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✓ A VALIDITY STUDY OF
POLICE OFFICER SELECTION,
TRAINING AND PROMOTION

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PREFACE

This report describes a comprehensive study of the City of Houston Police Department's selection, training, and promotional procedures. The report is divided into nine volumes as follows:

- | | |
|-------------|--|
| Volume I | Research Overview, Summary and Bibliography for the Validity Study of Selection, Training and Promotion within the Houston Police Department |
| Volume II | Analysis of the Labor Force Composition within the Recruiting Area of the Houston Police Department |
| Volume III | Adverse Impact Analyses of the Selection, Training, Assignment and Promotion Procedures of the Houston Police Department |
| Volume IV | Job Analysis of Positions within the Houston Police Department |
| Volume V | Evaluation of the Selection Requirements of the Houston Police Department |
| Volume VI | Validation of the Physical Requirements for the Selection of Police Officers |
| Volume VII | Validation of the Personal Background Requirements for the Selection of Police Officers |
| Volume VIII | Evaluation and Validation of the Houston Police Department Academy and Probationary Training Period |
| Volume IX | Validation of the Houston Police Department Promotional Process |

While each volume is intended to stand alone as a unified component of the study, much of the data is referred to in several volumes, but presented in detail in only one volume. For example, the job analysis data reported in Volume IV

served as a foundation for the research described in Volumes V through IX. Consequently, at times the reader will need to refer to two or more volumes to obtain a comprehensive understanding of a specific component of the research.

It is expected that this report will be read by individuals who have a wide range of familiarity with the technical nature of the research study. Consequently, the authors have attempted to provide sufficient explanations of research methodology, statistical analyses, etc., to facilitate understanding by readers who do not have formal training or experience in the applied demographic and psychological research disciplines. At the same time, however, the authors have included appropriate technical information in the report, whereby professionals experienced in demographic and validation research can review the work of the research team.

Appendix A of Volume I is a comprehensive bibliography. The bibliography also contains detailed descriptions of reference materials cited or quoted (referred to by author and date) throughout all volumes of the report.

VOLUME I

RESEARCH OVERVIEW, SUMMARY AND BIBLIOGRAPHY
FOR THE VALIDITY STUDY OF SELECTION,
TRAINING AND PROMOTION WITHIN THE
HOUSTON POLICE DEPARTMENT

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CHAPTER 1

INTRODUCTION AND PROJECT OBJECTIVES

During the last several years, many organizations in both the public and private sectors have been concerned with increasing their effectiveness in the area of personnel administration as a means for achieving both organizational goals and providing the best possible opportunity for successful employee performance and growth. This trend is a product of both the awareness by organizations that progress can be achieved through people as well as technology and the emphasis that has been placed on appropriate personnel administration necessary for achieving fair employment opportunities.

In recent times considerable attention has been focused on the selection, training and promotion of individuals who serve in one particular job in public service - the police officer. The job itself is unique and demanding. Individuals holding the job are responsible for enforcing the laws of our society and rendering assistance to the public. While performing the job, in one situation a police officer may interact with individuals who intentionally have disobeyed the law and who do not accept the moral and ethical codes of society; in another situation the officer must render assistance to individuals whose lives have been traumatically interrupted by a crime, serious accident or some other unforeseen experience. Thus, in the day-to-day performance of the job, the police officer is expected to be

both an "enforcer", willing to take personal risk and apprehend criminals, and a humanitarian, able to have empathy and show compassion for those in need.

Following from the above demands, police officers must adjust emotionally and psychologically to the varying experiences they encounter during a "day's work". In recent times, the job has become even more stressful in that rapidly changing social and moral codes demand flexibility on the part of police officers. At the same time there has been a diminished public respect for police officers (some call them "pigs"), which often has created additional tension and placed increasing burdens on officers trying to carry out their responsibilities. Within this complex set of competing forces and values, officers must continually make judgments about people's behavior and what is "right" in terms of enforcing the law.

The responsibility delegated to a police officer is especially unique in that under prescribed circumstances the officer is empowered, if necessary, to take the life of another person. At the same time, the officer's personal life is at risk. According to statistics compiled by the Federal Bureau of Investigation and published as the report Crime in the United States, 129 officers in 1975 and 110 officers in 1976 gave their lives in the line of duty.

Clearly, as indicated by the President's Commission on Law Enforcement and Administration of Justice (1967), the police

officer job has become one of the most difficult and sensitive public service positions of our times.

Given the above job demands and requirements, it is essential that law enforcement agencies establish highly effective personnel administration practices to guide the recruitment, selection, training, assignment and promotion of individuals willing to pursue careers in law enforcement. Effective personnel administration begins with a comprehensive understanding of each of the various jobs performed within an organization, and a knowledge of the personal requirements or characteristics required by those individuals expected to successfully perform the jobs. Once known, this information can be used to study the various components of a personnel administration system, such as selection, training or promotion. In effect, this approach has been followed in the research program described by this report.

The City of Houston Police Department has established several entrance requirements, selection procedures, training programs and promotion procedures to insure that the Department is staffed with well-qualified personnel to provide effective law enforcement services of the best possible quality to the citizens of Houston, Texas. In order to evaluate these personnel administration practices and to establish selection, training and promotional procedures that will enhance the quality of Department personnel while maintaining fairness and impartiality, the Police Department determined the need for

the conduct of an extensive research program. Accordingly, this report describes the research investigation which is summarized in this first volume. The remaining volumes (II through IX) present in detail the various components of the research program (see Preface).

Project Objectives

The overall project objectives that guided the conduct of the research program are outlined below:

- Analyze and document the racial composition of the labor force within the geographical recruiting and selection area (500 mile radius) of the Houston Police Department.
- Analyze and evaluate the potential disproportionate or adverse impact of any of the Department's current selection, training, assignment and promotion requirements and procedures.
- Complete and document a comprehensive job analysis of all commissioned Class A, Class B and Class C positions within the Department.
- Analyze and evaluate the job relatedness and validity of all job requirements, personnel specifications and selection criteria and procedures for all Class A positions.

- Analyze and evaluate the job relatedness, efficiency, effectiveness and validity of the Department's Academy and probationary on-the-job training program for Class A officers.
- Analyze and evaluate the job relatedness and validity of the Department's current promotional system.

As indicated by the above objectives, the major portion of this study was focused on the selection, training and promotion processes that affect individuals seeking or holding positions as commissioned officers in the Headquarters, Uniformed and Detective Divisions of the Department (Class A personnel). However, during the course of the study consideration also was given to the selection requirements and promotion processes affecting the technical and professional (Class B) personnel providing identification and laboratory services within the Department and the communications (Class C) personnel.

Research Team

In order to complete this study a research team was assembled that was composed of the following professional personnel: seven individuals with doctoral degrees in applied psychology and a combined total of over 46 years of experience in the areas of research undertaken in this study; one researcher with a doctoral education and over 10 years' experience in both applied psychological and demographic research; one individual with a doctoral degree and 7 years' experience in

statistics; three persons currently studying for their doctoral degrees in applied psychology who have a combined total of over 5 years' research experience; and one person with a masters degree in applied economics and over 4 years' experience in demographic analyses.

In complement to the full-time research team, consultation about and review of the overall research design by Dr. Robert Guion, a nationally recognized authority on validation research, was accomplished early in the study. Additionally, Dr. John Costanzi, Associate Professor of Medicine at the University of Texas Medical School (Galveston Branch), with over 12 years of active experience in observing and evaluating the physiological requirements of jobs (especially in the U. S. Air Force), served as a consultant to the project and evaluated all medical selection criteria for Class A officers.

Organization of this Volume

Chapter 2 of this volume presents an overview of the project research design, while Chapters 3 through 6 summarize the major findings of this study. Chapter 3 briefly discusses the results of the labor force analysis (Volume II) and the adverse impact study (Volume III). Chapter 4 reviews the findings of the job analyses (Volumes IV and IVA) and validity studies (Volumes V, VI and VII) of the Department's selection requirements with emphasis on the Class A officer entry-level job. Chapter 5 summarizes the studies of the training process

(Volume VIII), and Chapter 6 discusses the validation of the promotional system (Volume IX).

Included as Appendix A to this volume is an extensive bibliography. This bibliography lists most of the reference sources reviewed or utilized during the study. The bibliography also contains detailed descriptions of reference materials cited or quoted (referenced by author and date) throughout all volumes of the report.

CHAPTER 2

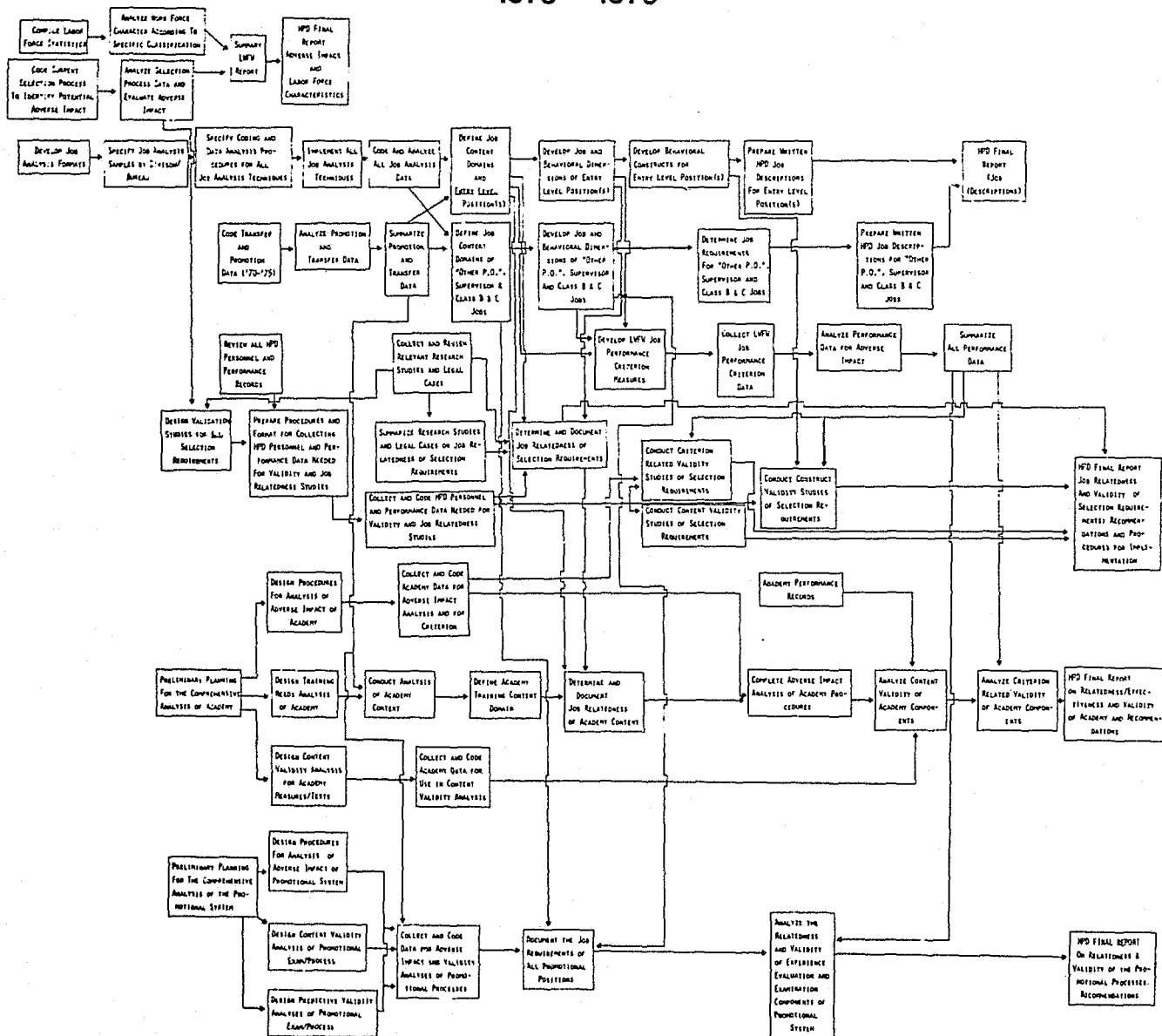
OVERVIEW OF THE RESEARCH PROGRAM

The research program had six primary components defined by the previously stated study objectives. These six components are stated below:

- Determination of the racial composition of the work force within a 500-mile radius of Houston.
- Determination of whether any of the Department's current selection, training, assignment and promotion requirements and procedures for Class A officers have a disproportionate impact on any group.
- Analyses of the job content domains of all Class A, B and C positions.
- Analyses and evaluations of all selection requirements for Class A officers to determine their job relatedness and validity.
- Analyses and evaluations of the training programs for the entry-level Class A police officer position to determine their job relatedness, efficiency, effectiveness and validity.
- Analyses and evaluations of the promotional system for Class A personnel to determine its job relatedness and validity.

The above components were organized into an overall research

plan was carried out from September 1975 through January 1977. A "flowchart" of this research plan is outlined in Chart 1. As indicated by the information presented in the chart, there were extensive interrelationships among the various study components. One of the components that had to be completed first was the job analyses, since job analysis information must serve as the basis for the validation of selection, training and promotional practices. Additionally, the researchers needed to identify early in the study which, if any, components of the Department's personnel administration processes have an adverse impact on members of a protected class. In turn, both the job analysis and adverse impact data defined the parameters and guided the specific research designs for the studies of the job relatedness and validity of the selection, training and promotional processes. As indicated by the overall research design presented in Chart 1, the labor force, adverse impact and job analysis phases of the study were undertaken first; then the results of these studies were used to guide and document the job relatedness and validity research completed during the latter phases of the project.

