THE VALIDITY OF THE MMPI IN THE

SELECTION OF POLICE OFFICERS

THESIS

Presented to the Graduate Council of the

North Texas State University in Partial

Fulfillment of the Requirements

For the Degree of

MASTER OF SCIENCE

By

Sandra Dean West, B. S.

Denton, Texas

May, 1988

West, Sandra Dean, The Validity of the MMPI in the Selection of Police Officers. Master of Science (Industrial Psychology), May, 1988, 70 pp., 11 tables, references, 62 titles.

This study examined the validity of the Minnesota Multiphasic Personality Inventory (MMPI) as a predictor for police officer selection. The MMPI profiles of 212 police officer applicants selected to enter the training academy were compared to the standardized MMPI norms. Significant differences between the police officers and the normative population were found on all but two scales. When the average profile of officers still on the police force was compared with the average profile of terminated officers, two scales were significantly different. Significant correlations were obtained between four MMPI scales and the academy score criterion and two scales each for the commendation and supervisory rating criteria. A prediction equation was developed for academy score using multiple regression analysis.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Historically, police officer selection has been one of the most difficult tasks confronting personnel specialists and researchers. This is evident in a quote from Vollmer (1921).

> The poor quality of personnel is perhaps the greatest weakness of police departments in the United States. In departments of all sizes, the percentage of men suited to police work is woefully small . . . the greatest number of these men are badly placed and inadequately trained, yet they are charged with a task that would be difficult for men of the highest quality and skill. (p. 571)

Decades later the inability to recruit and retain qualified personnel is still one of the most serious issues facing law enforcement as a profession (Adams, 1972). In support of this view, Colarelli and Siegel (1964) stated that "the critical problem of selecting candidates is one of the thorniest, the most expensive, the most time consuming tasks facing such (police) organizations" (p. 287).

Effective selection of police officers rests on setting and enforcing proper minimum qualification standards. The National Advisory Commission on Criminal Justice Standards

1

and Goals (1973) recommended the following minimum standards for selection of police officers in a report published in 1973: a) physical health, strength, stature, and ability, with consideration given to the physical demands of police work; b) character, with consideration given to the responsibilities of police officers and the need for public trust and confidence in police personnel; and c) education, with consideration given to the mental skills and knowledge necessary to perform the police function properly. A formal process for police officer selection was suggested which would include a written test of mental ability or aptitude, an oral interview, a physical examination, a psychological examination, and an in-depth background investigation.

Psychological tests have been frequently used as part of an occupational screening and evaluation program even though they were not developed for this purpose. Unfortunately, validation work on the use of these tests for predicting police job performance is very limited (Spielberger, 1979) and most research which has utilized recruits were officers has not been longitudinal (Crosby, 1979). This has contributed to the selection of persons who are not qualified for police work instead of job candidates who have a high potential for success.

Studies which describe the typical police candidates or police officers fall into four categories: intelligence, vocational interest, personality characteristics, and

biographical information (Poland, 1978). Studies reported here will focus on personality testing of police candidates with the Minnesota Multiphasic Personality Inventory (MMPI).

Some general problems with the use of personality tests in personnel selection are: a) misuse as selection instruments, b) poor construction, c) lack of validation or no validation for use to which they are placed, d) over emphasis on test results, e) adverse impact, and f) invasion of privacy (Tielsch & Whisenand, 1977).

The major problem with the use of psychological screening for police selection is that few, if any, tests have been validated for this purpose. This is due in part to a lack of knowledge about the psychological aspects of police work. Although the majority of psychological tests were developed to examine emotional difficulty in hospitalized patients, Leonard (1970) believed that personality tests are extremely useful as screening tools in exposing traits which are incompatible with police agencies. However, the use of psychological tests to screen applicants for police work is questionable unless the tests are validated and appropriate follow-up work is done (Stratton, 1980).

More personality assessment research has been conducted on the MMPI than any other instrument. From the time the MMPI was originally published in 1943 by the University of Minnesota Press, to 1960, at least 213 scales had been developed (Dahlstrom & Welsh, 1960). These included the 10

major clinical scales which are used to objectively measure the presence of psychopathology. The mental health practitioner uses the MMPI to detect any of the following: emotional instability, problems accepting authority, excessive dependency needs, sexual identity problems, and paranoid, depressive, neurotic, psychopathic, or schizophrenic tendencies.

The goal of psychological evaluation for police selection has been debated in recent years. Some hold the traditional belief that psychological tests should be used to search for psychopathology and to screen out unstable individuals who fail the exam. Others contend that the goal is to select those who are the most stable and possess the traits necessary to be an effective police officer (Swank & Conser, 1983). The current research will focus on the use of the MMPI to screen out individuals who are emotionally unstable, since no one personality pattern (or range of patterns) appears to meet an overall ideal, due to the diversity of law enforcement jobs.

Incorporating the following steps into the selection process, police officer selection can be made more defensible by: a) conducting a thorough job analysis, b) screening by a qualified psychologist, c) providing written rationale for the instruments and procedures used, d) keeping records of those who were screened, e) computating adverse impact statistics, and f) being willing to testify

in court regarding the validity of the screening procedures (Hardgrave & Kohls, 1984).

Job studies that have been conducted on the police officer position are numerous, and many common elements have been detected. For example, in a study of six cities, the following common elements were identified: crime prevention; use of force; maintenance of public safety; traffic maintenance and control; investigation, detection, and follow-up on criminal activity; report writing; dealing with the public; and handling domestic disputes (Dunnette & Motowidlo, 1976). Several job studies indicate that 90 percent of the officers' duties consisted of some form of community service. A great deal of interpersonal skill and use of discretion were essential to resolve disputes between citizens (Swank & Conser, 1983).

Specifically, Holmes (1942) pointed out that the development of an effective police selection battery required a detailed job analysis. He identified the following characteristics as being desirable for police officers:

> . . . accurate memory and observation, reasoning ability, analytical judgment, ability to follow directions, ability to organize material, mental alertness, speed of decision, judgment (common sense), determination, social intelligence (understanding human nature) and aggressiveness. (p. 578)

Standard Civil Service examinations and screening procedures, including background investigations, physical agility tests, physical examination and oral interview all fail to eliminate applicants with psychological and emotional problems which could deter their ability to function as police officers. Psychological testing is critical because an emotionally unstable officer who terminates employment due to misconduct or incompetence can cause destruction and can cost a police agency thousands of dollars.

There has been an increase in the use of psychological testing for police applicants since the Civil Service Reform Act of 1883 when tracking of police officer selection began. The earliest attempt at psychological screening was by Louis Terman of the City of San Jose, California on October 31, 1916. Terman (1917) believed that except for high morals, intelligence was the most important factor in determining fitness of an applicant for police and fire work. In 1921, Vollmer recommended a psychiatric exam as well as intelligence testing to detect the unstable and unfit.

Shev and Hewes (1977) divided police officers into three categories. The first category consisted of five percent of all police officers who intuitively handled the work and pressures of the job. The second category, the "treatable" cop had to work hard to master all the skills of

being a police officer including the ability to handle
pressure. Shev stated:

> The really dangerous police are the 35% who make up the
> third category. These are the "untreatable" men and
> women--the bad cops. Their personalities are not
> suited to police work, and they are unable to learn
> about themselves or accept treatment that would allow
> them to function adequately as police officers. One
> cop in three is untreatable and the actions of this
> minority are usually responsible for the bad reputation
> of police in many communities. (p. 55)

Shev had no detailed studies to support his claims which
rested on psychiatric interviews with police recruits.

The 1950's marked the beginning of an era in which an
emphasis was placed on personality characteristics and
mental abilities. This change brought about increased use
of psychologists and psychiatrists in the selection process
(Daley, 1978). The psychological test and/or clinical
appraisal, which is a judgment by a professional clinical
psychologist or psychiatrist regarding the applicant's
potential to perform in the police role, is now a traditional
part of the selection process. However, the use of
clinicians in selection has been called into question, in
part, because these professionals are trained to work with
emotionally unstable people to diagnose and treat a
particular condition, not to predict future behavior.

Another contention is that the clinician is not needed, because the background investigation can do all that the clinical appraisal can, since the best predictor of future behavior is past behavior. Crosby (1978) discussed these issues and upheld the necessity for clinical appraisal.

A great deal of inconsistency has been found in profile interpretation by clinician raters. The study conducted by Costello (1976) is a case in point. Two clinicians were asked to sort the MMPI profiles of police cadets into high risk and low risk groups based on suitability for police work. Intrarater reliability was high with about 90 percent of the profiles seen more than once being placed in the same category. However, the interclinician reliability was 65 percent with agreement reached on only 60 of 92 profiles. This result indicates that while each rater used his own rules consistently, he did not use the same rules as the other rater. This study had methodological flaws including: a) a lack of controls; b) an absence of information about the representativeness of the sample, c) failure to monitor attrition with regard to MMPI correlates, and d) failure to use an objective empirical assessment procedure, such as multiple linear regression. Costello concluded that selection systems should be validated on a department-by-department basis since inconsistency occurs in evaluation.

Matarazzo, Allen, Saslow, and Wiens (1964) conducted a study in which a team including psychiatrists and

psychologists derived risk statements about applicants based on "clinical" interviews and MMPI test results. Forty-four percent of the applicants were labeled high risk even after 94 percent of the original pool was screened out by other means. The decisions were not validated and the work cannot be replicated, because no objective rules with regard to MMPI profile interpretation were given, except that profiles appearing to suggest "clinical fragility" or "psychosis" contributed to the conclusion of high risk.

The evidence is not conclusive that the involvement of behavioral scientists in the selection process actually improves assessment. Theoretical assumptions from professional training and clinical work to assess psychopathology are applied to personnel screening as if they are appropriate for predicting future behaviors. Despite all of these criticisms, the clinical appraisal can help to estimate likelihood of future breakdown in behavior.

