Time	75
Employment Settings	31	Preemployment Screening	75
Federal Debate Over Polygraph Validity	32	Correa and Adams	75
The 1960's	32	Barland	76
The 1970's	34	Findings	78
The 1980's	35	6. FACTORS AFFECTING POLYGRAPH	
Draft Revision to DOD 5210.48	36	EXAMINATION VALIDITY	83
NSDD-84	36	Introduction	83
Administration Polygraph Policy	36	Polygraph Examiner, Subject, and Setting	83
Scientific Validity and Polygraph		Examiner	83
Research Reviews	37	Subjects	84
Definitions of Scientific Validity	37	Setting	86
Research Design	38	Countermeasures	87
False Positives and Negatives	38	Physical	87
Reviews of Polygraph Validity	39		
Conclusions	43		

Drugs	88
Hypnosis/Biofeedback	89
Mental	89
Research Implications of Factors	
Affecting Validity	91
Theory	91
Scoring	91
Question Techniques	91
Countermeasures	91
Comparison With Other Techniques	92
Field Studies	92
Conclusions	92
7. CONCLUSIONS	95
Introduction	95
Overall Scientific Conclusions	95
Specific Scientific Conclusions in	
Policy Context	97
Specific-Incident Criminal	
Investigations	97
Personnel Security Screening	99
False Negatives/Countermeasures	100
Voluntary, Involuntary	101
Further Research	101
Concluding Comment	102
<i>Appendixes</i>	
A. Informed Consent Forms	105
B. Results of the OTA Survey of Federal	
Government Polygraph Testing	107
C. Coding Form	114
D. Acronyms and Glossary	120

List of Tables

<i>Table No.</i>	<i>Page</i>
1. Polygraph Examinations Conducted by Federal Agencies, 1982	24
2. Reviews of Field Studies of Polygraph Validity	40
3. Characteristics of Field Studies	48
4. Mean Detection Rates as a Percentage of Total in Field Studies	52
5. Outcomes of Field Studies of Validity	53
6. Outcomes of Control Question Analog Studies of Validity	63
7. Outcomes of Guilty Knowledge Analog Studies of Validity	64
8. Mean Detection Rates as a Percentage of Total in Analog Studies of Control Question Technique	65
9. Mean Detection Rates as a Percentage of Total in Analog Studies of Guilty Knowledge Test	65
B-1 Number of Polygraph Exams and Examiners	108
B-2. Purpose of Polygraph Exam	109
B-3. Length and Results of Exams	111
B-4. Long-term Confirmation of Exam Results.	111
B-5. Selected Federal Agency Polygraph Research	113

List of Figures

<i>Figure No.</i>	<i>Page</i>
1. Debate at the Federal Level 1963-83	33