CHART 1

CHAPTER 3

LABOR FORCE AND ADVERSE IMPACT ANALYSES

This chapter summarizes the principal findings from two major components of the overall research program - the analysis of the labor force demographic composition within the Houston Police Department's geographic recruiting area, and the adverse impact analyses of the selection, assignment, training and promotion processes of the Department. The details of these studies are presented in Volumes II and III, respectively.

Labor Force Composition

During the last several years the Houston Police Department has been recruiting applicants from a recruiting area that geographically lies within a 500-mile radius of the City of Houston. This study was oriented toward identifying the composition of this recruiting area labor force in order to document the proportions of protected class groups (ethnic minorities and females) that would be eligible to seek employment as Class A officers with the Department. Considering the Department's age requirements, the study described the proportions of Whites, Blacks, Hispanics, males and females 18 to 35 years of age in the 1975 labor force residing within the 500-mile radius, as well as those living in the State of Texas, the Houston-Galveston City area, the Houston Standard Metropolitan Statistical Area (SMSA), and the City of Houston.

When comparing the labor force composition across all the various geographic areas mentioned above, it was found that the proportions of protected class groups are nearly the same for all areas. Thus, the proportions of protected class groups residing within the Houston Metropolitan area are nearly equivalent to the proportions living within a 500-mile radius of Houston. These two sets of data for the full-time labor force are summarized in Table 1. If the labor force is defined in terms of both part-time and full-time employees, the proportions vary slightly with some increase in the percentages of Blacks and females, and a corresponding reduction in the proportions of Whites and males.

Adverse Impact Analyses

An extensive study was completed to analyze the recruiting, selection, training, job assignment and promotion processes of the Houston Police Department for evidence of adverse impact. In this regard, adverse impact is defined as statistically significant differences in rates of selection (or completion) between protected class groups (i.e., females, Blacks or Hispanics in this study) and the majority class group, with results favoring the majority class. On the other hand, "disproportionate" impact is defined in this study as differences in rates between protected and majority class groups which statistically favor a protected group (i.e., Whites or males have lower rates of selection or completion than females, Blacks or Hispanics).

TABLE 1

COMPOSITION OF THE FULL-TIME LABOR FORCE
RESIDING WITHIN A 500-MILE RADIUS
OF THE CITY OF HOUSTON AND THE HOUSTON SMSA

	<u>Percent Residing Within</u>	
	<u>500-Mile Radius</u>	<u>Houston SMSA</u>
White	75	72
Black	16	16
Hispanic	9	12
<hr/>		
Male	72	72
Female	28	28

There were two important reasons for conducting the adverse impact analyses. First, the results pinpoint components of the Department's employment-related processes that may need to be remedied by some form of affirmative action. Second, the findings identify the specific components of the various employment-related processes that should be job related and valid if the process is to be continued by the Department. Thus, in this study the adverse impact analyses had considerable influence on the design of the job relatedness and validity studies summarized in Chapters 4, 5 and 6 of this volume.

It should be noted that the adverse impact analyses were conducted from a very broad perspective, as well as on a very detailed level that examined specific reasons for individuals' selection (completion) or rejection. The conduct of these detailed analyses followed the most recent equal employment opportunity guidelines (Equal Employment Opportunity Coordinating Council, July 14, 1976; U. S. Civil Service Commission, November 23, 1976) which provide that when "the total selection process for a job has no adverse impact, the individual components ... need not be evaluated separately for adverse impact. If a total selection process does have adverse impact, the individual components ... should be evaluated for adverse impact." However, at times the researchers have gone beyond the requirements set forth by the above guidelines. In particular, there are several instances in which a "total"

process was found to have *no* adverse impact, but the researchers continued with more detailed analyses of the "individual components", examining each for differential rates of selection (completion). This was accomplished in order to provide the Houston Police Department with as comprehensive knowledge as possible about the impact of each individual component of the employment-related processes analyzed in this study.

Commissioned Work Force Composition

Currently, the Department's total commissioned work force is under-represented by employees in three protected class groups - Blacks, Hispanics and females - relative to the composition of the full-time labor force in the Department's recruiting area. However, since August 1975 the Department has recruited and selected for Academy training proportions of ethnic minority group members that approximate, and in some cases exceed, their representation in the recruiting area labor force. Females, however, are not seeking commissioned positions or being selected in proportion to their representation in the labor force.

It should be recognized that one significant factor has not been taken into account in the above analyses - namely, the vocational interests of those in the eligible labor force. It is well recognized that an individual's attraction to and subsequent performance in any occupation is, in part, a function of personal

interests (Crites, 1969). Frequently, persons who enter an occupation with responsibilities that do not match their interests either will have difficulty achieving success and satisfaction in the job, or will leave the job in search of a career more compatible with their needs. To the knowledge of the researchers there is no data on the proportions of the eligible labor force (in total or by protected class group) that have an interest in work as a police officer. Consequently, even the most effective and unbiased recruiting and selection programs would have difficulty in attracting, employing and retaining individuals who did not have an interest in law enforcement.

Applicant Selection Adverse Impact Analyses

The total selection process for the commissioned Class A officer entry-level position consists of three major components: initial screening and selection for Academy training; graduation from the Academy; and successful completion of a six-month, on-the-job probationary training period. On an overall basis the entire process was found to have adverse impact for Blacks and females, but not for Hispanics. Nevertheless, more specific analyses were completed to identify potential adverse impact for all protected classes within the three major components of selection.

The largest number of individuals were rejected during the initial screening and selection phase which was found to have adverse impact for members of all protected classes. The applicant withdrawal rates, however, were found to be equal for all groups

(20 percent for females and 21 percent for all others). The reasons for rejection associated with the initial screening and selecting process were examined on an item-by-item basis to identify the source of adverse impact. Further, the selection factors were categorized into two major groups: physical requirements, and those related to personal or behavioral requirements. Additionally, the factors were categorized into one of three phases of the initial screening and selection process: Application; Physical Agility Test and Background Questionnaire; and Background Investigation/Polygraph/Final Interview.

A summary of the results which identify only those factors having adverse impact is presented in Table 2. While not specified by the data in Table 2, it should be noted that of a total of 37 specific factors considered in the initial screening and selection of applicants, only 10 were found to have adverse impact on one or more protected class groups. On the other hand, 20 factors has disproportionate impact for males and/or Whites. Further, among the screening and selection factors of a personal/behavioral nature, two of the six factors that had adverse impact also had disproportionate impact. Specifically, while "committed immoral offenses" had adverse impact for females, it had disproportionate impact for Whites; and while "predicted unsatisfactory Academy performance" had adverse impact for Hispanics, it also had disproportionate impact for males.

TABLE 2

SUMMARY OF ADVERSE IMPACT ANALYSES
OF INITIAL SCREENING AND SELECTION FACTORS BY STAGE

	<u>Adverse Impact for Protected Class(es)</u>
<u>Stage I - Application</u>	
Physical Characteristics	
→ Houston Civil Service Vision Test	Females
→ Height	Females; Hispanics
→ Weight	Females; Hispanics
Personal/Behavioral Characteristics	
→ Driver's License Requirement	Females; Blacks
→ Separation from Spouse	Females; Blacks
→ Credit History	Blacks
<u>Stage II - Physical Agility Test and Background Questionnaire</u>	
Physical Characteristics	
→ Physical Agility Test - Overall	Females; Hispanics
Event 1 (Run)	Females
Event 2 (Run and Climb)	Females
Event 3 (Drag)	Females
Event 4 (Jump)	Females
Event 5 (Pull Up)	None
<u>Stage III - Background Investigation/ Polygraph/Final Interview</u>	
Personal/Behavioral Characteristics	
→ Committed Immoral Offense(s)	Females
→ Family Instability	Females
→ Predicted Unsatisfactory Academy Performance	Hispanics
Physical Characteristics	
→ Medical Examination	None

As an interpretation of these results, screening devices of a physical nature do appear to cause adverse impact for females and Hispanics. On the other hand, indications of adverse impact for personal/behavioral characteristics appear minor and are offset in part by the disproportionate findings. That is, many more screening and selection factors of a personal/behavioral nature disqualify proportionately more Whites and males than members of protected class groups. Given the large number of applicants (8,536) it would be highly unusual and unlikely to find all groups of individuals rejected at the same rates for each of the 37 specific screening and selection factors. Furthermore, the statistical methods utilized may have been overly sensitive to minor differences in selection rates. Thus, differences of only a few percentage points in selection rates were statistically significant.

Academy Adverse Impact Analyses

An analysis of the Academy training indicated that the graduation rates are highest for Hispanics but are significantly lower for Blacks relative to Whites and for females relative to males. Further analyses indicated that Blacks have a lower graduation rate because of academic failures (performance on written exams), while females resign for personal reasons more frequently than males, thus resulting in a lower female graduation rate.

Probationary Period Adverse Impact Analyses

Completion of the six-month probationary training period was

almost 100 percent for all groups, and there was no adverse impact associated with this final phase of the selection process.

Job Assignments Adverse Impact Analyses

Analyses of the job assignments given to Class A police officers indicated certain differential rates of assignments for protected class groups. Specifically, ethnic minorities were more frequently assigned to areas such as Staff Services (Recruiting) and Special Investigations (Narcotics) relative to assignment in Patrol. However, such assignments are voluntary ones and are necessary relative to the Department's needs for minority recruitment and special forms of criminal investigation. Similar officers have been assigned more frequently to jobs in the Juvenile and Staff Services Divisions versus assignments in the Patrol and Traffic Bureaus, indicating some differential placement relative to males.

Promotional Process Adverse Impact Analyses

The last set of adverse impact analyses examined the promotional process within the Department. From these analyses it was concluded that there is no adverse impact for females in the promotional system. The results are inconclusive, however, for Blacks and Hispanics. Generally, ethnic minorities have been promoted at rates that would be expected, given the tenure of these officers and the numbers of officers seeking promotion.

Further, Black and Hispanic Officers have been assigned more frequently than White officers to jobs which historically have been advantageous to those seeking promotion. Finally, it was found that there is no adverse impact associated with the Department's performance evaluation process which influences promotional opportunity. On the other hand, in the analyses of ten specific promotional lists the total promotional scores of Blacks and/or Hispanics were significantly lower than Whites on four occasions. Further, Black and Hispanic officers on the average score lower than Whites on the Houston Civil Service Commission written exams, which comprise a major portion of the total promotion score.

Since certain of the analyses summarized above indicated adverse impact for components of the selection, training and promotion processes for commissioned, Class A positions within the Houston Police Department, appropriate job relatedness and validation studies have been completed as part of the overall research project.

CHAPTER 4

JOB ANALYSES AND VALIDATION OF SELECTION REQUIREMENTS

The determination of the job relatedness and validity of any selection requirement is based on the integrated results of job analyses and statistical validation research procedures. Accordingly, this chapter summarizes the major conclusions from a comprehensive job analysis study (Volume IV) and a number of specific validation studies (Volumes V, VI and VII).

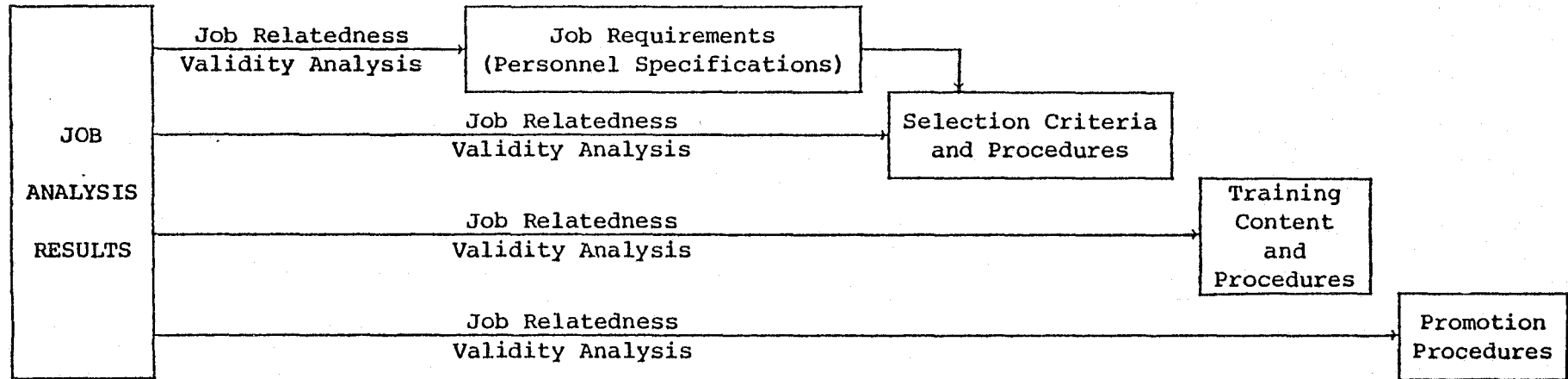
The Role of Job Analysis

The critical nature of job analysis in validation research is described by the example given in Figure 1. As indicated by the diagram, job analysis results are the foundation for documenting the job relatedness and validity of the various employment-related requirements and procedures studied in this research project. Because of this essential role, several different but complementary job analysis methodologies were utilized for data collection. These methodologies included direct observation, incumbent and supervisory interviews, task analysis, behavioral inventories, the critical incident technique, work diaries and specialized questionnaires.

It should be noted that job analysis results are presented in Volume IV for all Class A officer positions as well as the Class B and C jobs in the Department. Furthermore, these job analysis results have served as the basis for an extensive study of the Police Academy, a validation of the promotion

FIGURE 1

THE ROLE OF JOB ANALYSIS IN VALIDATION RESEARCH



Example: Job Analysis
Data Documents that:

● Police Officer must be able to overcome and arrest resistant actors of given sizes.	Applicant Physical Ability to control actors of "x" weight and "y" height.	Physical Agility Exam; Medical Exam	Self Defense; Arrest Procedures	Job Performance Ratings (e.g., appropriate use of force).
● Police Officer must investigate burglary at place of business	Applicant Ability to Follow Procedures	Background Investigation	Investigative Procedures and Reports	Written test of knowledge of investigative procedures.
● Police Officer must maintain sobriety on the job.	Applicant Moral Character	Background Investigation	Department Rules and Regulations; Professional Demeanor	Job Performance Ratings and incidence of disciplinary actions.

system for Class A officers, and as the basis for developing guidelines for the construction of future promotional tests for Class A, B and C personnel.