Two general hypotheses can be found in the literature regarding the origin of the "police personality." The socialization model purports that the police personality is a product of the formal and informal demands of police work. In other words, values and attitudes deemed necessary for adequate performance are adopted by the police officer on the job. On the other hand, the predisposition model contends that law enforcement attracts those who already possess certain personality traits and these are accepted and

rewarded in the occupation of police officer (Bennett &
Greenstein, 1975).

Levy (1967) discussed the practice of screening out
police applicants whose life histories, interviews, tests,
or references revealed the presence of "anxiety, rigidity,
low intelligence, poor credit ratings, criminal records,
sadistic tendencies, alcoholism, dishonesty, homosexuality,
or behavioral manifestations of impulsivity" (p. 265) which
are traits not consistent with the needs of good law
enforcement. Levy noted that these traits are absent when
the applicant is hired but are frequently present at the
time of termination. This finding suggested that police
work, by nature, has the capability of bringing about a
change in the self-image and behavior of the officer, which
lends support to the socialization model.

In addition, Levy (1967) studied the personnel records
of 4,500 California police officers hired during 1952-1962.
She hoped to find what, if any, factors before selection
discriminated between those who terminated due to
occupational inadequacies and those deemed adequate and
successful. Officers terminated for cause tended to be
younger at the time of appointment, were better educated,
had more traffic violations, and had a shorter work history.
Generally, these officers exhibited a pattern of impulsivity
and mobility. She contended that rejection of emotionally
unsuited applicants who did not possess qualities typical of

police officers was more effective than rejection of emotionally unstable candidates who exhibited signs of pathology or severe neuroses.

A study by Bennett and Greenstein (1975) evaluated the validity of the predisposition model by looking at the value system of police science majors compared to non-police majors. While the value systems of police majors were nearly identical to that of non-police majors, police science majors were divergent from the value systems of experienced police officers. Thus, the predisposition hypothesis was rejected and the socialization hypothesis was supported, which suggests that the focus should be on new training methods rather than selective recruitment on the basis of personality variables.

Mills, McDevitt and Tonkin (1964) found that recruits and veteran patrol officers had similar MMPI profiles and both showed small standard deviations in deviant scale values. These results support the predisposition model and suggest a highly homogeneous population. Similar results, which argue against the socialization hypothesis were obtained by Rokeach, Miller, and Snyder (1971). When they compared the value patterns from the Rokeach Value Survey for police under age 30, between 30 and 39, and over 40, none of the 36 values showed a significant difference.

Since research studies lend support to both the predisposition and socialization models for development of

the police personality, the evidence is inconclusive.
However, it can not be disputed that situational factors
contribute to stress experienced by a police officer.
Symonds (1970) discussed two types of stress experienced by
police officers. One type is stress due to the nature of
police work and the other type is a result of the nature of
the police organization. When beginning a career as a
police officer, an individual views himself as a helper and
protector of others. Once in the field, emotional strain is
caused by an uncooperative and often hostile public the
officer is supposed to be helping. The officer must deal
with all types of people including juvenile offenders,
arsonists, sex offenders, burglars, drug addicts, drunks,
prostitutes, and homosexuals. He must be able to use good
judgment and discretion when under pressure and stress
knowing that he is exposed to danger and is continuously
facing the unknown in the police officer role.

The second type of stress is caused by the nature of
the police organization and its quasi-military structure.
The police officer must be able to work under an
authoritarian management system while performing
aggressively on the job. Many issues must be faced
including problems in law enforcement, assignments,
promotions, and interdepartmental orders.

As one can imagine, several conflict areas are
prevalent in the work of a police officer. The four major

areas are law enforcement vs. service function, prosecution of offenders vs. legal or procedural constraints, individuality vs. bureaucratic control, and maintenance of authority vs. presentation of self (Butler & Cochrane, 1977).

Careful selection of police officers is essential since they may be required to arrest, subdue, enforce, control, shoot, and kill. The effective police officer must be rational, controlled, reasonably objective, and able to act appropriately under extreme stress and pressure. Given the stressful nature of police work, applicants should be given psychological screening tests to evaluate the ability to handle stress and control emotions, as well as the tendency toward hostility and aggression and the attitude toward power (Stratton, 1980).

Although methods for evaluation of psychological fitness vary from state to state, an increased usage of psychiatric evaluation for determining emotional fitness has taken place over the years (O'Connor, 1962). When Frost (1955) conducted a survey of 33 American cities regarding policies, procedures and methods by which police officers were selected, he found that none of the cities sampled reported using psychological tests to screen applicants.

Oglesby (1957) conducted a survey which indicated that 14 of 90 cities with a population greater than 100,000 had a formalized program of psychological screening, which

consisted primarily of a psychiatric interview. However, six of these cities used a paper-and-pencil psychological test. In the course of the survey, Oglesby found that Wilmington, Delaware and Toledo, Ohio have been doing psychiatric screening since 1938.

In 1956, the International Association of Chiefs of Police conducted a survey that was reported by O'Connor in 1962. Only eight percent of the responding agencies (population 25,000 or greater) reported that they routinely screened police applicants for emotional fitness. Only two cities said that they used the MMPI.

When O'Connor conducted a follow-up study of cities with 25,000 or greater population in the 1961, 16 percent of the police agencies (49 cities) were doing some form of psychological screening. The MMPI was used in 12 cities and the Rorschach was used in seven. Narrol and Levitt (1963) surveyed 61 cities with population greater than 150,000. They found that only 22 percent of the agencies surveyed reported using any type of personality inventory to screen applicants and 16 percent used psychological tests in addition to a psychiatric interview. Also, Narrol and Levitt's survey showed that several other techniques including polygraph, stress interview, and group interview were used in the selection process. However, only the city of Minneapolis, Minnesota was doing research in selection of police officers.

A study by Murphy (1972) was indicative of the increased usage of psychological testing for police officer selection in the 1970's. He surveyed 258 municipal police agencies with more than 100 officers on their force in cities with 50,000 or more population and 49 state police agencies. A total of 203 responses were received including 173 local agencies and 30 state police forces. The survey results revealed that 76 (43.9%) of the local agencies and only four (13.3%) of the state forces used 36 various psychological tests. The MMPI was the most widely used personality test with 39 (48.7%) departments out of 80 using this instrument. Only four used the California Psychological Inventory (CPI) and two used the Sixteen Personality Factors (16PF). An additional 14 percent utilized some sort of psychiatric or psychological appraisal only when the test results raised a question about the emotional stability of an applicant. Another survey by the Los Angeles County Sheriff's Department (1973) showed that 33 of 48 departments used the MMPI. Less than five departments used either the CPI, 16PF or a similar instrument. Although rejection rates of from 43.7 percent to 89.1 percent were reported by O'Connor (1962) for standard screening procedures for police applicants from various regions of the country, substantial numbers who passed the other screens were psychologically unqualified. For example, Rankin (1957) reported a psychiatric rejection rate of 15.6 percent

based on evaluation of 161 successful candidates using the MMPI and group Rorschach.

When Rankin (1959) looked at the use of psychological screening from 1953 through 1959, he found that 11 percent of 2,000 applicants for the Los Angeles Police Department were emotionally unfit. All of these were classified in the "personality disorders" general category with the following diagnosis--51 percent latent psychotic, 15 percent inadequate personality, 22 percent schizoid personality, and 14 percent cyclothymic or paranoid personality. Rankin's explanation for this finding was that the overly neurotic or psychotic applicant would have dropped out as a result of the time lapse and frustration with the Civil Service process. However, the latent psychotic might have persisted because he is attracted to the security and prestige of the uniform and the opportunity to exert authority.

Rankin was an advocate of including psychiatric and psychological screening as part of the recruit selection process, in particular the MMPI and Rorschach. He felt that any test utilized should have "wide areas of application" and "many years of validation" but no empirical evidence was submitted regarding the instruments used in his own work.

Mills, McDevitt and Tonkin (1964) studied MMPI profiles of 149 officers and 89 recruits in Cincinnati, Ohio because they felt that motivational, emotional and personality dimensions were largely untapped in the traditional

selection process. They found that 10 to 15 percent of the prescreened group with a high school diploma who passed the physical exam, background investigation, polygraph and oral interview were considered high risk based on their MMPI profiles and were dropped from the eligibility list. They concluded that the police officers were a basically a healthy group psychologically that did not differ greatly from the normal population.

Rhead, Abrams, Trosman and Margolis (1968) reported that 30 percent of over 1,000 of Chicago's presreened police applicants were recommended for rejection during an 18-month period from 1961-1963. All applicants who passed the Civil Service Exam were given the MMPI and Draw-A-Person tests. Those candidates with deviant results were called back for individual testing. Of the 30 percent recommended for rejection, 21 percent of these exhibited evidence of "grossly incapacitating illness."

A plethora of research has been conducted on psychological test data to study what has been called the "police personality." Studies by Matarazzo et al. (1964), (1964), Nowicki (1966), Levy (1967), Rhead et al. (1968) and Gottesman (1969) generally indicated that police officers differed from the general population on several personality characteristics. These characteristics were described in terms such as "blustery," "sociable," "impulsive," "tough minded," "conservative," "stable" and "practical" based on

test interpretations (Matarazzo et al., 1964).

One of the most popular stereotypes of the "police personality" is a racist and superconventional upholder of the status quo, and potentially brutal sociopath who derives great satisfaction out of beating people. Another stereotype is that of the man's man which describes the police officer as being "blustery, sociable, impulsive, opportunistic, active" (Matarazzo et al., 1964). Still another view is that the police officer has an excessive love for children and the elderly--"the thin blue line" that protects the democratic way of life by fighting against crime.