Job Relatedness and Validation Research

Based on current validation research guidelines, only those topics causing adverse impact need be studied for job relatedness and validity. The Houston Police Department, therefore, is obligated to demonstrate job relatedness, validity or other justification for maintaining the following Class A officer selection standards:

- Visual Acuity Requirements;
- Minimum Height Requirement;
- Weight Proportionate to Height Requirements;
- Current Driver's License Requirement;
- Not Being Separated from Spouse Requirement;
- Not Being Delinquent in Just Debts Requirement;
- Physical Agility Test Requirements;
- Immoral Behaviors Requirement;
- Family Stability Requirement;
- Ability to Complete the Academy Requirement.

Other selection requirements and considerations now in use by the Department were not discriminatory (i.e., no adverse impact) and do not need justification. These other selection standards include arrest and conviction records; educational

attainment; driving history and records; drug and alcohol usage; mental health and emotional control; employment stability; personal and employment references; radical group behaviors; military status and adjustment; citizenship; appearance; admitted theft and criminal behaviors; and falsification of application data.

Since each selection topic was researched, regardless of adverse impact findings, results for all topics investigated are reviewed in this chapter. All validity research was conducted according to current equal employment opportunity guidelines. In addition to the various job analysis and job relatedness procedures previously discussed, a variety of validation designs were utilized, including content validity, criterion-related validity and construct validity. Additional research procedures utilized a readability analysis of written materials and the construction of work sample tests. In conjunction with the validity investigations conducted for the Department, research reported by other law enforcement agencies also was reviewed for compatibility of conclusions.

All of the pertinent findings from job analyses, validation and other research projects were integrated to determine the final recommendation as to the validity of each selection requirement. For discussion purposes, these conclusions have been grouped into four categories:

1. Absolute minimum selection requirements

2. Important selection considerations
3. Requirements with inconclusive research findings
4. Other recommendations

Absolute Minimum Requirements

Selection topics and variables which are included in this category refer to those absolute standards which should be imposed on all applicants equally. Applicants not satisfying the following recommended entrance standards should be rejected automatically as candidates for the Class A entry-level officer position.

1. Residency Requirement

As long as the Department continues to conduct personal background investigations, applicants should live within a 500-mile radius of Houston. This requirement could be narrowed to residency within Texas, the Houston SMSA, or Harris County. In situations where other extensive background investigation data sources are available (i.e., applicant had prior law enforcement experience), this requirement may be waived.

2. Age Requirements

Applicants should be at least 19 years old at time of application to the Department. If desired, this requirement could be raised to 20 or 21, but such an increase could significantly affect applicant flow.

Based on logical and relevant medical considerations, it is

recommended that applicants be no older than 35 years of age by the time they would complete the Academy unless they have prior law enforcement experience. With relevant police experience, the maximum age could be increased, depending on the length of experience.

3. Education Requirement

Applicants should have at least a high school diploma, GED or equivalent. Careful consideration should be given to eliminating the GED or equivalency part of the requirement. There is some evidence from the readability analyses and validation research to suggest that the education requirement could be raised to some level of college course completion. However, the research findings were not definite in establishing an education requirement beyond the completion of high school.

All applicants must have the potential to complete the Department's Academy curriculum.

4. Criminality Requirements

Applicants should not have been convicted of any serious, violent or felony crime in either civilian or military life.

Applicants should not have engaged in any unapprehended criminal behaviors of a felony or violent nature.

5. Driver's License and Driving History Requirements

Applicants should have valid driver's licenses from

their states of residence and, if not Texas residents, they should have a valid Texas license prior to the beginning of Academy classes.

Applicants should not be in danger of having their driving licenses revoked or have received more than two moving traffic violation tickets in the preceding 12-month period.

Applicants should not have been convicted of either D.W.I. or D.U.I.D. violations.

6. Drugs and Alcohol Requirements

Applicants should not now be nor should have ever been addicted to alcohol or drugs.

Applicants should not have used any type of hallucinogenic drug (LSD, cocaine, etc.) recently; "recently" being defined as the period of time in which "flashbacks" reasonably occur or within the last 12 months, whichever is greater.

Applicants never should have engaged in the trafficking or sale of illegal drugs for profit.

7. Mental Health Requirements

Applicants should not have a history of serious mental illness or emotional problems requiring hospitalization or treatment.

Applicants with questionable background data (including the

occurrence of significant mental illnesses within their immediate families) not directly justifying disqualification should undergo a psychological assessment by a certified clinical psychologist or psychiatrist familiar with the job requirements, demands, duties and responsibilities of the police officer position in the Houston Police Department.

8. Falsification Requirements

Applicants should be disqualified for dishonesty, serious distortions or purposeful omissions during the selection process.

9. Medical History and Physical Condition Requirements

Applicants should not have any serious medical problems which could incapacitate them or interfere with their accomplishment of job demands. Disqualifying medical conditions include history of stomach or duodenal ulcers, convulsions, diabetes, migraine headaches, recurrent jaundice, chronic malaria, true arthritis, heart trouble, chronic or recurring acute anemia, asthma, important physical deformities (loss of eye, thumb, big toe, arm, etc.), poor general health and disproportionate overweight or underweight conditions.

Applicants should undergo a complete physical examination by a licensed physician familiar with the job requirements, demands, duties and responsibilities of the police officer position in the Houston Police Department. The physician should evaluate applicants' general health and medical

history and make the final determination as to importance of minor deformities and defects (i.e., loss of minor finger digit), and the effects of tuberculosis, syphilis, hay fever, rheumatic fever, polio, skin diseases and other illnesses which could incapacitate an officer and prevent the successful completion of his/her duties and responsibilities.

10. Vision and Hearing Requirements

Applicants should have visual acuity correctable to 20/20, with uncorrected acuity in each eye no worse than 20/100.

Applicants should not have astigmatisms or any type of active or progressive organic eye disease. Applicants should have normal color vision, depth perception and peripheral vision. Night vision also should be normal.

Applicants should be capable of normal hearing.

11. Work Sample Testing

Although validation research has justified a number of different work sample tasks, it is anticipated that some tasks will need to be discarded due to administrative problems, redundancy or other considerations. However, once the final work sample tests are selected from the tasks listed below, applicants should be required to successfully pass each of the content valid tests.

- Running, either in an obstacle course or a straight path
- Jumping across barriers and across an obstacle
- Climbing over a barrier

- Running up and down stairs
- Lifting a "person" to standing position
- Carrying and/or dragging a "person"
- Walking across a balance beam
- Pulling up and holding the position
- Changing a spare automobile tire
- Climbing up a ladder

Important Selection Considerations

The topics and items included in this category make an important contribution to the overall selection process and should be considered when evaluating police officer applicants. These items normally should not be established as "hard and fast" rules or absolute requirements, however. Rather, the topics and information cited in this category were found to be indicative of relevant job behaviors and essential underlying personality constructs important to the police officer job. Consequently, these topics and items should be considered together with other background data.

Nonetheless, severe or extremely negative information for these variables and topics could be grounds for rejecting an applicant. Table 3 presents a summary of these topics and items.

When evaluating the items in Table 3, it is important to consider any extenuating circumstances which could affect

TABLE 3

SUMMARY OF TOPICS AND ITEMS WHICH SHOULD BE CONSIDERED
WHEN EVALUATING APPLICANTS

CRIMINAL BEHAVIORS

- Juvenile Arrests and Convictions
- Adult Arrests and Convictions
- Misdemeanor Arrests and Convictions
- Felony Arrests and Convictions
- Non-apprehended Criminal Behaviors
- Military Convictions and Criminal Behaviors

THEFT

- Number of Times Stolen Things
- Purchases of Stolen Goods
- Recency of Thefts

MILITARY HISTORY

- Reenlistment and Discharge Codes
- Number of Disciplinary Actions Received
- Adjustment for Military Life

EMPLOYMENT STABILITY AND EMPLOYMENT REFERENCES

- Currently Employed
- Past Employment Tenures
- Why Left Last Job
- Times Fired
- Times Quit without Proper Notice
- A Variety of Employer Reference Ratings
- Peer Ratings

HIGH SCHOOL HISTORY

- Highest Grade Attained
- High School Grades
- Times Placed on Probation
- High School Attitude/Seriousness
- Probability of Completing the Academy

COLLEGE HISTORY

- Ever Attend College
- Number of Law Enforcement Courses
- Times Dropped out of School
- Number of Courses Failed
- Overall Grade Point Average
- Type of Degree Attained
- Attitude Toward Studies
- Percent Education Financially Self-supported
- Probability of Completing the Academy

TABLE 3 continued

FINANCIAL CREDIT AND MATURITY

Ever Establish Credit
Age Financially Independent
Number of Bounced Checks Written
Current Financial Condition
Credit Bureau Rating
Number Accounts Behind One Month or More
Number of Months Behind on Worst Account
Number of Times Belongings were Repossessed
Number of Times Credit Was Refused

EMOTIONAL CONTROL AND PSYCHOLOGICAL ADJUSTMENT

Ever Have Psychological Problems
Have an Active Temper
Times Lost Temper During Last Year
Number of Fights as Adult
Number of Times Hit Spouse

PERSONAL REFERENCES AND PREJUDICE

Racial Prejudice
Religious Prejudice
Prejudice Toward Other Groups
Evaluations from Personal Friends, Neighbors, Relatives, etc.

DRINKING HABITS

Average Number of Drinks per Week
Number of Times Drunk in Last Year
Number of Times D.W.I. in Last Year
Number of Times High in Last Year
Number of Times Drove While High in Last Year

DRUG USAGE

Use of Marijuana
Use of Hard Drugs
Recency of Drug Use

MARITAL STABILITY AND ADJUSTMENT

Ever Married
Times Hit Spouse
Amount Argue with Spouse
Ever Commit Adultery

IMMORAL BEHAVIORS

Date Married Persons (Single Applicant)
Number of Married Persons Dated
Commit Adultery
Number of Spouses Committed Adultery Against

DRIVING HISTORY

Number of Moving Tickets in Last Year

TABLE 3 continued

Number of Accidents in Last Year
Evaluation of Driving Habits

RESERVATIONS ABOUT POLICE WORK

Using Force to Subdue Actors
Injuring Someone
Following All Orders

RADICAL GROUP MEMBERSHIP

interpretation of the applicant's behaviors. The most common extenuating circumstances include severity of incident or behavior, age at occurrence, recency and frequency of occurrence, reasons for behavior and probabilities of recurrence.

Requirements with Inconclusive Research Findings

Due to restricted ranges, falsification and other research problems, certain requirements were difficult to study, although an attempt was made to investigate them. Of these requirements, the following were particularly affected by research limitations and resulted in inconclusive findings: homosexual behaviors, other sexual abnormalities, marital status, unwed parenthood, abortions, military draft code, height and weight.

Sexual behaviors. Although data relating to homosexuality and abnormal sexual practices did not attain statistical significance, the findings were ambiguous due to applicant response falsification and restriction in range problems. While disqualification for personal sexual preferences cannot be justified by the current research findings, there is reason to suspect that many types of sexual abnormalities are related to basic personality defects. Furthermore, since there was no adverse impact for items related to sexual preferences, such topics can be used in the selection process. Therefore, when applicants display tendencies toward non-harmful sexually deviant behaviors, it is recommended that the Department consult with

a certified clinical psychologist or psychiatrist as to the applicant's suitability for a position with the Houston Police Department. Obviously, any sexually deviant behaviors involving harm to others (i.e., sex with minors, rape, etc.) should automatically disqualify the applicant.

Marital Status. Current marital status (married, separated, divorced, widowed or living common law) was not validated in this research project. Although the insignificant findings may be attributed to infrequent cases of instability and restriction of range phenomena, the results do not support applicant disqualification due to separation or common law marriages. Due to the possible adverse impact of these items, it is recommended that disqualification because of current marital status be eliminated as a selection requirement. However, such information can be considered as support data for other indications of instability and unreliability. In addition, prior marital history (i.e., number of divorces and separations) has some support as being important in police officer selection from other researchers and can be considered along with data related to stability, sense of responsibility, and other essential background and personality characteristics.

Unwed Parenthood and Abortions. Data relating to unwed parenthood and abortions should not be grounds for disqualification and should be considered very cautiously, referring to the legality of any abortions, frequency of

illegitimate children, etc. Because of the potential adverse impact of these items, it is recommended that they only be used as secondary data to provide insights to the background investigator for further checking.

Height and Weight. Due to restriction in range problems, the research findings for minimum height standards were inconclusive. Although there is some support for a minimum height requirement for male applicants, findings were not consistent and are of unknown validity for females. Since height standards adversely impact both female and Hispanic applicants, it is recommended that this requirement be eliminated until further research can be conducted on this topic.

Military Draft Code. Use of unfavorable draft codes as a selection requirement was not validated and should not be used by the Department. (Since elimination of the draft, this is a moot issue anyway.) Whether or not the applicant served in the military, likewise, should not be a disqualifier.

Summary. Since none of the items discussed above has been validated, they are not justifiable reasons for disqualifying applicants. Nevertheless, information on some of these topics might result in important "leads" for further queries by the background investigator. For example, an unfavorable draft code itself should not be disqualifying, but a follow-up probe of the reason for the draft code which revealed significant

mental or physical problems might justify rejection. Similarly, probes into prior marital difficulties might reveal applicant tendencies toward violence, hostility, prejudice or immoral behavior.