Empirical data were provided by Butler and Cochrane (1977) to identify trends and patterns in the dominant personality factors of groups of police officers. Using the Edwards Personal Preference Schedule and the Rokeach Value Survey, the data showed a trend toward a personality which needs to argue one's point of view and be independent in decision making. The tendency away from the need to recognize guilt and to do new and different things was also prevalent. The Rokeach Value Survey showed a trend toward conservatism and an increase in the relative value of self esteem.

Nordlicht's (1979) research in New York found that police officers tend to mask feelings, have little communication with spouses, and are unable to give attention and love to children. Stress on the job and limited

exposure to the world was thought to lead to the high rate of alcoholism found in officers.

Although most research in police organizations assumes a single police personality which differs from non-police, some studies have suggested that the average police officer applicant does not differ significantly from the average white collar worker or lower middle class worker in terms of personality traits. While no unique factors exist within the police officer's working personality, it differs from others in emphasis (Butler & Cochrane, 1977). Balch (1972) contended that police officers are as heterogeneous as any other group and that a "police personality" which could provide a sound basis for selection, does not exist. After reviewing studies of police recruit personalities, Balch (1972) listed what he considered to be positive qualities of effective officers: a) no psychopathology; b) motivation for law enforcement career; c) normal self assertion; d) emotional stability under stress; e) sensitivity toward minority groups and social deviates, with a nonjudgmental attitude and f) collaborative leadership skills including being socially outgoing, influential with peers, and expressing ideas clearly.

Contrary to popular belief, all types of personalities are needed in police work to do many different kinds of jobs (i.e., patrol, vice, training, administration). In addition, many factors can affect the personality of the

police officer such as the assignment, crime patterns, supervision received and citizen characteristics (Tift, 1974). Personality characteristics necessary in police work vary according to region and community and over time as communities change (Daley, 1978). Research on several occupations has shown that requirements for success in a given occupation vary with the characteristics of the organization and the characteristics that an individual brings to the organization (Dunnette, 1966). These factors deter the identification of the personality of an ideal officer.

Dudycha (1955) was the first to emphasize the personality characteristics of applicants as the most critical area of concern in police recruitment and selection. He felt that the following 11 characteristics were the most necessary for a police applicants to possess: initiative, practical judgment, ability to learn, ability to follow directions, social sense, cooperative attitude toward others, attitude toward work, emotional control, dependability, and accuracy. He felt that it was essential that people who are emotionally unstable, predisposed toward mental illness or actually psychotic be eliminated early on. Dudycha recommended a psychiatric exam, but with a large number of applications, use of personality testing was acceptable if the test had built in validity and lie scales to assess applicants who attempted to answer in a favorable

light. Dudycha can be considered a front-runner in the

application of "advanced" psychological techniques to the

evaluation of police officer personalities.

Niederhoffer (1967) and Chevigny (1969) both believed

that authoritarianism did not come into the force with

recruits but was brought about by socialization.

Authoritarian reactions by police officers were thought of

as a logical product of the police role and the

organization. However, an interesting finding reported by

Smith, Locke, and Walker (1967) showed that college educated

police officers are significantly less authoritarian than

police officers who have not attended college.

Balch (1972) reviewed the literature to determine the

characteristics that are commonly attributed to police

officers. His list included suspicion, conventionality,

cynicism, prejudice, and distrust of the unusual which

described an authoritarian personality. However, after he

examined various studies in sociological and attitudinal

research, Balch concluded that the evidence was

inconsistent. Thus, the hypothesis of authoritarian

personality among police could not be established or

disproved.

Some questions have been raised in the literature

regarding the masculinity of police officers. In 1967,

Niederhoffer discussed strong unconscious homosexual needs in

police officers but he had no empirical data to support

his opinion. More recent data show that police officers obtain scores in the normal range on the MMPI Masculinity-Femininity (Mf) scale and do not support the contention that police officer suffers from a deficit of masculinity.

Fenster and Locke (1973) conducted a study which investigated whether police and civilian groups at two educational levels differed on masculinity-femininity scores on two standard tests, the MMPI and Form I of the Wechsler Interest Inventory. The New York City police group consistently obtained more masculine scores than any of the other groups. Thus problems of sexual identity were not found to be characteristic of average New York City police officers.

Murrell and Lester (1979) administered the MMPI to 123 police recruits in training separated into four groups. Thirty-three male college students served as a comparison group. The mean T-score of 58.5 for the police group was significantly higher than the mean T-score of 50 but the mean T-score for the college students was even higher (M = 62.7). These results suggest that police recruits were not deviant in Mf scale scores on the MMPI when compared with other males tested during the same era.

The effects of year of birth, age, and time of measurement were assessed in 119 police academy recruits (Costello & Schoenfeld, 1981). A two-way univariate ANOVA showed that the MMPI scale scores were not affected by age

or year of birth. Nine of thirteen scale scores (L, F, K,
Hs, Pd, Pt, Sc, Ma, Si) were affected by time of
measurement. Another interesting aspect of this study was
that from 1964-1971, recruits were showing more
"symptomatology" and less "defensiveness" at a non-
significant level. In 1972, a consultant clinical
psychologist was hired by the department which seemed to
have the effect of increased guardedness by the recruits,
possibly out of fear of scrutiny. The averages of the
profiles did not indicate psychopathology or altered
approaches to the test. The major conclusion of this
research is that only applicants who are so disturbed that
they cannot change their test behavior to fit normal
standards will be detected by the MMPI.

Even though the complexities of the police job demand a
high level of psychological well-being, very few studies
have looked at the relationship between performance on
the job and personality patterns. An unpublished study of
87 police applicants who were given the MMPI, Rorschach,
Draw-A-Person, Strong Vocational Interest Blank, and Otis-
Lennon Test of Mental Abilities was conducted by Blum
(1964). The test results, which were not used in the
selection decision, were correlated with on-the-job
performance seven years later. The findings indicated that
the number of exceptionally serious misconduct charges
against officers were significantly correlated with Sc, .47;

F, .42; P+, .40; Pa, .34; and Ma, .32. Blum felt that the MMPI could be used to reject applicants who would potentially become subjects of serious misconduct charges. However, these results should be viewed with caution due to the large number of criteria and predictors used by Blum, his failure to give significance levels, and his failure to cross-validate.

Gottesman (1969) collected MMPI profiles on 203 applicants who successfully passed on selection hurdles of urban police departments from 1966-1969 and 100 MMPI profiles from a group of war veterans who had no physical or psychological disabilities to use as a peer comparison group. He compared those profiles with profiles of 89 Cincinnati police recruits reported by Mills et al. (1964) and the MMPI normal standardization group as reported by Dahlstrom and Welsh (1960). The police applicant group mean profile differed significantly from the MMPI normal group profile on the F, K, Hy, Pd, Pa, Ma, and Si scales with the greatest difference being elevated F and K scores on applicant group profiles. Mills' group also had elevated F and K scores and differed significantly from the MMPI normal group on those scales and the L scale.

The similarity of profiles across two geographically distinct applicant groups led Gottesman to conclude that a "fake desirable" response set was shown by both groups which could have led to higher rejection rates than warranted.

Gottesman suggested that a comparison group more similar in age, marital status, education, and socioeconomic status to potential police applicant groups be created because "any attempts to interpret personality characteristics of member of subgroups whose demographic characteristics differ significantly from the MMPI normal groups are fraught with dangers of misinterpretation and erroneous conclusions" (p. 132). However, Gottesman suggested that the profile consistency that does occur may be useful in selection "unless there is a substantial change in image of the police force and work content" (p. 134).

In 1962, Marsh attempted to study the predictive value of several hurdles in the selection process including the personality tests for deputy sheriffs hired between 1948-1950. Personality data were available on only 100 applicants who received counseling. The criteria for this study were multiple rater evaluations of each subject's job performance, employment status, rank status, and job related accidents. Results on the analysis showed that subjects with T scores below 55 on the Ma and Hs scales were found much more likely to succeed. Those with T scores greater than 55 had lower performance ratings, but no statistical measure of the strength of the relationship was given. The likelihood of involvement in an auto accident related to T scores of 55 or above on the Ma scale and T-scores below 50 on the D scale. The results must be interpreted with

caution because a small sample size ($\underline{N}$ = 100) took the test for counseling purposes, chi square was used instead of multiple correlation, and no cross-validation was conducted.

In 1973, Azen, Snibbe, and Montgomery did a longitudinal study as follow-up work to Marsh (1962). They used the same predictor variables as Marsh which included employment status, rank status, and job type as of 1970 or termination date, supervisor ratings, job related accidents prior to 1958, and job related accidents prior to 1970. The only two scales on the MMPI that were significant predictors of auto accidents were the inversely related D scale and the directly related Ma scale. However, height of the officers was more predictive of auto accidents than the D or Ma scales. The Hs scale slightly predicted the rank reached by an officer. The MMPI did not predict retention on the job, job type, or supervisor ratings.

Colarelli and Siegel (1964) reported on the Kansas State Highway Patrol selection program. Predictors in this study were the California Test of Mental Maturity, Edwards Personal Preference Schedule, Allport Vernon Study of Values and the MMPI. The patrol officers were divided into desirable and undesirable classes using criteria of supervisor ratings, arrests, warnings, and accidents investigated. The results showed that the screening battery successfully identified recruits who were later rated unsatisfactory on eight performance criteria by their

supervisors. The MMPI indicated that good applicants were those with profiles similar to the population norms. Those with elevations on the K-scale and Psychopathic Deviate (Pd) scale were shown to be poor applicants. The major conclusion of this study was that based on the criteria used, paper-and-pencil psychological tests could be helpful in predicting performance. The results have limited generalizability, since the criteria in question are narrow in scope and apply to only one of many police functions.

A study of 243 police officers and fire fighters was conducted by Matarazzo et al. (1964). No psychopathology was indicated by the means of the MMPI scales for police or fire personnel and their profiles were very similar. The authors reported an interesting finding from their clinical interviews: police applicants tended to come from lower socioeconomic backgrounds and had high to superior intelligence. Most did not attend college because of lack of motivation or lack of family recognition of the value of education.

Nowicki (1966) studied the personality traits of 27 police officers by administering the MMPI to the police group and to a comparison group of industrial employees who were matched with police on sex, age, and education. When the profiles were reviewed, the Social Introversion (Si) scale was slightly higher for police (significant at .10 level). Elevations on the K-scale, and the special scales

Dominance, Ego Strength, and Social Status were more than one standard deviation above the mean of the general norm group, but these were not statistically significant. Nowicki described the police officers as a bit defensive in the test taking situation but adjusted, flexible, frank, open-minded, not prone to worry, optimistic, and willing to meet reality head-on. The industrial group had elevations on the K-scale and the Ego Strength special scale. Nowicki contended that the lack of additional significant differences between the two groups was probably due to the similarities in work content, such as routine duties and paperwork.

Hooke and Krauss (1971) compared the profiles of 37 police officers who were eligible for promotion to sergeant in the Kansas City, Missouri Police Department to the profiles of officers who competed but were not eligible for promotion. The profiles of successful and unsuccessful candidates were in the normal range but were elevated slightly on the Ma and Pd scale. Successful candidates had significantly higher scores on the K-scale and significantly lower scores on the Si scale.

This finding suggests that successful sergeant candidates were more sensitive in interpersonal situations, more self confident, more prone to depend on themselves, and more outgoing than unsuccessful officers. However, when sergeants on the force rated successful candidates as good

or poor sergeant material, the MMPI did not differentiate
between the groups.

Using the MMPI as part of the psychological assessment,
three police applicant groups comprised of 100 successful
applicants, 100 rejected applicants, and 100 in an attrition
group (those separated from the department within three
years) were sampled by Saxe and Reiser (1976). Means and
standard deviations were calculated for the 13 MMPI scales
for each group. Significant differences were found in the
mean MMPI profile of the successful applicants when compared
to those who failed the psychological evaluation, those who
passed the psychological evaluation and were successful but
were unsuccessful later, and those from a combination of the
two failure groups. However, these differences were within
the normal range and were too small in terms of traditional
standard scores to be meaningful in differentiating
successful from unsuccessful applicants. All of the police
applicant profiles compared showed moderate elevations on
the K, Hy, Pd, and Ma scales and a slightly depressed Si scale.

Perhaps, the most important finding of this study was
that the profile of these applicants differed from
Dahlstrom's MMPI normal profiles on all scales (except Hs) at the
.02 level of significance or better and from another agency's
profile on eight of 13 scales at .01 level of significance.
The results of this research and other studies suggest the
dangers of using test norms developed on one sample for

personnel selection from a different sample and supports the
need for population specific norms and local validation
for validity generalization research one the use of the MMPI
in police selection.

Depending upon the type of statistical analysis used,
data from a study by Gottlieb and Baker (1974) showed that
different combinations from four MMPI scales (L, F, K, and
Pa) helped to distinguish between low and high
efficiency groups. The sample consisted of 70 police
officers with more than three years of service.

Although several studies (Spielberger, 1979; Crosby,
1979; Gottesman, 1975; Murphy, 1972, Matarazzo et al., 1964,
Mills et al., 1964) have examined psychological screening
devices for urban law enforcement agencies, few
investigations have been conducted on small town law
enforcement personnel. Bartol (1982) studied 102
small town male police officers and a control group of 100
male college students and showed that scores on the K-scale and
the clinical scales of Pd, Mf, Ma, and Pa were significantly
higher for police officers. These results are consistent
with those reported in the aforementioned studies on urban
police officers. The results of this study suggest that
small town police agencies should consider raw MMPI scores
for suitability since uncorrected clinical scales
differentiated well between the above average, average and
below average rated police officer groups.

In an initial evaluation of Tennessee law enforcement candidates, a study by Saccuzzo, Higgins, and Lewandowski (1974) revealed both the metropolitan and non-metropolitan candidates approached the MMPI in a "faking good" manner and the profiles were flat, hovering around the mean. The data also indicated that if psychopathology were present in police officers, it would manifest itself as a 4-9 or 4-3 character type.

Similar results were obtained by Daley (1978) when he looked at the relationship of the MMPI to police performance. The profile analysis revealed significant differences at the .01 level between the police and the normative population on all scales except Hs, but all scores were within the normal range of one standard deviation from the mean. The Si scale yielded the lowest clinical score. The high three point code 9-4-3 depicted an energetic, enthusiastic and somewhat nonconforming group of officers when compared to the norm group. More specifically, individuals with 4-3 profile were described by Dahlstrom and Welsh (1968) as having difficulty with social conformity and impulse control. They were characterized by aggressive feelings which are expressed directly and intensely and chronic hostility. Individuals with high point codes of 4-9 were depicted as being untrustworthy, overactive, and irresponsible. When Daley attempted to predict performance on the basis of MMPI scores and certain demographic

variables, the results were significant but not useful because they explained only five percent of the variance between the groups. However, the results of Daley's study supported the 4-3-9 research conducted by Dahlstrom and Welsh (1968) and numerous others.

Several studies have been conducted on police officers using the Goldberg Index, which is an operational definition of psychosis calculated using a linear composite of the L, Pa, Sc, Hy and Pt MMPI scales. A study by Merian, Stefan, Schoenfeld, and Kobos (1980) examined the use of the Goldberg Index to differentiate between acceptable and unacceptable police candidates. The unacceptable officers scored higher than the intermediates who in turn scored higher than the acceptables on the Goldberg Index. Bayes theorem was applied to show the effect of varying base rates of unacceptable officers on the efficiency of the Index and the statistical errors of inference. Although hit-rate shrinkage was noted on cross-validation from 80 percent to 71 percent, statistical significance was maintained. Thirty-one items differentiated significantly between acceptable and unacceptable officers. The results of this study show that the Goldberg Index has sufficient validity to warrant further investigation.

Another study using the Goldberg Index was conducted by Costello, Schoenfeld, and Kobos (1982) using police department supervisor ratings of 424 subordinates as being

either a credit or discredit to the department. The Goldberg Index was used to differentiate officers into one of three groups: Acceptables, Intermediates, and Unacceptables. The results indicated that police officers are a heterogeneous population and in order to adequately screen applicants, several predictive indices would be needed. The researchers concluded that 25 percent of the target population which was comprised of officers with high potential for poor performance may be detected with a cutting score of 60 on the Goldberg Index.

After reviewing the literature regarding the use of psychological testing for police officer selection, several conclusions can be drawn. One of the most critical issues facing police and personnel departments is the selection of qualified police personnel. Since other screening tools fail to identify candidates who are psychologically and emotionally unfit to be police officers, psychological testing has become more accepted as an essential part of the selection process. Even though the MMPI is one of the most widely used instruments for assessing the personality of police applicants, skepticism and resistance to the use of psychological testing still exists.

To help dispel some of the doubt, further research is necessary to examine the appropriateness of using the original MMPI norms for police officer selection and to identify reliable and valid measures of police performance.

Although some studies have shown significant correlations of MMPI scales with performance ratings and other criteria of job success, more conclusive research is needed.

The current study attempted to identify the personality characteristics of a typical police officer compared to the MMPI norm group and to assess the validity of the MMPI in predicting performance of police recruits by testing the following hypotheses:

1) The mean MMPI profile for successful police officer applicants examined in this study would be significantly different from the normal MMPI profile.

2) The mean profile of officers who are still on the force would differ from those who are no longer with the force.

3) The MMPI scales would significantly correlate with job performance measures of: a) academy scores, b) supervisory ratings, c) commendations, and d) reprimands.

CHAPTER II

METHOD

Subjects

Two samples of male entry-level police officers between the ages of 19 and 43 $\underline{M}$ = 25.9) who took the Minnesota Multiphasic Personality Inventory as part of the screening process for a police department of a large city in the southwestern portion of the United States were chosen for this study.

The first sample consisted of 212 applicants who took the MMPI between 1984 and 1986 and were selected to be police officers. The second sample, a subsample of the first, was comprised of 109 officers who were hired, completed the academy and had worked as officers for at least one year.

Instrument

The Minnesota Multiphasic Personality Inventory (MMPI) is a personality questionnaire (consisting of 566 statements requiring a true or false response) which has been repeatedly shown to predict final clinical diagnosis in approximately 60 percent of new psychiatric admissions. Validity and reliability have been consistently demonstrated

to be the best available for this type of evaluation instrument (Dahlstrom & Welsh, 1960).

The original normative data were derived from a sample of about 700 "normal" individuals who visited the University of Minnesota hospitals and may be considered a representative cross section of the Minnesota population. The sampling was fairly adequate for ages 16 to 55 for both sexes. Additionally, data were available on 250 precollege and college students, a group which represented a reasonably good cross section of college entrance applicants.

The MMPI has cross-validated scales which were constructed to provide a means to measure personality characteristics that affect personal and social adjustment. The original MMPI consisted of nine clinical scales which were named for the abnormal conditions on which theory construction was based. Shortly after MMPI publication, the Social Introversion (Si) scale was added for a total of 10 clinical scales and three validity scales.

The 10 clinical scales are: Scale 1 - Hypochondriasis (Hs), Scale 2 - Depression (D), Scale 3 - Hysteria (Hy), Scale 4 - Psychopathic Deviate (Pd), Scale 5 - Masculinity/Femininity (Mf), Scale 6 - Paranoia (Pa), Scale 7 - Psychasthenia (Pt), Scale 8 - Schizophrenia (Sc), Scale 9 - Hypomania (Ma), Scale 0 - Social Introversion (Si).

The three validity scales are: "L" scale - measures the tendency to give socially desirable responses; "F" scale -

identifies those intentionally faking pathology; and "K" scale -a correction factor used to improve discrimination between normals and abnormals on scales Hs, Pd, Pt, Sc, and Ma (see Appendix A for a brief explanation of MMPI scales; Butcher, 1971).