Citizenship and Appearance. Two current selection requirements could not be investigated due to research limitations: citizenship and appearance. Although no recommendation can be made for the citizenship requirement, appearance and bearing have been validated in independent research studies for other law enforcement positions. Therefore, it is concluded that the applicant's appearance during the selection interview should be considered when evaluating the applicant's potential for the entry-level officer position. Appearance should be defined clearly and should include demeanor, ability to express himself/herself and ability to instill confidence in the public. No adverse impact was found for this variable, so its continued use along with applicant's other background data is recommended.

Other Recommendations

1. Standardization. The Department should standardize to the extent possible all aspects of the applicant selection process. The purpose of this standardization should be to standardize or formalize all interview questions, to assure comprehensiveness of information obtained and to focus the interviewer on essential topics and follow-up

questions. It is strongly recommended that the Preliminary Interview Checklist, developed as part of this project (see Volume VII), be installed with appropriate modifications and used with all applicants. Forms and standardized data collection techniques should be developed for background investigators, polygraph examiners and final interview board members.

2. Polygraph Examination. The polygraph examination should be retained, but its use should be well defined and structured. Topics covered during the examination should be limited to those recommended by this research and as a check on discrepancies or the validity of any suspicious data which arises during other selection phases. The examination should be administered by a qualified polygraph examiner, and the examiner should be monitored periodically to ensure applicant rapport and adherence to structured procedures. Only confirmed lies, conflicting self report data and serious admissions should be grounds for disqualification on the basis of the polygraph examination data.
3. Specification of Selection Criteria. The Department should have frequent meetings with interviewers and background investigators to discuss selection problems and to update investigators as to Department policies. Although selection criteria seem clearly established and understood in most areas, particular emphasis for

clarification purposes should be given to those areas having adverse impact (e.g., marital stability, adulterous behaviors, etc.). In addition, certain topics are sensitive to public opinion and values and, therefore, should be reviewed on a regular basis (e.g., drug usage, immoral behaviors, etc.).

4. Sequencing of Selection Procedures. For efficiency and economy to both the Department and job applicants it is desirable to sequence selection requirements so that the automatic disqualifiers are in the beginning of the process. The Department's current sequencing of procedures is quite reasonable and efficient. An alternative is possible, however, which might take even greater advantage of the work sample test requirements. Since the work sample tests are shorter in duration than the typical preliminary interview, it may be useful to sequence the screening process as follows:

- 1) Civil Service screening and referral;
- 2) brief interview to answer applicant questions and to check for driver's license, education, age, felony convictions and other automatic rejection requirements;
- 3) work sample testing;
- 4) personal interview (i.e., current in-depth "Preliminary Interview") to obtain data on employment stability, driving record, educational behaviors, etc.; and
- 5) the remaining background investigation, polygraph and final interview procedures.

Given the above sequence, applicants would be screened on those selection requirements which are easiest to administer and which would take the least amount of time on the part of both applicants and Department personnel.

5. Future Research. It is recommended that the Department initiate several types of additional research projects related to the selection of individuals for the entry-level position. First, because of the importance of reading and other communication skills for both successful Academy completion and job performance, it is strongly recommended that the Department install some measures of reading ability to be used in the screening of job applicants. Unless such a measurement has been validated for this purpose in prior research, it is recommended that a readability test be developed and administered experimentally to all new Academy cadets until it can be validated against Academy and/or job performance criteria.

Secondly, and for similar reasons, it is recommended that the Department install other tests and measures on an experimental basis with the intent of performing future validation research. These tests should be administered to new cadets and validated later against Academy or job performance criteria. Such tests should include objective measures of reasoning and common sense, interpersonal skills, and other job related characteristics. In addition, specific measurements of physical characteristics (e.g., height and

weight) and psychomotor abilities (e.g., speed of running, number of situps, reaction time, etc.) should be obtained for validation against physical ability and self defense criteria.

Thirdly, if potentially higher visual acuity standards are desired, the Department should conduct a fuller investigation of visual acuity, using a broad sample of current officers. The methodology for such a research study is presented in Volume VI, Appendix J.

6. Development of Criteria. Academy and job performance data should be collected to serve as criteria in future research. Academy performance criteria should include course test grades as well as criteria for self defense skills, general physical conditioning, pursuit driving, marksmanship, etc., and perhaps some simulation exercises.

Job performance evaluations for officers should be more structured and developed similar to the procedures used in constructing the Police Officer Performance Evaluation scales utilized in the validation research with entry level officers (see Volume VII).

In order to conduct future research studies of height, weight and other physical characteristics, job performance data relating to "officer presence" and physical ability should be collected and retained by the Department. Such data should include incidence of assault, injuries, actor

resistance, use of weapons, citizen complaints pertaining to physical abuse, and so on.

7. Continuing Fitness. Due to the physical nature and importance of the police officer job, it is essential that officers in entry-level positions be capable of performing each critical task as defined by the job analyses. Therefore, a continuous review and development program for entry-level officers is needed to maintain vision, general health and physical ability standards.

Although such a program can take many forms, it should result in periodic assessment and maintenance of officers' visual acuity, medical health, physical fitness and abilities, pursuit driving skills, marksmanship and self defense abilities. It is particularly recommended that the Department develop a "refresher" self defense training program that would be conducted on a periodic basis.

CHAPTER 5
VALIDATION AND EVALUATION OF THE
TRAINING PROGRAM

The Entry-Level Officer Training Program

The Department's entry-level training program consists of a formal 640 hour Police Academy curriculum and on-the-job training received throughout a six month probationary period following graduation from the Academy. The Academy curriculum follows the Procedural and Substantive Rules issued by the Texas Commission on Law Enforcement Officer Standards and Education which sets forth the minimum training requirements by subject matter area necessary for individuals to obtain the basic peace officer qualification certificate.

Training Program Evaluation

Four criteria were developed by the researchers to evaluate the training programs. These criteria are identified and briefly defined below:

- Job relatedness of training - the extent to which there is a logical relationship between training content (subject matter) and job behavior.
- Efficiency of training - the extent to which training effort (emphasis) allocated to various subject matter

areas fits training needs as determined by the specific nature of the entry-level job.

- Effectiveness of training - the extent to which training prepares trainees to perform the entry-level job.
- Validity of training measures - the extent to which evaluative measures used during training have both content and predictive (criterion-related) validity.

The data base utilized to evaluate the training programs consisted primarily of the results of an extensive task analysis completed to describe the entry-level officer job content domain. The results of this job analysis are presented in detail in Volume IV.

Training Program Evaluation Results

On an overall basis, both the Academy and on-the-job training programs were found to meet all of the evaluation criteria, and are highly job related and valid programs. A brief summary of the major findings from the study of the Academy are presented in Table 4. Table 5 summarizes the results from the evaluation of the on-the-job (probationary) training program.

One significant finding not reported in Table 4 regarding Academy training is that ethnic minorities achieve a gain in knowledge by the time they graduate from the Academy that equals and tends to exceed the information gain of Whites. Accordingly, it was concluded that the Academy generates a high degree of law

TABLE 4

SUMMARY OF ACADEMY EVALUATION FINDINGS

<u>CRITERIA</u>	<u>FINDINGS</u>
Job Relatedness	Academy subject matter encompassed 91 percent of the entry-level "trainable" tasks; all current subject matter is job related.
Efficiency	An efficient match between training emphasis and needs has been achieved for 78 percent of the entry-level "trainable" tasks; 12 percent of the tasks were "undertrained"; 10 percent were "overtrained". Overall, there was a 92.4 percent "overlap" between need and emphasis as measured by a statistical comparison of "percentage vectors".
Effectiveness	Measured in terms of graduate and on-the-job training officer ratings, the Academy is effectively training cadets for 76.5 percent of the total "trainable" entry-level task domain.
Validity	Content validity was established for 78 percent of a sample of Academy examination items; both the total test and the "content valid test" items had significant criterion-related validity.

TABLE 5

SUMMARY OF PROBATIONARY TRAINING EVALUATION FINDINGS

<u>CRITERIA</u>	<u>FINDINGS</u>
Job Relatedness	On-the-job is job related by definition.
Efficiency	An efficient match between training emphasis and needs has been achieved for 90 percent of the entry-level "trainable" tasks; 6 percent of the tasks were "under-trained; 4 percent were "overtrained"; overall, there was a 93.4 percent "overlap" between need and emphasis as measured by a statistical comparison of "percentage vectors".
Effectiveness	Measured in terms of Sergeant and on-the-job training officer ratings, the probationary period provides for the effective training of 83.5 percent of the total "trainable" entry-level task domain.
Validity	No measures of probationary officer performance are made that could be evaluated by a validity study.

enforcement knowledge acquisition among cadets from all ethnic groups.

When the results of the Academy and on-the-job training analyses were combined, all training was found to be job related and valid. Furthermore, only 10 percent of the total "trainable" task domain of the entry-level job was found to be trained ineffectively.

Recommendations For Enhancing the Training Program

Specific recommendations have been presented in Volume VIII to enhance the efficiency and effectiveness of the entire training program. A brief listing of these recommendations is given below:

- Specific training objectives should be established for all phases of the training program.
- Academy curriculum designers should shift some emphasis from over-trained subjects to under-trained topics.
- Management and training officers should be made aware of ineffectively trained topics, and training should be adjusted accordingly.
- There needs to be more simulation exercises for topics that are not easily or well taught in the classroom, and that may not occur frequently during the probationary period.

- All current training methods should be reviewed and modified as appropriate to incorporate more effective principles of training (i.e. in several instances the lecture method could be replaced by other, more effective techniques such as discussions, role-playing, simulations, etc.).
- There needs to be more careful selection and development of Academy trainers.
- The "attractiveness" of the probationary training officer function should be enhanced to provide a means for "recruiting" the most qualified and interested officers to serve in the position.
- New and more effective training aids are needed throughout the Academy curriculum.
- Opportunities should be developed to stimulate more active Academy classroom participation by cadets.
- Training materials should be integrated more effectively with up-to-date outlines and "check lists" for use by instructors and students.
- Trainees should be given training priorities and "important" versus "interest" items should be identified accordingly.

- Objective evaluations and critiques should be made of probationary officer performance.
- Objective evaluations and critiques should be made of on-the-job training officer performance.
- Objective evaluations and critiques should be made of Academy instructors.
- There needs to be a greater degree of standardization among all trainers and a greater degree of coordination among them regarding the presentation of subject matter.
- The practical implications and utility of certain Academy topics (e.g. psychology, sociology, etc.) should be emphasized, not just theory and concepts.
- Academy class sizes should be structured and organized whereby all cadets can be learning for a majority of the time. (Currently, there are many situations in which only a few cadets participate and the remainder wait.)
- Currently, Academy and on-the-job training are two separate processes with minimal integration or communication between them. Ideally, probationary training should come under the purview of the Training Division. Practically, there should be extensive integration

between the two processes. For example, on-the-job training officers should receive input from Academy instructors regarding individual strengths and weaknesses of new officers, whereby the probationary period can be structured accordingly.

- Periodically, there should be an objective evaluation of the entire training process.

Since the Houston Police Department will be constructing a new Academy, a critique has not been made of the current training facilities. However, it should be recognized from the above recommendations that provisions for audio-visual equipment to provide multi-media training presentations are essential for the new facilities. Additionally, extensive consideration should be given to the design of the training environment, including facilities for field exercises and practice.

In summary, while the current training program is both job related and valid, and has a reasonable degree of efficiency and effectiveness there are many opportunities to improve the program for the entry-level position. The planning and subsequent construction of new training facilities should provide the stimulus for developing and implementing the recommended changes in the training process.

CHAPTER 6

VALIDATION OF THE PROMOTIONAL SYSTEM

Introduction

The last major component of the overall research project was directed toward the study of the Houston Police Department's promotional system and is reported in detail in Volume IX. The promotional procedures followed by the Department are prescribed in Article 1269m, Vernon's Texas Civil Statutes. This article specifies eligibility requirements, the procedures for administering competitive written exams, the method for creating promotion eligibility lists and the procedures for filling vacant promotional positions.

As specified by Article 1269m, the Department's promotional system is the same for all positions from the rank of Sergeant and Detective through Assistant Chief. The system requires that individuals be in their present ranks for at least two years before they are eligible for promotion. After meeting this requirement any individual who wishes to be promoted must take a written exam oriented toward the next highest rank and administered by the Houston Civil Service Commission. An individual with the rank of Police Officer may take either the Detective or Sergeant exam or both; Detectives and Sergeants may take the Lieutenant exam; and so forth. The exam for each promotional rank is administered once a year for ranks up to and including Captain, but

the exams for Deputy Chief and Assistant Chief are given only in years when one or more of these positions become vacant or a new position is created.

A total promotion score is computed by the Houston Civil Service Commission for each officer seeking a promotion. This total score is comprised of three sub-scores: the promotional exam score, a score based on the average of the two most recent Departmental performance ratings, and a tenure score.

A few months prior to the administration of the written promotional exam, a reading list is published to guide officers preparing for the examination. Reading material on the list is available at local book stores. Exam questions, written by Houston Civil Service personnel, are drawn from the reading list material. Recently, all exams have contained 100 multiple choice questions. Each question is worth .7 points for a possible total correct score of 70 points.

All officers are evaluated semi-annually by their supervisors with regard to their job performance. These ratings, typically made in February and August, have a possible maximum score of 30 points. The value used in computing the total promotion score is the average of the two most recent performance ratings.

The tenure score is based on the number of years an individual has served with the Houston Police Department, with one point

being awarded for each year of service. An officer can receive a maximum of 10 points after 10 or more years with the Department.

The three scores described above are combined to yield a total promotion score with a maximum of 110 points.

All officers seeking a promotion are rank ordered by their total score. All promotions for each rank are made from the appropriate promotion list for one year following the date of the promotional exam. When a vacancy occurs, the officer at the top of the list is promoted unless the Chief of Police determines that there is a valid reason for not promoting the officer with the highest total score. The reason(s) for not appointing the individual with the highest score must be presented in writing and filed with the Civil Service Commission. Officers selected for promotion must successfully pass a medical examination.

Research Design

The research conducted for this phase of the project focused on analyzing the criterion-related validity of the total promotion score as well as each of the components of the promotional system regardless of the validity of the overall score. In addition, an analysis was made of the appropriate content for inclusion in the Detective, Sergeant, Lieutenant and Captain written examinations.

Since the validity study needed to be relevant to recent applications of the promotional system, the research focused on

analyzing the appropriate data for promotions occurring between 1971 and 1975. By limiting the time frame, the research is applicable to relatively recent promotional examinations and Departmental performance ratings. In addition, officers promoted from the 1971 through 1975 promotion lists have been in their new jobs for a sufficient length of time whereby their current job performance can be evaluated by supervisory personnel.

Because of the above time frame considerations, only the promotional data related to Sergeant and Detective promotions could be analyzed in this study. The number of officers promoted to the rank of Lieutenant or higher over the last five years has been so small that a criterion-related validity study is not technically feasible for studying these higher ranking positions.

It should be noted that the purpose of this research project was to study the validity of the promotion system rather than promotion in a particular year or to a specific rank. The promotional system is identical for all ranks each year. Therefore, if two ranks had a relatively large number of officers promoted (such as Detectives and Sergeants) while other ranks had only a few promotions (Lieutenant and above), the results for the larger size groups should be representative of the entire promotional process for all ranks.

Validation Study Results

The validity study was accomplished by analyzing the predictive relationships between total promotion scores, written exam scores, tenure scores, and Departmental performance ratings (all being predictors) and current job performance (criterion) in a promotional position. The validation results indicate that the total promotion score has significant criterion-related validity, and therefore verified the validity of the overall promotional system. Furthermore, it was found that the written exam scores for both the Sergeant and Detective examinations have predictive validity. The tenure score also is predictive of performance in a promotional position. With respect to the Departmental performance ratings, it was found that they were predictive of subsequent Detective job performance, but that they did not have either a positive or negative relationship to the job performance of those promoted to Sergeant. It should be noted, however, that the Departmental performance ratings are generally related to tenure (i.e. rating increases with length of service) and, as reported in Volume III, they have no adverse impact for any protected class (i.e. ratings are equal for ethnic minorities, and females are rated slightly higher than males).

The weakest component of the promotional process is the current performance rating system. The performance ratings, of course, are used in the promotional process as well as for other

personnel administration matters. A set of performance dimensions and rating procedures were developed by the researchers for use in evaluating the performance of officers in the entry-level police officer position as reported in Volume VII. Similar performance scales were developed in this phase of the study and are applicable to the Sergeant and Detective positions. Accordingly, it is recommended that the Department adopt new performance evaluation forms and procedures for all Class A positions.

Utilizing the job analysis results, guidelines were developed for use in constructing future promotional exams for the position of Detective, Sergeant, Lieutenant and Captain. It is recommended that these guidelines be followed in the preparation of promotion reading lists and the development of future exam questions.

APPENDIX A
REFERENCES AND BIBLIOGRAPHY

REFERENCES AND BIBLIOGRAPHY

- Adams, T. F. Police patrol - tactics and techniques. Englewood Cliffs, N. J.: Prentice-Hall, 1971.
- Affirmative action and equal employment: A guidebook for employers, Vol. 1 and 2. Washington, D. C.: U. S. Government Printing Office, 1974.
- Altman, H., Sletten, I. W., Eaton, M. E., & Ulett, G. A. Demographic and mental status profiles - patients with homicidal, assaultive, suicidal, persecutory, and homosexual ideation. Psychiatric Quarterly, 1971, 45, 57-64.
- American Bar Association. Standards relating to the urban police function. The Police Chief, May 1973, S1-S8.
- American Psychological Association. Standards for educational and psychological tests (Rev. ed.). Washington, D. C.: Author, 1974.
- American Psychological Association, Division of Industrial and Organizational Psychology. Amicus curiae brief - King et. al. and Moreman et. al. vs. Georgia Power Co. et. al. Author, 1972.
- American Psychological Association, Division of Industrial and Organizational Psychology. Amicus curiae brief - Washington et. al. vs. Davis et. al. Author, 1975.
- American Psychological Association, Division of Industrial and Organizational Psychology. Principles for the validation and use of personnel selection procedures. Washington, D. C.: Author, 1975.
- American Psychological Association, Task Force on Employment Testing and Minority Groups. Job testing and the disadvantaged. American Psychologist, 1969, 24, 637-650.
- Amrine, M. Testing and public policy. American Psychologist, 1965, 20, 857-1002.
- Andrews, R. A. Leadership and the police supervisor. Evanston, Ill.: Northwestern University, Traffic Institute, 1971.
- Archer, W. B. Computation of group job descriptions from occupational survey data. (PRL-TR-66-12) San Antonio, Texas: Personnel Research Laboratory, Lackland Air Force Base, 1966.

- Arvey, R. D. Some comments on culture fair tests. Personnel Psychology, 1972, 25, 433-448.
- Ash, P. The implications of the Civil Rights Act of 1964 for psychological assessment in industry. American Psychologist, 1966, 21, 797-803.
- Ash, P., & Kroeker, L. Personnel selection, classification and placement. Annual Review of Psychology, 1975, 26, 481-508.
- Atlanta Regional Commission, Governmental Service Department, Technical Assistance Division. Test validation project report. Vol. I and Appendices. Atlanta: Author, October 1974.
- Auten, J. H. Determining training needs. Police. September-October 1970, 25-28.
- Azen, S. P., Snibbe, H. M., & Montgomery, H. R. A longitudinal predictive study of success and performance of law enforcement officers. Journal of Applied Psychology, 1973, 57, 190-192.
- Baehr, M. E. A practitioner's view of EEOC requirements with special reference to job analysis. Chicago: University of Chicago, Industrial Relations Center, 1976.
- Baehr, M. E., Furcon, J. E., & Froemel, E. C. Psychological assessment of patrolman qualifications in relation to field performance. Washington, D. C.: U. S. Department of Justice, Law Enforcement Assistance Administration, 1968.
- Baehr, M. E., Saunders, D. R., Froemel, E. C., & Furcon, J. E. The prediction of performance for black and for white patrolmen. Professional Psychology, 1971, 2, 46-57.
- Barlett, J., & Goldstein, I. Cited in The Industrial-Organizational Psychologist, Vol. 14, No. 1, 1976, p. 9.
- Barratt, E. S. Factor analysis of some psychometric measures of impulsiveness and anxiety. Psychological Reports, 1965, 16, 547-554.
- Barrett, G. V., Alexander, R. A., O'Connor, E., Forbes, J. B., Balascoe, L., & Garver, T. Public safety and personnel selection: Development of a selection program for patrol officers. (Tech. Rep. 1). Akron: University of Akron, Department of Psychology, April 1975.
- Barrett, R. S. The process of predicting job performance. Personnel Psychology, 1958, 11, 39-57.

- Bartlett, C. J. Applying fair employment criteria to training. Paper presented at the meeting of the American Psychological Association, Chicago, September 1975.
- Bartlett, C. J., & O'Leary, B. S. A differential prediction model to moderate the effects of heterogeneous groups in personnel selection and classification. Personnel Psychology, 1969, 22, 1-17.
- Baxter, B. Review of selected federal and professional positions on the use of tests in employment. JSAS Catalog of Selected Documents in Psychology, 1974, 4, 143.
- Baxter, B. Whither goes job analysis and testing: Some reactions of a convention attendee. The Industrial-Organizational Psychologist, 1976, 14(1).
- Beach, D. S. Personnel. New York: MacMillan, 1970.
- Beck, G. N. Municipal police performance rating. Journal of Criminal Law, Criminology, Police Science, 1961, 51, 567-574.
- Bendig, A. W. Age differences in the interscale factor structure of the Guilford-Zimmerman Temperament Survey. Journal of Consulting Psychology, 1960, 24, 134-138.
- Bendig, A. W. Factor analyses of the Guilford-Zimmerman Temperament Survey and the Maudsley Personality Inventory. Journal of General Psychology, 1962, 67, 21-26. (a)
- Bendig, A. W. The factorial validity of the Guilford-Zimmerman Temperament Survey. Journal of General Psychology, 1962, 67, 309-317. (b)
- Bendig, A. W., & Meyer, W. J. The factorial structure of the scales of the Primary Mental Abilities, Guilford-Zimmerman Temperament Survey, and Kuder Preference Record. Journal of General Psychology, 1963, 68, 195-201.
- Berg, I. A., & Fox, V. Factors in homicides committed by 200 males. Journal of Social Psychology, 1947, 26, 109-119.
- Bernauer, E. M., & Bonanno, J. Development of physical profiles for specific jobs. Journal of Occupational Medicine, 1975, 17, 27-33.
- Bersh, P. J. A validation study of polygraph examiner judgments. Journal of Applied Psychology, 1969, 53, 399-403.

- Blagg, C. D. Management theory in law enforcement. Police, November-December 1969, 41-43.
- Blagg, C. D. Improved community relations via attitude quantification. Police, January-February 1971, 47-49.
- Blanz, F., & Ghiselli, E. E. The mixed standard scale: A new rating system. Personnel Psychology, 1972, 25, 185-199.
- Block, J. The challenge of response sets. New York: Appleton-Century-Crofts, 1965.
- Blum, R. H. Police selection. Springfield, Ill.: Charles C. Thomas, 1964.
- Blum, R. H. The polygraph examination in law enforcement personnel selection. Police, November-December 1967, 60-71.
- Blum, M. L., & Naylor, J. C. Industrial psychology. (Rev. ed.) New York: Harper & Row, 1968.
- Boehm, V. R. Negro-white differences in validity of employment and training selection procedures. Journal of Applied Psychology, 1972, 56, 33-39.
- Bopp, W. J. Police personnel administration. Boston: Holbrook, 1974.
- Brecher, E. M. Licit and illicit drugs. Boston: Little, Brown, 1972.
- Bristow, A. P. Field interrogation. Springfield, Ill.: Charles C. Thomas, 1964.
- Bristow, A. P. Educational recognition by California law enforcement. Police, July 1967, 30-32.
- Bristow, A. P. Field interrogation. (2nd ed.) Springfield, Ill.: Charles C. Thomas, 1972.
- Brodsky, S. L. Models of police behavior. Police. May-June 1969, 27-28.
- Brown, D. C. Education and training: Perspectives on the police role. Police, September 1971, 21-24.
- Brown, L. P. An unforeseen problem resulting from college: Educated policemen. Police, January 1966, 72-73.

The Bureau of National Affairs. ABCs of the Equal Employment Opportunity Act. Washington, D. C.: Author, 1973.

The Bureau of National Affairs. Federal law: What discrimination is forbidden. Washington, D. C.: Author, 1974.

Buros, O. K. (Ed.). The seventh mental measurements yearbook. Highland Park, N. J.: Gryphon Press, 1972.

Byham, W. C., & Spitzer, M. E. Personnel testing: The law and its implications. Personnel, 1971, 8-19.

California State Personnel Board, Selection Consulting Center. The validation of entry-level firefighter examinations in the states of California and Nevada. Sacramento, Calif.: Author, 1973.

Campbell, D. T., & Fiske, D. W. Convergent and discriminant validities by the multitrait-multimethod matrix. Psychological Bulletin, 1959, 56, 181-195.

Campbell, J. P., Dunnette, M. D., Lawler, E. E., III, & Weick, K. E., Jr. Managerial behavior, performance, and effectiveness. New York: McGraw-Hill, 1970.

Carpenter, J. B., & Christal, R. E. Development of a data base for direct analysis of airmen loss rates. San Antonio, Tex.: Lackland Air Force Base, Occupational Research Division, 1973.

Cecil, C. E., & Cecil, J. H. Interim report on recruitment and validation of written examinations used in hiring and promoting employees of the Montgomery City-County Personnel Board - clerical workers. Montgomery, Ala.: Author, 1975.

Cecil, C. E., & Cecil, J. H. Interim report on recruitment and validation of written examinations used in hiring and promoting employees of the Montgomery City-County Personnel Board - fire department. Montgomery, Ala.: Author, 1975.

Cecil, C. E., & Cecil, J. H. Interim report on recruitment and validation of written examinations used in hiring and promoting employees of the Montgomery City-County Personnel Board - police department. Montgomery, Ala.: Author, 1975.

Characteristics of police applicants. Police Chief, May 1972, 58-60.

- Chenoweth, J. H. Situational tests - a new attempt at assessing police candidates. Journal of Criminal Law, Criminology, Police Science, 1961, 52, 232-238.
- Christal, R. E. Implications of Air Force occupational research for curriculum design. Presented in seminar: Process and Techniques of Vocational Curriculum Development. Report available from Minnesota Research Coordinating Unit for Vocational Education, University of Minnesota, 1970.
- City of Beaumont, Texas. Development of a model recruiting and selection system - supplemental 3-A3-1972. Beaumont, Tex.: Author, 1974.
- City of Houston, Texas. Affirmative action program for equal employment and economic opportunity. Houston: Author, November 1974.
- City of Houston, Texas. Project on police recruiting improvement. Houston: Author, 1975.
- Cleary, T. A. Test bias: Prediction of grades of Negro and white students in integrated colleges. Journal of Educational Measurement, 1968, 5, 115-124.
- Cloninger, C. R., & Guze, S. B. Female criminals: Their personal, familial, and social backgrounds. Archives of General Psychiatry, 1970, 23, 554-558.
- Cloninger, C. R., & Guze, S. B. Psychiatric disorders and criminal recidivism. Archives of General Psychiatry, 1973, 29, 266-269.
- Cloninger, C. R., Reich, T., & Guze, S. B. The multi-factorial model of disease transmission: II Sex differences in the familial transmission of sociopathy (antisocial personality). British Journal of Psychiatry, 1975, 127, 11-22.
- Cohen, B. Prior arrest record and police performance: Testimony before the City of New York Commission of Human Rights. New York: Rand Institute, 1972.
- Cohen, B., & Chaiken, J. M. Police background characteristics and performance. (RI Rep. No. R-999-00J) New York: Rand Institute, 1972.
- Cohen, B., & Chaiken, J. M. Police background characteristics and performance: Summary. (RI Rep. No. R-999-00J) New York: Rand Institute, 1972.