Procedure

The steps in the process of selection of police officers on which this study is based are described as follows. If an applicant met minimum qualifications, the first step in processing consisted of a written reading and writing test, which if passed, was followed by a physical agility test, and a polygraph and background check. Then, the applicant was administered a battery of tests including the MMPI, California Psychological Inventory, Sixteen Personality Factors, Rotter Incomplete Sentences Blank and Otis Lennon Test of Mental Abilities. Next the staff psychologist conducted an oral psychological interview of all applicants and prepared a final recommendation. Any applicants whose responses were judged to be psychotic or pre-psychotic were not recommended for hire. Seriously neurotic patterns of response were also considered grounds to be not recommended. Next, all applicants went to an oral interview board which consisted of a panel of police officers, who made the decision to hire or to reject an applicant on the basis of all available information.

The MMPI scores for the 10 clinical and three validity scales were collected for the first sample of 212 successful

police officer applicants. A successful police officer applicant was defined as an individual who was hired as a police officer and entered the training academy. The MMPI T-scores of these officers were compared to the T-scores of the population norms used in the original standardization of the MMPI as presented by Dahlstrom and Welsh (1960). The profiles of 191 successful officer who were hired and are still on he police force were compared to the profiles of 20 officers who were hired but terminated, either voluntarily or involuntarily at some point after completion of the police academy.

Training academy files, including personnel files of individual officers, were searched to obtain data on the performance criteria of academy scores, supervisory ratings, commendations and reprimands. Final academy score averages were obtained on all recruits who completed the police academy. A mean supervisory rating was obtained for all officers who had been on the force for at least one year. The form used to evaluate performance is included as Appendix B. The average number of commendations and reprimands was calculated by dividing the total number obtained in each category by the total number of years of service. Performance criteria data and MMPI T-scores were used to evaluate the MMPI as a predictor of police officer performance.

CHAPTER III

RESULTS

To test the first hypothesis that the mean profile for successful police officer applicants is significantly different from the normal MMPI profile, the MMPI $\underline{T}$-score data for 212 successful police applicants were examined and means and standard deviations were obtained. A two-tailed $\underline{z}$-test was conducted to compare the mean scale scores of police applicant profiles to the standard $\underline{T}$-scores from the MMPI normative population. Table 1 summarizes the means, standard deviations and obtained $\underline{z}$-scores. In support of the first hypothesis, the results showed that all of the MMPI scale scores for successful police applicants except the clinical scales Hs and D were significantly different from the population norms.

Two of the mean police scale scores were significantly lower than the norm, one validity scale (F) and one clinical scale (Si). The other two validity scales, L and K, and seven clinical scales, Hy, Pd, Mf, Pa, Pt, Sc, and Ma were significantly higher than the norm.

All scales were within one standard deviation of the population mean, with the exception of the K-scale, which has the highest mean validity scale. The highest clinical scale was Scale 4 (Pd), followed by Scale 3 (Hy) and Scale 9 (Ma).

Scores on scales 3 and 9 fell within .5 of a $\underline{T}$-score point of each
other.   A profile like the one obtained in this study with a
high three point code on scales 4, 3, and 9, occurs
frequently in MMPI profiles of police officer applicants.

Table 1

<u>Means</u> <u>and</u> <u>Standard</u> <u>Deviations</u> <u>of</u> <u>the</u> <u>MMPI</u> <u>and</u> <u>Obtained</u> <u>Z-</u>
<u>Values</u> <u>for</u> <u>Successful</u> <u>Police</u> <u>Applicants</u>

Scale	Mean	Standard Deviation	$\underline{Z}$-Value
L	55.21	7.99	7.55**
F	48.57	3.73	-2.07*
K	63.78	7.68	19.97**
HS	50.46	5.28	.67
D	50.86	6.56	1.25
HY	56.21	5.96	9.00**
PD	58.81	7.66	12.77**
MF	54.38	8.05	6.35**
PA	52.44	6.64	3.54**
PT	52.64	5.64	3.83**
SC	53.92	6.75	5.68**
MA	55.88	8.02	8.52**
SI	45.79	6.45	-6.10**

*$\underline{p}$ < .05.

**$\underline{p}$ .01.

<u>Note</u>. $\underline{N}$ = 212.

To test the second hypothesis that the mean profile of officers still on the force differs from the profile of officers no longer with the force, the average profile of 191 officers who were still on the police force was compared to the average profile of 20 officers who had terminated. When a two-tailed t-test was run on the data, significant differences were found on the Hs scale ($t = 2.03$, $p < .05$) and the Hy scale ($t = 2.33$, $p < .05$). The means, standard deviations and t-values for the 13 scales are shown in Table 2.

The results indicate that the Hs scale, which measures an abnormal concern over bodily health, and the Hy scale which, among normals, suggests enthusiasm and sociability with an element of immaturity and egocentrism, significantly discriminated between officers who were still on the force and those who had been terminated. The terminated officers scored significantly lower on both scales than those still on the force, but both groups were well within the "normal range" of one standard deviation from the mean.

When Pearson product moment correlation coefficients were computed for each MMPI scale with the termination criterion only the Hs scale was significant ($r = -.1378$, $p < .05$).

A discriminant function analysis was performed on the test data for those who were still on the force and those who had terminated. The prediction equation included three MMPI variables (Hs, Pa, F) which resulted in correct classification of officers 63.51 percent of the time.

Table 2

Means and Standard Deviations of the MMPI and T-Values for
Officers Still on the Force and Terminated Officers

| | Still on the Force[a] | | Terminated[b] | | |
Scale	Mean T-Score	SD	Mean T-Score	SD	t-value
L	55.29	8.14	53.65	6.37	1.07
F	48.46	3.80	49.65	2.98	1.66
K	63.96	7.63	61.90	8.46	1.05
Hs	50.74	5.28	48.25	5.22	2.03*
D	50.96	6.56	49.35	6.88	1.00
Hy	56.46	6.02	53.75	5.08	2.23*
Pd	58.85	7.77	58.30	6.87	.34
Mf	54.35	8.00	54.90	8.91	.27
Pa	52.69	6.57	49.90	7.06	1.69
Pt	52.76	5.55	51.30	6.53	.97
Sc	54.04	6.64	52.60	7.82	.79
Ma	55.82	8.18	56.35	6.63	-.33
Si	45.66	6.60	47.20	4.84	-1.30

[a]N = 191.

[b]N = 20.

*p < .05.

Out of 211 observations, 134 officers were correctly classified. Of the misclassifications, eight were false positives (predicted to still be on the force but had terminated), and 69 were false negatives (predicted to terminate and were still on the force). The results are shown in Table 3.

Table 3

Classification Results for Termination Criterion

| | | Predicted Group Membership | |
Actual Group	No. of Cases	Still on Force	Terminated
Still on the Force	191	122	69
		63.9%	36.1%
Terminated	20	8	12
		40.0%	60.0%

Percent of "grouped" cases correctly classified: 63.51%

To test the third hypothesis that the MMPI scales significantly correlate with job performance measures of: a) academy scores, b) supervisory ratings, c) commendations, and d) reprimands, Pearson production moment correlations between the MMPI scale scores and the four performance criteria were computed and are presented in Table 4. Four scales (L, F, Ma, Si) were found to be negatively correlated with academy score, while the Pa scale was positively

correlated with that criterion. Means and standard deviations for the performance measures are shown in Table 5.

Table 4

Pearson Correlation Coefficients for Criterion Measures

Scale	Academy[a] Score	Supervisory[b] Ratings	Commendations[c]	Reprimands[d]
L	-.1617*	.0694	-.0271	-.1608
F	-.1873**	-.0877	-.0160	-.0290
K	.1354	.2065*	-.1044	-.0423
Hs	-.0924	.1232	-.0600	-.0403
D	-.0980	.0769	.0371	-.1140
Hy	.1191	.2192*	.0133	-.1290
Pd	.0001	.1231	-.2092*	.1029
Mf	.0088	-.0107	.0779	-.0334
Pa	.1942**	.0515	.0747	-.1055
Pt	.0258	.1151	-.2038*	-.0769
Sc	-.0336	.1411	-.0911	-.0193
Ma	-.1996**	.0373	.1305	.0179
Si	.1613*	-.0943	-.1502	-.0072

*$p < .05$.   **$p < .01$.

[a]$N = 206$.

[b]$N = 109$.

[c]$N = 99$.

[d]$N = 101$.

Table 5

Means and Standard Deviations for Criterion Variables

Variable	N	Mean	SD
Academy Score	206	86.19	4.23
Supervisory Ratings	109	3.16	0.25
Commendations	99	1.44	1.05
Reprimands	101	0.03	0.12

A least squares regression equation, which consisted of four scales (Ma, Si, L, Pa) was derived using stepwise multiple regression analysis to determine how the scales fit together to predict academy score. The prediction equation for academy score is as follows: Academy Score = 99.68 - .15 (MA) - .13 (Si) - .08 (L) + .10 (PA). For this sample, a multiple R of .3787 was obtained, which explained 14 percent of the variance encountered in academy scores. The results of the analysis are summarized in Table 6.

Significant Pearson product moment correlations were obtained for the Hy scale (r = .2192, p < .05) and K scale (r = .2065, p < .05) with supervisory ratings (see Table 4). When multiple regression analysis was conducted, only one scale (Hy) entered the prediction equation of supervisory ratings. A multiple R of .2192, which explained only five percent of the variance, was obtained. The results are presented in Table 7.

Table 6

Summary Table for Academy Score

	MA	SI	L	PA
Multiple R	.1996	.3012	.3476	.3786
R-squared	.0398	.0907	.1208	.1434
F(Egn)	8.464	10.129	9.253	8.410
Sig F	.004	.000	.000	.000
B	-.1482	-.1260	-.0842	.0989
Beta	-.2827	-.1925	-.1593	.1552
Cor	-.1996	-.1613	-.1617	.1942
Part Cor	-.2706	-.1804	-.1575	.1502
Partial	-.2806	-.1913	-.1677	.1602

Constant 99.6838

Table 7

Summary Table for Supervisory Ratings

Scale	Multiple R	R-Squared	F(Egn)	Sig F	B
Hy	.2192	.0480	5.450	.021	.0093

Constant 2.6440

As an additional analysis of these data, the sample for which supervisory ratings were available was collapsed into two groups--above average and below average ($M = 3.16$; $SD = 0.25$). When a discriminant function analysis was applied to

the data, the predictive function weighted five MMPI variables (K, Ma, Mf, L, Hy) which resulted in 64.22 percent accuracy of prediction of above or below average supervisory ratings. The results are summarized in Table 8.

Table 8

Classification Results for Supervisory Ratings

| | | Predicted Group Membership | |
Actual Group	No. of Cases	Above Average	Below Average
Above Average Supervisory Ratings	41	29 70.7%	12 29.3%
Below Average Supervisory Ratings	68	27 39.7%	41 60.3%
Percent of "grouped" cases correctly classified:			64.22%

The commendation criterion had a significant Pearson product moment correlation of $-.2092$ ($p < .05$) with the Pd scale and $-.2038$ ($p = .05$) for the Pt scale (see Table 4). The multiple regression analysis revealed that only the Pd scale entered the prediction equation for commendations with a multiple R of .2092 which accounted for four percent of the variance. The results are reported in Table 9.

Further analysis was conducted by collapsing the sample of 99 cases into two groups--above average and below average number of commendations ($M = 1.44$, $SD = 1.05$). A

Table 9

Summary Table for Commendations

Scale	Multiple R	R-Squared	F(Egn)	Sig F	B
Pd	.2092	.0438	4.163	.044	-.0274
Constant 3.0677					

discriminant analysis was performed and an equation was derived which contained variables K, Hy, Pd, Mf, and Ma. Use of the prediction equation to discriminate between officers who would fall into either an above average or below average group correctly classified individuals 72.73 percent of the time. Table 10 summarizes the results.

Table 10

Classification Results for Commendations

		Predicted Group Membership	
Actual Group	No. of Cases	Above Average	Below Average
Above Average Number of Commendations	59	42 71.2%	17 28.8%
Below Average Number of Commendations	40	10 25.0%	30 75.0%
Percent of "grouped" cases correctly classified: 72.73%			

No significant Pearson product moment correlations were obtained between the MMPI scales and the reprimand criterion (see Table 4). The sample of 101 was collapsed into an above average and a below average group ($\underline{M}$ = .03, $\underline{SD}$ = .12) based on the number of reprimands received by each officer. When discriminant function analysis was applied to the data the predictive function weighted six MMPI variables (L, D, Hy, Pd, Pt, Sc) resulting in 78.22 percent accuracy in prediction of whether an officer will be given an above or below average number of written reprimands. The results are shown in Table 11.

Table 11

Classification Results for Reprimands

		Predicted Group Membership	
Actual Group	No. of Cases	Above Average	Below Average
Above Average Number of Reprimands	93	74 96.6%	19 20.4%
Below Average Number of Reprimands	8	3 37.5%	5 62.5%
Percent of "grouped" cases correctly classified: 78.22%			

CHAPTER IV

DISCUSSION

The first hypothesis was supported by the results which
showed significant differences between successful police
applicants and the MMPI norm group on all scales except Hs
and D. Other studies present similar findings of the police
applicant profile as deviant from normal patterns
(Matarazzo et al, 1964; Mills et al., 1964; Rankin, 1957;
Rhead et al., 1968). Although significant differences exist
between the means obtained for the officers' average profile
and the MMPI normative group, the differences are not of the
magnitude to prevent use of the MMPI as a screening
instrument. The average police profile obtained in this
study falls within the clinically normal range. No scale
even approaches the T-score of 70, which is the level of
clinical psychiatric significance. Also, the standard
deviations of the police sample are consistently smaller
than those of the normative sample, which shows that the
police officers' scores were grouped more tightly about the
mean than those of the norm group.

The average police profile produced MMPI patterns with
high point code clinical scales of 4 (Pd), 3 (Hy), and 9
(Ma), and 0 (Si) as the low point, but all scales are within
one standard deviation of the norm with the exception of the

K validity scale (T-score = 63.78). Personality profiles that are deviant in consistent directions (high K, high Hy, high Pd, high Pa, and low Si) were reported in studies by Matarazzo et al. (1964), Rankin (1968), and Hooke and Krauss (1971). The consistency of this finding in the present study with the study's cited above provides weak support for the predisposition model that law enforcement attracts people with certain personality traits that differ from those of the normal population.

The 4-3-9 profile with the low Si scale suggests a mildly psychopathic adjustment, particularly with the 4-9 elevation. Individual officers with this profile type tend to be outgoing, energetic and talkative. They are typically ambitious with respect to fulfilling their own needs, but they do not have great concern for the needs or feelings of others. Thus, these officers tend to be superficial and often manipulative in relationships. Their predominant action orientation, rather than thought orientation, occasionally leads to impulsive behavior.

The 4-3-9 profile is typically seen in groups such as applicants in an employment setting, who are trying to make a good impression. In part, the low mean score on Scale 0 (Si) could be attributed to the applicant responding in a way that would indicate an enjoyment of contact with the public, since the police officer job has this element in it.

The elevation of the K-scale, which is designed to identify examinees who deny psychopathology and try to present themselves in a favorable light should be discussed. Individuals with a high K-scale score are assumed to be trying to give the appearance of adequacy and control, when they really have a guarded and defensive approach to taking the MMPI. Although the results suggest that the police applicants had defensive test taking attitudes, in the selection situation the group could have utilized a "fake desirable" response set in order to gain employment which makes interpretation of the MMPI in this setting highly suspect. For this reason, caution should be used when interpreting the Hs, Pd, Pt, Sc, and Ma scales which have a K-correction factor applied.

Regarding the second hypothesis that the profiles of terminated officers would differ from those who were still on the force, the results indicated that only the Hs and Hy scales significantly discriminated between the two groups. More significant profile differences might have been obtained if those who voluntarily terminated could have been studied separately from those who were fired or forced to resign. This was not possible due to the small number of subjects.

Caution must be used when interpreting the percentage of cases correctly classified by the discriminant function analysis. By definition the model fits the sample from which

it is derived better than it will fit another sample from the same population, which results in an inflated estimate of the true population. Also, when the number of subjects in one group is much smaller than the other group, such as for the terminated group as opposed to those still on the force, a highly correct classification rate can occur even when most of the minority group cases are incorrectly classified. In other words, if every recruit were predicted to remain on the force a 90 percent correct classification rate would still be obtained, but all of the terminated would be misclassified.

The most significant result of the stepwise discriminant function analysis is that the Hy scale was a predictor in the equations for the criteria of supervisory ratings, commendations, and reprimands. The inclusion of this scale is not surprising, since effective police officers would be expected to be sociable and enthusiastic and somewhat egocentric.

Several significant correlations were obtained between the MMPI scales and performance criteria, which lends support to the third hypothesis. However, the value of the results is limited because none of the scales were significantly correlated with more than one predictor. The results led to the development of a least squares equation that may be stable enough to predict future performance in terms of academy performance only. The stepwise multiple regression

procedure identified the contribution of the L, Pa, Ma, and Si scales to prediction of performance and controlled for the contribution of the remaining scales. The scales that are selected by using this method are those that contribute most significantly to the equation.

The combination of clinical scales in this equation suggests that a recruit who has a normal level of energy and enthusiasm and is outgoing and gregarious, but has a certain element of cynicism and suspiciousness, will perform better in the police academy. The L scale measures a tendency to give socially desirable responses on the MMPI. Perhaps this carries over to academy performance.

If the MMPI is to be used most effectively in the selection process of police officers, a connection must be formed between job performance and the MMPI scales using predictive validity studies. The majority of the studies which find that the MMPI scales predict officer performance are concurrent validity studies.

There are many reasons that the relationship of MMPI scales to job performance has not been clearly established. For example many officers who did not pass all requirements would not have been hired, which leads to a restriction in range when studying job performance. The range of data was further restricted by an absence of criterion information for officers who had not been on the force for at least one year.

Lack of finer discrimination of the MMPI with respect to the performance variables could be attributed in part to the defensive test taking attitude of the applicants. In addition, the performance measures used in this study, especially the overall supervisory ratings, could be considered subjective and suspect regarding their reliability and validity. Central tendency rating error seemed to occur in the supervisory ratings probably because an explanation is required for any rating other than standard (see Appendix B).

Poor correlations obtained between the MMPI scales and all criteria except academy score could be due to low variances for the supervisory ratings, commendations, and reprimands criterion measures. Another possible explanation for the poor correlations could be that the proper job performance criteria are not being measured to establish a strong, consistent relationship between the personality variables and job performance measures.

Many studies have shown that MMPI scores are not useful in trying to select a candidate who possesses certain characteristics for the police officer job, because the scores do not relate to job performance criteria (Nowicki, 1966; Hooke & Krauss, 1971; Gottesman, 1969). These findings are not surprising since the MMPI was designed as a clinical instrument to detect psychopathology, not as a selection instrument to predict job performance.

The police officer applicant profiles are fairly representative of the general population in terms of MMPI scores. Even though significant differences were found on all but two scales, the differences were not large enough to question use of the MMPI to screen out police applicants with severe pathology. Studies have shown that a high percentage of police applicants who were psychologically unfit, passed the standard screening process and would not have been detected as unfit candidates if psychological tests had not been administered. Use of the MMPI to screen out applicants with pathology is necessary due to the critical nature of the police officer job which requires a psychologically fit individual. The MMPI has validity for identifying severe pathology, even under conditions of defensiveness noted in the selection environment.