- Cohen, B., & Chaiken, J. M. New York City's police: The background and performance of the class of '57. New York: Rand Institute, 1973.
- Colarelli, N. J., & Siegel, S. M. A method of police personnel selection. Journal of Criminal Law, Criminology, Police Science, 1964, 55, 287-289.
- Cole, N. S. Bias in selection. Journal of Educational Measurement, 1973, 10, 237-255.
- Commerce Clearing House, Inc. 1975 guidebook to fair employment practices. Chicago: Author, 1975.
- Commerce Clearing House, Inc. Employment practices decisions (10 vols.). Chicago: Author, 1976.
- Commerce Clearing House, Inc. EEOC compliance manual. Chicago: Author, 1975.
- Coon, T. F. Police residency requirement: A calm review. Police, July 1972, 30-31.
- Crites, J. O. Vocational psychology. New York: MacMillan, 1969.
- Cronback, L. J. Five decades of public controversy over mental testing. American Psychologist, 1975, 30, 1-14.
- Dahlstrom, W. G., & Welsh, G. S. An MMPI handbook. Minneapolis: The University of Minnesota Press, 1960.
- Dale, E. The problem of readability. The News Letter, Ohio State University, Bureau of Educational Research, February 1954.
- Dale, E., & Chall, J. S. A formula for predicting readability. Educational Research Bulletin, January 1948, 27, 11-28.
- Dale, E., & Chall, J. S. A formula for predicting readability: Instructions. Educational Research Bulletin, February 1948, 27, 37-54.
- Dallas Police Department. Medical selection technique project. Dallas: Author, February 1975.
- D'Aprix, R. M. How's that again: A guide to effective written and oral communication in business. Homewood, Ill.: Dow-Jones-Irwin, 1971.
- Darlington, R. B. Another look at "cultural fairness". Journal of Educational Measurement, 1971, 8, 71-82.

- Davis, E. A method of approach to the tasks of a human relations officer. Police, January 1971, 61-64.
- Davis, E. M., & Knowles, L. An evaluation of the Kansas City preventative patrol experiment. The Police Chief, June 1975, 22-27.
- Dempsey, C. A. A study of police height requirements. Austin, Tex.: Texas Department of Public Safety, March 1973.
- Department of the Air Force. Air Force manual 35-2. Washington, D. C.: Author, 1968.
- Department of Labor. Employment tests by contractors and sub-contractors - validation. Federal Register, 1968, 33(186), 14392-14394.
- Department of Labor, Office of the Secretary. Equal employment opportunity in apprenticeship and training. Federal Register, 1971, 36(68), 48-58.
- Dicken, C. F. Simulated patterns on the California Psychological Inventory. Journal of Consulting Psychology, 1960, 7, 24-31.
- Dinitz, S., Scarpitti, F. R., & Reckless, W. C. Delinquency vulnerability: A cross group and longitudinal analysis. American Sociological Review, 1962, 27, 515-517.
- Donovan, D. M., Queissar, H. R., & O'Leary, M. R. Group embedded figures tests performance. International Journal of Addiction, 1976, 11, 725-739.
- DuBois, P. A., & Watson, R. I. The selection of patrolmen. Journal of Applied Psychology, 1950, 34, 90-95.
- Dunnette, M. D. Personnel selection and placement. Belmont, Calif.: Wadsworth, 1966.
- Dunnette, M. D. Handbook of industrial & organizational psychology. Chicago: Rand-McNally, 1976.
- Dunnette, M. D., & Motowidlo, S. J. Police selection and career assessment. (LEAA Grant #73-N1-99-0018-G) Washington, D. C.: U. S. Government Printing Office, November 1976.
- Dwyer, W. O., & Mormon, D. L. Use of contact lenses in law enforcement. Police, October 1971, 16-17.
- Earhart, R. Exceptions to certain equal rights guidelines by the Law Enforcement Assistance Administration. Evanston, Ill.: Northwestern University, Traffic Institute, 1973.

- Edel, E. C., & Jacoby, J. Examiner reliability in polygraph chart analysis: Identification of physiological responses. Journal of Applied Psychology, 1975, 60, 632-634.
- Einhorn, H. J., & Bass, A. R. Methodological considerations relevant to discrimination in employment testing. Psychological Bulletin, 1971, 75, 261-269.
- Eisenberg, R., & Reinke, R. W. The use of written examinations in selecting police officers: Coping with the dilemma. The Police Chief, March 1973, 24-28.
- Ennis, W. H. Minority employment barriers from the EEOC viewpoint. Professional Psychology, 1970, 1, 483-489.
- Equal Employment Opportunity Commission. Guidelines on discrimination because of national origin. Federal Register, 1970, 35(8), 421.
- Equal Employment Opportunity Commission. Guidelines on employee selection procedures. Federal Register, 1970, 35(149), 12333-12336.
- Equal Employment Opportunity Commission. Personnel testing and equal employment opportunity. Washington, D. C.: U. S. Government Printing Office, 1970.
- Equal Employment Opportunity Commission. Guidelines on discrimination because of sex. Washington, D. C.: U. S. Government Printing Office, 1972.
- Equal Employment Opportunity Commission. Job discrimination? Laws and rules you should know. Washington, D. C.: U. S. Government Printing Office, 1974.
- Equal Employment Opportunity Coordinating Council. Employee selection procedures: Uniform guidelines. Federal Register, 1976, 41(136), 29016-29022.
- Eysenck, H. J. Crime and personality. Boston: Houghton Mifflin, 1964.
- Farr, J. L., O'Leary, B. S., & Bartlett, C. J. Ethnic group membership as a moderator of the prediction of job performance. Personnel Psychology, 1971, 24, 590-636.
- Fear, R. A. The evaluation interview. New York: McGraw-Hill, 1973.
- Feehan, R. L. Police performance prediction: Relationships between biographical and selected criteria. Unpublished manuscript. Atlanta, Ga.: Georgia Institute of Technology, 1975.

- Fenster, C. A., & Locke, B. The "dumb cop": Myth or reality? An examination of police intelligence. Journal of Personality Assessment, 1973, 37, 276-281. (a)
- Fenster, C. A., & Locke, B. Neuroticism among policemen: An examination of police personality. Journal of Applied Psychology, 1973, 57, 358-359. (b)
- Fenz, W. D., & Jones, G. B. Cardiac conditioning in a reaction time task and heart rate control during real life stress. Journal of Psychosomatic Research, 1974, 18, 199-203.
- Ferinden, W. Psychological criteria in the selection of police candidates. Police, May 1969, 33-34.
- Fincher, G. Personnel testing and public policy. American Psychologist, 1973, 28, 489-496.
- Fisher, E. C. Disposition of prisoner following arrest. Evanston, Ill.: Northwestern University, Traffic Institute, 1971.
- Flanagan, J. C. The critical incident technique. Psychological Bulletin, 1954, 51, 327-358.
- Flaughner, R. L. The new definitions of test fairness in selection: Developments and implications. Educational Researcher, 1974, 13, 13-16.
- Fleishman, E. A. Toward a taxonomy of human performance. American Psychologist, 1975, 30, 1127-1149.
- Flynn, J. T., & Peterson, M. The use of regression analysis in police patrolman selection. Journal of Criminal Law, Criminology, Police Science, 1972, 63, 564-569.
- Folgi, L., Hulin, C. L., & Blood, M. R. Development of first-level behavioral job criteria. Journal of Applied Psychology, 1971, 55, 3-8.
- Fox, H., & Lefkowitz, J. Differential validity: Ethnic group as a moderator in predicting job performance. Personnel Psychology, 1974, 27, 209-223.
- Frost, T. M. Selection methods for police recruits. Journal of Criminal Law, Criminology, Police Science, 1955, 46, 135-145.
- Fry, E. A readability formula that saves time. Journal of Reading, April 1968, 513-578.

- Furcon, J. Some questions and answers about police officer selection testing. Chicago: University of Chicago, Industrial Relations Center, 1972.
- Furcon, J., & Froemel, E. C. The relationship of selected psychological tests to measures of police officer job performance in the state of Illinois. Chicago: University of Chicago, Industrial Relations Center, 1973.
- Garner, W. R. Rating scales, discriminability, and information transmission. Psychological Review, 1960, 67, 343-352.
- Gavin, J., & Toole, D. Validity of aptitude tests for the "hardcore unemployed". Personnel Psychology, 1973, 26, 139-146.
- Gavin, J. F., & Hamilton, J. W. Selecting police using assessment center methodology. Journal of Police Science and Administration, 1975, 3, 166-176.
- Gendre, F. Evaluation de la personnalite et situation de selection. Bulletin d'etudes et recherches psychologiques, 1964, 68, 413-419. (Abstract)
- Germann, A. C. Police personnel administration. Springfield, Ill.: Charles C. Thomas, 1958.
- Germann, A. C. Changing the police - the impossible dream? Journal of Criminal Law, Criminology, Police Science, 1971, 62, 416-421.
- Ghiselli, E. E. The validity of occupational aptitude tests. New York: Wiley, 1966.
- Ginger, A. F. The law, the Supreme Court and the people's rights. Woodbury, N. Y.: Barron's, 1973.
- Goldstein, H. Police response to urban crisis. Public Administration Review, 1968, 28, 417-423.
- Gough, H. G. A sociological theory of psychopathy. American Journal of Sociology, 1948, 53, 359-366.
- Gough, H. G. Conceptual analysis of psychological test scores and other diagnostic variables. Journal of Abnormal Psychology, 1965, 70, 294-302. (a)
- Gough, H. G. Cross-cultural validation of a measure of asocial behavior. Psychological Reports, 1965, 17, 379-387. (b)

- Gough, H. G. Manual for the California Psychological Inventory. (Rev. Ed.) Palo Alto, Calif.: Consulting Psychologists Press, 1975.
- Gough, H. G., & Peterson, D. R. The identification and measurement of predispositional factors in crime and delinquency. Journal of Consulting Psychology, 1952, 16, 207-212.
- Grady, B. F. I. Q. tests: The New Castle County experience. Police Chief, February 1973, 66-67.
- Gross, A. L., & Su, W. Defining a "fair" or "unbiased" selection model: A question of utilities. Journal of Applied Psychology, 1975, 60, 345-351.
- Gross, S. Higher education and police: Is there a need for a closer look? Journal of Police Science and Administration, 1973, 1, 477-483.
- Guilford, J. P. Psychometric methods. New York: McGraw-Hill, 1954.
- Guilford, J. S., Zimmerman, W. S., & Guilford, J. P. The Guilford-Zimmerman Temperament Survey handbook. San Diego: Edits, 1976.
- Guion, R. Recent EEO court decisions. The Industrial-Organizational Psychologist, 1974, 11(2), 21-26.
- Guion, R., & Gottier, R. Validity of personality measures in personnel selection. Personnel Psychology, 1965, 18, 135-164.
- Guion, R. E. Personnel testing. New York: McGraw-Hill, 1965.
- Guion, R. M. Employment tests and discriminatory hiring. Industrial Relations, 1966, 5, 20-37.
- Gunderson, E. K. Body size, self-evaluation, and military effectiveness. Journal of Personality and Social Psychology, 6, 902-906.
- Guze, S. B., Goodwin, D. W., & Gone, J. B. Criminality and psychiatric disorders. Archives of General Psychiatry, 1969, 20, 583-590.
- Hankey, R. O. Personality correlates in a role of authority: The police. (Doctoral dissertation, University of Southern California, 1968). Dissertation Abstracts, 1968, 29, 952.

- Hase, H. D., & Goldberg, L. R. Comparative validity of different strategies of constructing personality inventory scales. Psychological Bulletin, 1967, 67, 231-248.
- Harmon, H. H. Modern factor analysis. (2nd ed.) Chicago: University of Chicago Press, 1967.
- Hatry, H. P., & Fisk, D. M. Improving productivity and productivity measurement in local governments. Washington, D. C.: National Commission on Productivity, 1971.
- Hays, W. L. Statistics for psychologists. New York: Holt, Rinehart and Winston, 1970.
- Hays, W. L. Statistics for the social sciences. (2nd ed.) New York: Holt, Rinehart, Winston, 1973.
- Heckman, R. W., Groner, D. M., Dunnette, M. D., & Johnson, P. D. Development of psychiatric standards for police selection. (LEAA) Washington, D. C.: U. S. Government Printing Office, 1972.
- Hill, A. H. Use of a structured autobiography in the construct validation of personality scales. Journal of Consulting Psychology, 1967, 31, 551-556.
- Hillgreen, J. S., & Spradlin, L. W. A positive disciplinary system for the Dallas Police. The Police Chief, July 1975, 65-67.
- Hogan, R. Personality characteristics of highly rated policemen. Personnel Psychology, 1971, 24, 679-686.
- Hogan, R., & Kurtines, W. Personological correlates of police effectiveness. Journal of Psychology, 1975, 91, 289-295.
- Hogan, R., Mankin, D., Conway, J., & Fox, S. Personality correlates of undergraduate marijuana use. Journal of Consulting and Clinical Psychology, 1970, 35, 58-63.
- Holmes, J. A. Predicting success for security patrolmen. Personnel Psychology, 1951, 4, 397-403.
- Hoobler, R. L., & McQuenney, J. A. A question of height. The Police Chief, November 1973, 42-48.
- Hooke, J. F., & Krauss, H. H. Personality characteristics of successful police sergeant candidates. Journal of Criminal Law, Criminology, Police Science, 1971, 62, 104-106.

Horvath, F. The police candidate polygraph examination: Considerations for the police administration. Police, June 1972, 33-39.

Horvath, F. S., & Reid, J. E. The reliability of polygraph examiner diagnosis of truth and deception. Journal of Criminal Law, Criminology, Police Science, 1971, 62, 276-281.

Houston Police Department. Affirmative action plan and general employment practices. Houston: Author, June 1974.

Howard, J. W. Law enforcement in an urban society. American Psychologist, 1974, 223-232.

Hunt, I. C., & Cohen, B. Minority recruiting in the New York City Police Department: Part I. The attraction of candidates; Part II. The retention of candidates. New York: Rand Institute, 1971.

Institute for Local Self Government. Can high-risk police applicants be identified? Berkeley: Author, July 1971.

Institute for Management. The EEO and Equal Pay Law compliance handbook. Old Saybrook, Conn.: Author, 1974.

International Association of Chiefs of Police. Bulletin on various selection resolutions. The Police Chief, July 1973, 12-15.

Jeanneret, P. R., & McCormick, E. J. The job dimensions of "worker-oriented" job variables and of their attribute profiles as based on data from the Position Analysis Questionnaire. Occupational Research Center, Purdue University, June 1969.

Jensen, A. R. Authoritarian attitudes and personality maladjustment. Journal of Abnormal and Social Psychology, 1957, 54, 303-311.

Johnson, J. C. Test development and validation studies for Tennessee State Troopers. Tennessee State Department of Personnel, 1975.

Kahn, M. M. Murderers who plead insanity: A descriptive factor-analytic study of personality, social, and history variables. Genetic Psychology Monographs, 1971, 84, 275-360.

Karpinos, B. D. Current height and weights of youths of military age. Human Biology. 33, 335-354.

- Kavanaugh, M. J. The content issue in performance appraisal: A review. Personnel Psychology, 1971, 24, 653-668.
- Kelling, G. L., & Pate, T. The Davis-Knowles critique of the Kansas City preventative patrol experiment. The Police Chief, June 1975, 32-38.
- Kelling, G. L., & Pate, T. Kansas City preventative patrol experiment - introduction and synopsis. The Police Chief, June 1975, 20-21.
- Kelly, R. M., & Farber, M. G. Identifying responsive inner-city policemen. Journal of Applied Psychology, 1974, 59, 259-263.
- Kent, D. A., & Eisenberg, T. The selection and promotion of police officers: A selected review of recent literature. The Police Chief, February 1972, 20-29.
- Kipnis, D. Social immaturity, intellectual ability, and adjustive behavior in college. Journal of Applied Psychology, 1968, 52, 71-80.
- Kirchner, W. K. Some questions about "Differential validity: Ethnic group as a moderator in predicting job performance". Personnel Psychology, 1975, 28, 341-344.
- Kirchner, W. K., & Dunnette, M. D. Using critical incidents to measure job proficiency factors. Personnel, 1957, 34, 54-59.
- Kirkpatrick, J. J., Ewen, R. B., Barrett, R. S., & Katzell, R. A. Testing and fair employment. New York: New York University Press, 1968.
- Knapp, R. R. A reevaluation of the validity of MMPI scales of dominance and social responsibility. Educational and Psychological Measurement, 1960, 20, 381-386.
- Knapp, R. R. Personality correlates and delinquency rates of a Navy sample. Journal of Applied Psychology, 1963, 47, 68-71.
- Kohfeld, D. L., & Weitzel, W. Some relations between personality factors and social facilitation. Journal of Experimental Research in Personality, 1969, 3, 287-292.
- Komers, Ron W. Selection compliance compendium: A collection of all federal and state laws and regulations dealing with fair employment issues. Sacramento: Selection Consulting Center, 1973.

- Krahenbuhl, G. S., & Friedlander, S. R. The job-related physical abilities examination for the entry level police recruit. A report presented to the City of Phoenix Personnel Department, August 1976.
- Kwolek, W. F. A readability survey of technical and popular literature. Journalism Quarterly, Summer 1973, 255-264.
- Landy, F. J. The validity of the interview in police officer selection. Journal of Applied Psychology, 1976, 61, 193-198.
- Landy, F. J., & Farr, J. L. Police performance appraisal. University Park, Pa.: Pennsylvania State University, September 1975.
- Landy, F. J., Farr, J. L. Saal, F. E., & Freytag, W. R. Behaviorally anchored scales for rating the performance of police officers. Journal of Applied Psychology, 1976, 61, 750-758.
- Lawshe, C. H. A quantitative approach to content validity. Personnel Psychology, 1975, 28(4), 563-576.
- Lefkowitz, J. Evaluation of a supervisory training program for police sergeants. Personnel Psychology, 1972, 25, 95-106.
- Lefkowitz, J. Psychological attributes of policemen: A review of research and opinion. Journal of Social Issues, 1975, 31, 3-26.
- Lefkowitz, J. (Chairman). Police selection: Impact of administrative, professional, social, and legal considerations. Symposium presented at the meeting of the American Psychological Association, Washington, D. C., August 1976.
- Lefkowitz, J., & Fox, H. Some answers to "Some questions about 'Differential validity: Ethnic group as a moderator in predicting job performance'". Personnel Psychology, 1975, 28, 345-350.
- Leiren, B. D., Kiker, V. L., & Phelan, J. G. Validating the selection of deputy marshalls. Proceedings 79th Annual Convention, American Psychological Association, 1971, 131-132.
- Levine, J. M., Kramer, G. G., & Levine, E. N. Effects of alcohol on human performance: An integration of research findings based on abilities classification. Journal of Applied Psychology, 1975, 60, 285-293.

- Matarazzo, J. D., Allen, B. V., Saslow, G., & Wiens, A. N. Characteristics of successful policemen and firemen applicants. Journal of Applied Psychology, 1964, 48, 123-133.
- Matthews, R. A., & Rowland, L. W. How to recognize and handle abnormal people: A manual for the police officer. Arlington, Va.: National Association for Mental Health, 1974.
- Mayo, C. C. Survey of twenty-eight Air Force career ladders with nineteen job inventories. Lackland Air Force Base, Texas, Personnel Research Division, Air Force Human Resources Laboratory, Air Force Systems Command, 1968.
- Mayo, C. C., Nance, D. M., & Shigekawa, L. Evaluation of the job inventory approach in analyzing USAF officer utilization fields. (AFHRL-TR-75-22) Lackland Air Force Base, Texas: Occupational and Manpower Research Division, 1975.
- McCormick, E. J., Jeanneret, P. R., & Mecham, R. C. A study of job characteristics and job dimensions based on the Position Analysis Questionnaire (PAQ). Journal of Applied Psychology Monograph, 1972, 56(4), 347-368.
- McCormick, E. J., Mecham, R. C., & Jeanneret, P. R. User's manual for the Position Analysis Questionnaire. West Lafayette, Ind.: PAQ Services, Inc., 1973.
- McCormick, E. J., & Tiffin, J. Industrial psychology (6th ed.). Englewood Cliffs, N. J.: Prentice-Hall, 1974.
- McLaughlin, G. H. SMOG grading: A new readability formula. Journal of Reading, 1969, 12, 639-646.
- McNamara, J. D. A statement: The Kansas City preventative patrol experiment. The Police Chief, June 1965, 30.
- McParland, T. A. Promotional testing: A critical look at the Civil Service testing system. Police, October 1971, 64-67.
- Megargee, E. I. The California Psychological Inventory handbook. San Francisco: Jossey-Bass, 1972.
- Megargee, E. I., Parker, G. V. C., & Levine, R. V. The relationship of familial and social factors to socialization in middle class college students. Journal of Abnormal Psychology, 1971, 77, 76-89.
- Michigan Department of State Police. Achievement and development inventory. Lansing: Author, August 1974.

Miller, G. J. Narcotic enforcement officers training program. Police, May-June 1971, 33-38.

Mills, R. B., McDevitt, R. J., & Tonkin, J. Situational tests in metropolitan police recruit selection. Journal of Criminal Law, Criminology, Police Science, 1966, 57, 99-106.

Milton, C. H. Women in policing. Police Foundation Report, 1972.

Miner, J. B. Psychological testing and fair employment practices: A testing program that does not discriminate. Personnel Psychology, 1974, 27, 49-62.

Molden, J. The use of probation in the selection process. Police, January 1972, 31-34.

Molden, J. B. A survey of applicant testing practices by Kansas municipal police departments. Police, July 1970, 28-34.

Morman, R. R., Hankey, R. O., Heywood, H. L., & Liddle, L. R. Predicting state traffic cadet academic performance from theoretical TAV selection system scores. Police, January-February 1966, 54-58.

Morman, R. R., Hankey, R. O., Heywood, H. L., Liddle, L. R., & Goldwhite, M. Multiple prediction of municipal police officers ratings and rankings using theoretical TAV selection system and certain non-test data. Police, January-February 1967, 19-22.

Morman, R. R., Hankey, R. O., Kennedy, P. K., & Jones, E. M. Academy achievement of state traffic officer cadets related to TAV selection system plus other variables. Police, July-August 1966, 30-34.

Morman, R. R., Hankey, R. O., Liddle, L. R., & Clemence, R. Multiple regression between age, education, police experience and TAV variables correlated to job rating on 101 female deputy sheriffs. Police, February 1972, 29-33.

Morsh, J. E., Madden, J. M., & Christal, R. E. Job analysis in the United States Air Force. (WADD-TR-61-113, AD-259 389) Lackland Air Force Base, Texas: Personnel Laboratory, Wright Air Development Division, 1961.

Moynahan, J. M. A social science approach to the education of law enforcement personnel. Police, September-October 1969, 66-69.

- Muehleisen, G. S. Developing police talents for a changing world. Police, September 1966, 6-9.
- Murphy, J. J. Current practices in the use of psychological testing by police agencies. Journal of Criminal Law, Criminology, Police Science, 1972, 63, 570-576.
- Murphy, P. V. A commentary: The Davis-Knowles observations on the Kansas City prevention patrol experiment: A summary report. The Police Chief, June 1975, 30.
- Nagle, B. F. Criterion development. Personnel Psychology, 1953, 6, 271-289.
- Narrol, G. H., & Levitt, E. E. Formal assessment procedures in police selection. Psychological Reports, 1963, 12, 691-694.
- National Commission on Productivity. Improving police productivity. Washington, D. C.: U. S. Government Printing Office, 1975.
- National Commission on Productivity and Work Quality. Jurisdictional guide to productivity improvement project. Washington, D. C.: U. S. Government Printing Office, 1975.
- New Jersey State Police Department. Performance evaluation manual. Trenton: Author.
- New York State Police Department. Job analysis of the position of New York State Trooper. Albany, N. Y.: Author, June 1976.
- Newbinger, H. M. Action level methods in the higher education of police officers. Police, August 1972, 55-57.
- Newman, J. M., & Irving, G. E. Hearing and vision standards for public safety personnel. Commission on Peace Officer Standards and Training, State of California, October 1974.
- Nie, N. H., Hull, C. H., Jenkins, J. G., Steinbrenner, K., & Bent, D. H. Statistical package for the social sciences. (2nd ed.) New York: McGraw-Hill, 1975.
- Niebel, B. W. Motion and time study. (5th ed.) Homewood, Ill.: Richard D. Irwin, 1972.
- Northwestern University, Police Study Group. Police research and evaluation studies: A working bibliography. Monticello, Ill.: Council of Planning Librarians, December 1976.

- Novak, L. P. Physical fitness standards appraisal of physical fitness. Dallas: City of Dallas Police Department, March 1975.
- Nowicki, S. A study of the personality characteristics of successful policemen. Police, January-February, 10, 1966, 39-41.
- Nunnally, J. C. Psychometric theory. New York: McGraw-Hill, 1967.
- O'Connor, G. M. Survey of selection methods. The Police Chief, 1962, 29, 61-62.
- Office of the Harris County, Texas, District Attorney. Texas penal code written especially for law enforcement officers. Houston: Author, 1974.
- Oglesby, T. W. Use of emotional screening in the selection of police applicants. Public Personnel Review, 1957, 18, 228-231.
- Olmstead, D. W., & Monachesi, E. D. A validity check on MMPI scales of responsibility and dominance. Journal of abnormal and social psychology, 1956, 53, 140-141.
- O'Neal, P., & Robins, L. Childhood patterns predictive of adult schizophrenia: A 30-year follow-up study. American Journal of Psychiatry, 1959, 115, 385-391.
- Pennsylvania State Police. A study of the job content and requirements of the Pennsylvania State Police Trooper. Harrisburg: Author, 1974.
- Perlstein, G. R. Female police: The need for research. Police, September 1970, 62-63.
- Peterson, D. R., Quay, H. C., and Anderson, A. C. Extending the construct validity of a socialization scale. Journal of Consulting Psychology, 1959, 23, 182.
- Pokorny, A. D. Background factors in schizophrenia. Diseases of the Nervous System, 1974, 35, 358-361.
- Police Foundation. Police personnel administration. Washington, D. C.: Author, 1974.
- Pritchess, P. J. Career development for professional law enforcement. Police, September 1970, 5-10.
- President's Commission on Law Enforcement and Administration of Justice. The challenge of crime in a free society. Washington, D. C.: U. S. Government Printing Office, 1967.

Prien, E. P., & Ronan, W. H. Job analysis: A review of research findings. Personnel Psychology, 1971, 24, 371-396.