Although several significant correlations were obtained between the MMPI scales and the performance criteria in this research, further study and cross-validation of the relationship between the MMPI and performance criteria is needed before the MMPI is used to select candidates who possess certain characteristics that are believed to be present in an effective police officer. Baehr, Furcon, and Froemel (1968) stress the importance of cross-validation because this method greatly increases the likelihood of developing a useful selection program. Although an MMPI profile pattern seems to exist in several police studies,

the scales found to be significant predictors of various performance factors are not consistent.

In summary, the results of this study and data from earlier research raise concerns about the validity of interpretations of personality patterns of police applicants which are based on test norms developed on one sample and are used to select a vocational group from another population. Interpretations used to "screen in" applicants should not be made unless norms are developed which have predictive validity for job performance. For the present, the evidence shows more support of using the MMPI to screen out police applicants with severe pathology, as opposed to selecting officers who possess certain personality traits. Future research should focus on identifying personality characteristics which are positively associated with effective job performance of police officers.

APPENDIX A

BRIEF EXPLANATION OF MMPI SCALES

Scale	Characteristics
? Cannot Say	A validity score that, if high, may indicate evasiveness
L Lie Scale	A validity scale that measures the tendency to present oneself in an overly favorable or highly virtuous light
F Fake Bad Scale	A validity scale composed of highly infrequent items. A high score suggests carelessness, confusion, or claiming an inordinate amount of symptoms or "faking illness." Random responding also will result in an elevated F score.
K Subtle Defensiveness	A validity scale that measures defensiveness of a subtle nature
1(Hs) Hypochondriasis	High scorers are described as cynical, defeatist, preoccupied with self, complaining, hostile, and presenting numerous physical problems
2(D) Depression	High scorers are described as moody, shy, despondent, pessimistic, and distressed. This scale is one of the most frequently elevated in clinical patients.
3(Hy) Hysteria	High scorers tend to be repressed, dependent, naive, outgoing, and to have multiple physical complaints. Expression of psychological conflict through vague and unbased physical complaints.
4(Pd) Psychopathic Deviate	High scorers often are rebellious, impulsive, hedonistic, and antisocial. They often have difficulty in marital or family relationships and trouble with the law or authority in general.
5(Mf) Masculinity-Femininity	High scoring males are described as sensitive, aesthetic, passive, or feminine. High scoring females are described as aggressive, rebellious, and unrealistic.
6(Pa) Paranoia	Elevations on this scale are often associated with being suspicious, aloof,

shrewd, guarded, worrisome, and overly
sensitive. High scorers may project or
externalize blame.

7(Pt) Psychasthenia   High scorers are tense, anxious,
                        ruminative, preoccupied, obsessional,
                        phobic, rigid. They frequently are
                        self-condemning and feel inferior and
                        inadequate.

8(Sc) Schizophrenia   High scorers are often withdrawn, shy,
                        unusual, or strange and have peculiar
                        thoughts or ideas. They may have poor
                        reality contact and in severe cases
                        bizarre sensory experiences--delusions
                        and hallucinations.

9(Ma) Mania   High scorers are called sociable,
                        outgoing, impulsive, overly energetic,
                        optimistic, and in some cases amoral,
                        flightly, confused, disoriented.

0(Si) Social   High scorers tend to be modest, shy,
      Introversion-   withdrawn, self-effacing, inhibited.
                        Low scorers are outgoing, spontaneous,
                        social, confident.

Source: Butcher, 1971.

APPENDIX B

EFFICIENCY RATING FORM FOR POLICE DEPARTMENT

CIVIL SERVICE COMMISSION

Efficiency Rating Form For Police Department
UNIFORMED POLICE OFFICERS

NAME_____I.D._____PERIOD ENDING_____

CLASSIFICATION_____RATING_____

RATINGS:

ES — EXCEEDS STANDARD

S — STANDARD

BS — BELOW STANDARD

U — UNSATISFACTORY

ANY RATING OTHER THAN STANDARD MUST BE JUSTIFIED IN THE SPACE PROVIDED FOR DOCUMENTATION. PLACE THE APPROPRIATE RATING IN THE BOX PROVIDED FOR EACH CATEGORY FACTOR.

WORK HABITS:

DOCUMENTATION / TRAINING

ATTENDANCE AND PUNCTUALITY —

ARE SICK DAYS HABITUALLY TAKEN IN CONJUNCTION WITH DAYS OFF? DOES OFFICER FREQUENTLY REPORT LATE FOR DUTY? IS OFFICER'S ATTENDANCE OR PUNCTUALITY HAVING AN ADVERSE EFFECT ON THE OFFICER'S WORK UNIT?

INITIATIVE AND PRODUCTIVITY —

DOES OFFICER PERFORM WITHOUT BEING REPEATEDLY TOLD TO DO SO? IS OFFICER TOO PASSIVE OR TOO AGGRESSIVE? IS THE PRODUCTIVITY OF THE WORK UNIT SHARED PROPORTIONATELY BY THE OFFICER?

CARE AND USE OF EQUIPMENT —

DOES OFFICER TAKE PROPER CARE OF EQUIPMENT SUCH AS FIREARMS, ISSUED ITEMS, OFFICE MACHINES, VEHICLES, ETC.? DOES OFFICER USE CORRECT AND SAFE METHODS WHEN UTILIZING EQUIPMENT?

HANDLING OF PRISONERS —

IS UNNECESSARY FORCE FREQUENTLY USED? DOES OFFICER FREQUENTLY RECEIVE SUSTAINED ABUSE COMPLAINTS? ARE SAFETY PRECAUTIONS TAKEN?

JUDGMENT

DOES OFFICER MAKE DECISIONS COMMENSURATE WITH EXPERIENCE? IS THE OFFICER ABLE TO LOGICALLY AND ANALYTICALLY REACH A CONCLUSION? DOES OFFICER HAVE A TENDENCY TO UNDER OR OVER REACT?

6 APPEARANCE

IS OFFICER A GOOD REPRESENTATIVE OF THE DEPARTMENT? DOES OFFICER PRACTICE GOOD PERSONAL HYGIENE? DOES OFFICER TAKE PRIDE IN APPEARANCE?

7 COMPATIBILITY

DOES OFFICER HAVE DIFFICULTY WORKING WITH OTHERS? DOES PERSONALITY ANTAGONIZE PEOPLE? DOES OFFICER PRACTICE GOOD COMMUNITY RELATIONS? DOES OFFICER COOPERATE AND INTERACT WITH OTHER DIVISIONS/UNITS?

LEADERSHIP TRAITS:

DOCUMENTATION / TRAINING

8 PERFORMANCE WITH MINIMUM INSTRUCTIONS

DOES OFFICER OPERATE EFFECTIVELY WITH BRIEF INSTRUCTIONS AND EXPLANATIONS? DOES OFFICER HAVE DIFFICULTY UNDERSTANDING INSTRUCTIONS? DOES OFFICER HAVE TO BE LED BY THE HAND?

9 PERFORMANCE IN NEW SITUATIONS

CAN OFFICER PERFORM UNDER CHANGED CIRCUMSTANCES AND IN NEW ENVIRONMENTS? IS OFFICER ABLE TO ADAPT AND IMPROVISE WITHOUT SUPERVISORY INTERVENTION?

10 PERFORMANCE UNDER STRESS

DOES OFFICER THINK LOGICALLY AND CLEARLY UNDER STRESS OR IN EMERGENCY SITUATIONS? DOES OFFICER BECOME IRRATIONAL IN STRESSFUL SITUATIONS? IS IT OFTEN NECESSARY TO RESTRAIN OFFICER'S ACTIONS IN STRESSFUL SITUATIONS?

COMMUNICATION SKILLS: DOCUMENTATION / TRAINING

1 ACCURACY –

IS WORK CONSISTENTLY ACCEPTABLE OR IS IT FREQUENTLY REJECTED FOR INACCURACIES? ARE ESTIMATIONS USED WHEN THE EXACT DATA IS AVAILABLE?

2 NEATNESS –

WHAT DOES FINISHED WORK PRODUCT LOOK LIKE? IS IT INDICATIVE OF SLOPPINESS OR CARELESSNESS? IS IT OFTEN NECESSARY TO REJECT IT BECAUSE OF ILLEGIBILITY?

3 THOROUGHNESS –

IS SUBMITTED WORK COMPLETE? HAS IT BEEN WORKED THROUGH TO A LOGICAL CONCLUSION WITH ALL AVENUES COVERED? IS EVIDENCE PRESERVED AND THOROUGHLY DESCRIBED?

4 ORAL EXPRESSION –

IS OFFICER ABLE TO CONDUCT INTELLIGENT CONVERSATIONS UTILIZING GOOD GRAMMAR? IS OFFICER ABRASIVE WHEN MAKING CITIZEN CONTACTS?

5 WRITTEN EXPRESSION –

CAN OFFICER EFFECTIVELY PUT THOUGHTS DOWN ON PAPER IN A LOGICAL AND SEQUENTIAL MANNER? DOES OFFICER USE GOOD GRAMMAR, PUNCTUATION, AND SENTENCE STRUCTURE?

JOB KNOWLEDGE: DOCUMENTATION/TRAINING

3 INVESTIGATIVE ABILITY

ARE CASES PREMATURELY SUSPENDED WHEN FURTHER INVESTIGATION IS NECESSARY? ARE SUPPLEMENTS COMPLETED IN A TIMELY MANNER? DO INTERVIEWING/INTERROGATING TECHNIQUES PRODUCE THE DESIRED RESULTS?

7 POLICIES AND PROCEDURES

ARE POLICIES AND PROCEDURES ADHERED TO OR DOES OFFICER HAVE A TENDENCY TO DISREGARD THEM? IS OFFICER FAMILIAR WITH CONTENT OF GENERAL ORDERS HANDBOOK AND CODE OF CONDUCT? DOES OFFICER UPDATE THEM?

3 LAWS AND ORDINANCES

IS OFFICER KNOWLEDGEABLE OF THE LAWS AND ORDINANCES FOR WHICH THE DEPARTMENT IS RESPONSIBLE FOR ENFORCING? DOES OFFICER FREQUENTLY MAKE ARRESTS FOR INAPPROPRIATE PENAL CODE CHARGE?

Chief of Police	1st Supervisor
Deputy Chief of Police	2nd Supervisor
Director of Civil Service	Chairperson, Civil Service Commission

001-35100-005
(5/29/81)

References

Adams, T. F. (1972). Law enforcement: An introduction to the police role in the community. Englewood Cliffs, N.J.: Prentice Hall.

Azen, S. P., Snibbe, H. M., & Montgomery, H. R. (1973). A longitudinal predictive study of success and performance of law enforcement officers. Journal of Applied Psychology, 57 (2), 190-192.

Baehr, M. E., Furcon, J., & Froemel, E. (1968). Psychological assessment of patrolman qualifications in relation to field performance. Chicago: Industrial Relations Center, University of Chicago Press.

Balch, R. W. (1972). The police personality: Fact or fiction? The Journal of Criminal Law, Criminology and Police Science, 63, 106-119.

Bartol, C. R. (1982). Psychological characteristics of small town police officers. Journal of Police Science and Administration, 10 (1), 58-63.

Bennett, R. R. & Greenstein, T. (1975). The police personality: A test of the predisposition model. Journal of Police Science and Administration, 3 (4), 439-445.

Blum, R. H. (1964). Police selection. Springfield, IL: Charles C. Thomas.

Butcher, J. N. (1971). Objective personality assessment. Morristown, N.J.: General Learning Press.

Butler, A. J., & Cochrane, R. (1977). An examination of some elements of the personality of police officers and their implications. Journal of Police Science and Administration, 5 (4), 441-450.

Chevigny, P. (1969). Police power: Police abuse in New York City. New York: Random House.

Colarelli, N. J., & Siegel, S. M. (1964). A method of police personnel selection. Journal of Criminal Law, Criminology and Police Science, 55, 287-289.

Costello, R. M. (1976). The MMPI as an instrument in police applicant screening: An examination of method. Presented at the Second Annual Meeting of the Society for Police and Criminal Psychology, Long Beach, MS.

Costello, R. M., & Schoenfeld, L. S. (1981). Time-related effects of MMPI profiles of police academy recruits. Journal of Clinical Psychology, 37, 518-522.

Costello, R. M., Schoenfeld, L. S., & Kobos, J. (1982). Police applicant screening: An analogue study. Journal of Clinical Psychology, 38, 216-221.

Crosby, A. (1979). The psychological examination in police selection. Journal of Police Science and Administration, 7 (2), 215-229.

Dahlstrom, W. G., & Welsh, G. S. (1960). An MMPI handbook: A guide to use in clinical practice and research. Minneapolis, MN: University of Minnesota Press.

Dahlstrom, W. G., & Welsh, G. S. (1968). An MMPI handbook. Minneapolis, MN: University of Minnesota Press.

Daley, R. E. (1978). The relationship of personality variables to suitability for police work. Unpublished doctoral dissertation. International Graduate School of Behavioral Science of Florida Institute of Technology, Melbourne, FL.

Dudycha, G. (1955). Psychology for law enforcement officers. Springfield, IL: Charles C. Thomas.

Dunnette, M. (1966). Personnel selection and placement. Belmont, CA: Wadsworth Publications.

Dunnette, M. D. & Motowidlo, P. J. (1976). Police Selection and Career Assessment. Washington, D.C.: National Institute of Law Enforcement and Criminal Justice.

Fenster, C. A., & Locke, B. (1973). Patterns of masculinity-femininity among college and non-college oriented police officers: An empirical approach. Journal of Clinical Psychology, 29 (1), 27-28.

Frost, T. M. (1955). Selection methods for police recruits. Journal of Criminal Law, Criminology, and Police Science, 45, 135-145.

Gottesman, J. (1969). Personality patterns of urban police applicants as measured by the MMPI. Hoboken, N.J.: Stevens Institute of Technology.

Gottesman, J. (1975). The utility of the MMPI in assessing

the personality patterns of urban police applicants.
Hoboken, N.J.: Stevens Institute of Technology.

Gottlieb, M. C., & Baker, C. F. (1974). Predicting police
officer effectiveness. Journal of Forensic Psychology,
6, 35-46.

Hardgrave, G. E, & Kohls, J. W. (1984). Psychological
screening of peace officers: A clinical-industrial
psychological process. The Police Chief, 7, 25-28.

Holmes, R. (1942). Selection of patrolmen. Journal of
Criminal Law, Criminology, and Police Science, 32, 575-
592.

Hooke, J. R., & Krauss, J. (1971). Personality
characteristics of successful police sergeant candidates.
Journal of Criminal Law, Criminology, and Police Science,
62, 104-106.

Leonard, V. A. (1970). Police personnel administration.
Springfield, IL: Charles C. Thomas.

Levy, R. J. (1967). Predicting police failures. Journal
of Criminal Law, Criminology and Police Science, 58, 265-
276.

Los Angeles County Sheriff's Department. (1973).
Physiological Fitness Standards for Police. Los Angeles,
CA: County of Los Angeles.

Marsh, S. H. (1962). Validating the selection of deputy
sheriffs. Public Personnel Review, 23, 41-44.

Matarazzo, J. D., Allen, B. V., Saslow, G., & Wiens, A. N. (1964). Characteristics of successful policeman and fireman applicants. Journal of Applied Psychology, 48, 123-133.

Merian, E. M., Stefan, D., Schoenfeld, L. S., & Kobos, J. C. (1980). Screening of police applicants: A 5-item MMPI research index. Psychological Reports, 47, 155-158.

Mills, R. B., McDevitt, R. J., & Tonkin, S. (1964). Selection of metropolitan police officers. Paper presented at the symposium, Psychological Factors in Selection of Police Personnel, American Psychological Association, Los Angeles, CA.

Murphy, J. (1972). Current practices in the uses of psychological testing by police agencies. Journal of Criminal Law, Criminology, and Police Science, 63, 570-576.

Murrell, M. E., & Lester, D. (1979). Masculinity in police officers. Psychological Reports, 44 (1), 14.

Narrol, H., & Levitt, E. (1963). Formal assessment procedures in police selection. Psychological Reports, 12, 691-694.

National Advisory Commission on Criminal Justice Standards and Goals. (1973). Task force on police. Washington, D.C.: U. S. Government Printing Office.

Niederhoffer, A. (1967). Behind the shield. Garden City, NY: Doubleday.

Nordlicht, S. (1979). Effects of stress on the police officer and family. N.Y. Journal of Medicine, 79, 400-401.

Nowicki, S. (1966). A study of the personality
  characteristics of successful policemen. Police, 10, 39-42.

O'Connor, G. W. (1962). An analysis of methods used in
  selection of municipal patrolmen in cities over 25,000
  population. Washington, D.C.: International Association
  of Chiefs of Police.

Oglesby, T. (1957). Use of emotional screening in the
  selection of police applicants. Public Personnel Review,
  18, 228-231.

Poland, J. M. (1978). Police selection methods and the
  prediction of police performance. Journal of Police
  Science and Administration, 6 (4), 374-393.

Rankin, J. H. (1957). Preventive psychiatry in the Los
  Angeles Police Department. Police, 1, 24-29.

Rankin, J. H. (1959). Psychiatric screening of police
  recruits. Public Personnel Review, 20, 191-196.

Rhead, C., Abrams, A., Trosman, H., & Margolis, P. (1968).
  The psychological assessment of police candidates.
  American Journal of Psychiatry, 124, 133-138.

Rokeach, M., Miller, M. G., & Snyder, J. A. (1971). The
  value gap between police and policed. Journal of Social
  Issues, 27, 155-171.

Saccuzzo, O.P., Higgins, G., & Lewandowski, D. (1974).
  Program for psychological assessment of law enforcement
  officers: Initial evaluation. Psychological Reports,
  35, 651-654.

Saxe, S. J., & Reiser, M. (1976). A comparison of three
    police applicant groups using the MMPI. Journal of
    Police Science and Administration, 4 (4), 419-426.

Shev, E. E., & Hewes, J. J. (1977). Good cops/Bad cops.
    San Francisco, CA: San Francisco Book Company.

Smith, A., Locke, B., & Walker, W. (1967).
    Authoritarianism in college and non-college police.
    Journal of Criminal Law, Criminology, and Police Science,
    58, 128-132.

Spielberger, C. D. (Ed.). (1979). Police selection and
    evaluation: Issues and techniques. Washington, D.C.:
    Hemisphere.

Stratton, J. (1980). Psychological services for police.
    Journal of Police Science and Administration, 8 (1), 31-39.

Swank, C. J., & Conser, J. A. (1983). The police personnel
    system. New York: John Wiley and Sons, Inc.

Symonds, M. (1970). Emotional hazards of police work.
    American Journal of Psychoanalysis, 30, 155-160.

Terman, L. M. (1917). A trial of mental and pedagogical
    tests in a civil service examination for police and
    firemen. Journal of Applied Psychology, 1, 17-29.

Tielsch, G. P., & Whisenand, P. M. (1977). The assessment
    center approach in the selection of police personnel.
    Worcester, MA: Davis Publications, Inc.

Tift, L. L. (1974). The "cop personality" reconsidered.
    Journal of Police Science and Administration, 2 (3), 266-278.

Vollmer, A. (1921). A practical method for selecting policemen. Journal of Criminal Law, Criminology and Police Science, 11, 571-581.