Project Star: Role performance and the criminal justice system.
(Vol. I) Santa Cruz: Davis, 1976. (a)

Project Star: The impact of social trends on crime and criminal justice. Santa Cruz: Davis, 1976. (b)

Public Health Service, National Center for Health Statistics.
Weight, height, and selected body dimensions of adults:
United States 1960-1962. Public Health Service Publication
No. 1000, Series 11, No. 8. Washington, D. C.: Author,
June 1975.

Rand, T. M., & Wagner, E. E. Correlations between hand test variables and patrolman performance. Perceptual and Motor Skills, 1973, 37, 477-478.

Reckless, W. C., Dinitz, S., & Kay, B. The self component in potential delinquency and potential nondelinquency.
American Sociological Review, 1957, 22, 566-570.

Reed, C. F., & Cuadra, C. A. The role-taking hypothesis in delinquency. Journal of Consulting Psychology, 1957, 21, 386-390.

Reiser, M. Psychological research in an urban police department. Police, November 1971, 15-18.

Rhead, C., Abrams, A., Trosman, H., & Margolis, P. The psychological assessment of police candidates. American Journal of Psychiatry, 1968, 124, 1575-1579.

Richardson, H., & Roebuck, J. Minnesota Multiphasic Personality Inventory and California Psychological Inventory differences between delinquents and their nondelinquent siblings. In Proceedings of the Seventy-third Annual Convention of the American Psychological Association. Washington, D. C.: American Psychological Association, 1965.

Roberts, J. Binocular visual acuity of adults. United States 1960-1962, Vital and Health Statistics, U. S. Department of Health, Education and Welfare, Public Health Service. National Center for Health Statistics Series 11, Number 3, June 1964.

Robins, L. R. Deviant children grown up. Baltimore, Md.: Williams & Wilkins, 1966.

- Robinson, D. D. Predicting police effectiveness from self report of relative time spent in task performance. Personnel Psychology, 1970, 23, 327-345.
- Robinson, D. D. Issues in job performance evaluation, Police, January 1971, 41-44.
- Rokeach, M., Miller, M. G., & Snyder, J. A. The value gap between police and policed. Journal of Social Issues, 1971, 27, 155-171.
- Romig, C. H. A. The status of polygraph legislation in the fifty states: Part I. Police, September 1971, 35-41. (a)
- Romig, C. H. A. The status of polygraph legislation in the fifty states: Part II. Police, October 1971, 54-61. (b)
- Romig, C. H. A. The status of polygraph legislation in the fifty states: Part III. Police, November 1971, 55-61. (c)
- Rosenfeld, M., & Thornton, R. F. The development and validation of a police selection examination for the City of Philadelphia Educating Testing Service. Princeton, N. J.: Author, 1974.
- Ruch, F. Critical notes on "Seniority and testing under fair employment laws". The Industrial Psychologist, 1970, 7, 13-25.
- Ruch, W. W. The impact on employment procedures of the Supreme Court decision in the Duke Power case. Personnel Journal, 1971, 50, 777-783.
- Saunders, C. B. Upgrading the American police. Washington, D. C.: Brookings Institution, 1970.
- Schmidt, F. L., Berner, J. G., & Hunter, J. E. Racial differences in validity of employment tests. Journal of Applied Psychology, 1973, 58, 5-9.
- Schmidt, F. L., & Hunter, J. E. Racial and ethnic bias in psychological tests. American Psychologist, 1974, 26(1), 1-8.
- Schmidt, F. L., Hunter, J. E., & Urry, V. W. Statistical power in criterion-related validation studies (Professional Series 75-5). Washington, D. C.: U. S. Civil Service Commission, 1975.
- Schwartz, R. A., & McGowan, H. E. Analysis of assaulted and non-assaulted officers by height, weight, tenure and assignment. A report prepared by The Planning and Research Division, Portland Bureau of Police, 1973.
- Selection Consulting Center. The validation of entry-level law enforcement examinations in the states of California and Nevada. San Francisco: Selection Consulting Center, 1973.

Selection Consulting Center, Staff and Staff Counsel, Anthony S. DaVigo, Deputy Attorney General, State of California. A guide to selection court cases. Author, 1973. (b)

Selection Consulting Center, Commission on Peace Officer Standards and Training. Selection study - component A selection standards project. Sacramento, Calif.: Author, 1974.

Sharf, J. A psychologist's guide to Title VII legal language. The Industrial-Organizational Psychologist, 1975, 13(1), 30-31.

Sharf, J. Supreme Court to examine criterion adequacy and job analysis requirement in Moody v. Albemarle Paper Co. The Industrial-Organizational Psychologist, 1975, 12(3), 50-53.

Sharf, J. Supreme Court may decide Davis v. Washington. The Industrial-Organizational Psychologist, 1976, 13(2), 27.

Sharf, J. Washington v. Davis decided by Supreme Court. The Industrial-Organizational Psychologist, 1976, 13(3), 13-15.

Sharf, J. C. How validated testing eases the pressures of minority recruitment. Personnel, May-June 1975, 53-59.

Sharf, J. C. (Chm.). Implications of fair employment litigation for the practicing I/O psychologist. Symposium presented at the meeting of the American Psychological Association, Washington, D. C., August 1976.

Sherman, L. J. A psychological view of women in policing. Journal of Police Science and Administration, 1973, 1, 383-394.

Sherrill, K. W. You can't tell by looking. Police, March-April 1966, 62-65.

Shev, E. E., & Wright, J. The uses of psychiatric techniques in selecting and training police officers as a part of their regular job. Police, May 1971, 13-16.

Siegal, S. Nonparametric statistics for the behavioral sciences. McGraw-Hill, 1956.

Smith, C. P., Pehlke, D. E., & Weller, C. D. Project Star: Role performance and the criminal justice system. Vol. 1 Summary. Santa Cruz, Calif.: Davis, 1976.

Smith, D. H., & Sohan, E. Forced-choice performance rating for policemen. Proceedings, 81st Annual Convention, American Psychological Association, 1973, 987-988.

Snibbe, J. E., & Snibbe, H. M. The urban policeman in transition: A psychological and sociological review. Springfield, Ill.: Charles C. Thomas, 1973.

Southern Methodist University, Center for Police Development. Report on police shootings. Dallas: Author, 1973.

Spevak, M., & Pihl, R. O. Nonmedical drug use by high school students. International Journal of Addiction, 1976, 11, 755-792.

Staples & Staff, Inc. Houston Police Department recruitment, survey report. Houston: Author, 1975.

State of California, Fair Employment Practice Commission, Technical Advisory Committee on Testing (TACT). Guidelines on employee selection procedures. Sacramento: Author, 1972.

State of California, Fair Employment Practice Commission. Fair Employment Practice Act (Chapter 121, Part 4.5, Division 2, Labor Code): FEPC rules and regulations: Guide to pre-employment inquiries. Sacramento: Author, 1973.

State of Texas, Criminal Justice Council. Final report on recommended improvements in municipal police personnel regulations and practices. Austin: Author, August 1973.

State of Texas, Equal Employment Opportunity Office. Equal employment opportunity and the Texas criminal justice system. Austin, Tex.: Author, August 1975.

Stead, Shartle and Associates. Occupational counseling techniques. New York: American Book, 1940.

Steffenhagen, R. A., Schmidt, F. E., & McAree, C. P. Emotional stability and student drug use. Journal of Drug Education, 1971, 1, 347-357.

Stein, K. B., Vadum, A. C., & Sarbin, T. R. Socialization and delinquency: A study of false negatives and false positives in prediction. Psychological Record, 1970, 20, 353-364.

Sterne, D. M. Use of the Kuder Preference Record with police officers. Journal of Applied Psychology, 1965, 44, 323-324.

Sticht, T. G. (Ed.) Reaching for work: A functional literary anthology. Alexandria, Va.: Human Resources Research Organization, 1975.

The Supreme Court of the United States. Brief of amicus curiae Washington v. Davis. Washington, D. C.: U. S. Government Printing Office, October 1975.

Taylor, C. R. Standards for selection, training, and education of police personnel. Police, 1969, 14, 36-40.

Taylor, J. O. A review of the court's definition of adverse impact. Paper presented in the Symposium: Implications of Fair Employment Litigation for the Practicing I/O Psychologist at the American Psychological Association 84th Annual Convention, Washington, D. C., September 6, 1976.

Tenopyr, M. L. Selection, testing and the law: What psychologists can do. The Industrial-Organizational Psychologist, 1973, 10.

Teske, R. Contact lenses: Potential solution to the shortage of qualified applicants for positions as law enforcement personnel. Police, January 1971, 30-33.

Teske, R., & Nelson, B. H. Selected requirements for law enforcement personnel. Police, July 1972, 32-35.

Texas A&M University, Texas Transportation Institute. The patrol officer task inventory and analysis. (Completed for the Texas Commission on Law Enforcement Officer Standards and Education) College Station, Tx.: Author, 1974.

Texas Commission on Law Enforcement Officer Standards and Education. Public opinion of criminal justice in Texas. Austin: Author, 1975.

Texas Commission on Law Enforcement Officer Standards and Education. Police officer entry selection system - validity report. Austin: Author, 1976.

Texas Commission on Law Enforcement Officer Standards and Education. Rules and regulations of the Texas Commission on Law Enforcement Officer Standards and Education. Austin, Tex.: Author, January 1, 1976.

Texas Department of Public Safety. Physical forces affecting an automobile in motion: Resource outline for driver education instructors in secondary schools and colleges. Austin: Author, 1961.

Texas Department of Public Safety. Plan for riot control operations. (Operations Memo No. 7-69) July 1, 1969.

Texas Department of Public Safety. Recommendations for organizational changes in highway patrol service. TLE Division, Interoffice Memo, Revised September 29, 1971.

Texas Highway Department, Motor Vehicle Division. Texas motor vehicle laws. Austin: Author, 1973-1974.

Texas Traffic Institute, Texas A&M University. A task analysis of the patrol officer position. (A report submitted to the Texas Commission on Law Enforcement Officer Standards and Education) College Station, Tex.: Author, 1976.

Thorndike, R. L. Personnel selection. New York: Wiley, 1949.

Thorndike, R. L. Concepts of culture-fairness. Journal of Educational Measurement, 1971, 8, 63-70.

Toomey, W. C. Analysis of comparative personnel problems in police administration. Police, July-August 1971, 26-31.

Traffic Institute. Stopping and approaching the traffic violator. Evanston, Ill.: Northwestern University, 1958.

Traffic Institute. Taking enforcement action. Evanston, Ill.: Northwestern University, 1958.

Traffic Institute. Traffic officer in court. Evanston, Ill.: Northwestern University, 1965.

Traffic Institute. Officer-violator relationships. Evanston, Ill.: Northwestern University, 1969.

Traffic Institute. The police supervisor and the recruit: Orientation and on-the-job training. Evanston, Ill.: Northwestern University, 1972.

Traffic Institute. Evaluation and the police supervisor. Evanston, Ill.: Northwestern University, 1973.

Traffic Institute. Pursuit in traffic law enforcement. Evanston, Ill.: Northwestern University, 1974.

Tyndel, M. Psychiatric study of the chronic drunkenness offender. Canadian Psychiatric Association Journal, 1969, 14, 275-285.

U. S. Department of Labor, Employment Standards Administration, Office of Federal Contract Compliance. Reviews of validity studies on tests and other methods. (Memorandum) Washington, D. C.: Author, 1972.

United States Civil Service Commission. Federal personnel manual supplement: Testing and employee standards instructions. (As appendices to Supplement 271-1, 271-2, 335-1 and 990-1 (Book 3), Part 900, Subpart F) Washington, D. C.: U. S. Government Printing Office, 1976.

United States Department of Justice, Law Enforcement Assistance Administration. Effect on minorities and women of minimum height requirements for employment of law enforcement officers. Washington, D. C.: Author, March 1973.

United States Department of Labor, Wage and Labor Standards Administration. Age discrimination in Employment Act of 1967. Washington, D. C.: U. S. Government Printing Office, 1967.

United States Senate, Committee on Labor and Public Welfare. The Equal Employment Opportunity Act of 1972. Washington, D. C.: U. S. Government Printing Office, 1972.

Valentine, P. Does height affect policeman's job? Washington Post, January 15, 1974.

Vincent, C. Unmarried mothers. New York: Free Press of Glencoe, 1961.

Warburton, F. W. Observations on a sample of psychopathic American criminals. British Journal of Psychiatry, 1965, 125, 129-135.

Ward, J. H., Jr., & Hook, M. E. Application of an heirarchical grouping procedure to a problem of grouping profiles. Educational and Psychological Measurement, 1963, 23, 69-81.

Welsh, G. S., & Dahlstrom, W. G. (Eds.) Basic readings on the MMPI in psychology and medicine. Minneapolis: The University of Minnesota Press, 1956.

Wicks, R. J. Applied psychology for law enforcement and correction officers. New York: McGraw-Hill, 1974.

Wilkie, R. C. Job-related physical tests for patrol officers. The Police Chief, May 1974, 42-47.

Winer, B. J. Statistical principles in experimental design.
(2nd ed.) New York: McGraw-Hill, 1971.

Wolfe, J. B. Some psychological characteristics of American policemen: A critical review of the literature.
Proceedings, 78th Annual Convention, American Psychological Association, 1970, 453-454.

Wollack, S., Clancy, J. J., & Beals, S. The validation of entry-level law enforcement examinations in the states of California and Nevada. Sacramento, Calif.: The Selection Consulting Center, September 1973.

Wollack, S. J., Weibel, J., & Associates. Police officer entry selection system. A report submitted to the Texas Commission on Law Enforcement Officer Standards and Education, 1976.

Zacker, J., & Bard, M. Effects of conflict management training on police performance. Journal of Applied Psychology, 1973, 58, 202-208.

Zentner, J. L. Review of "The cannabis experience: An interpretive study of the effects of marijuana and hashish." Journal of Psychedelic Drugs, 1975, 7, 85-86.