The Effect of Managerial Experience on Assessment Center Evaluations: An Application in Law Enforcement

1985

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THE EFFECT OF MANAGERIAL EXPERIENCE ON ASSESSMENT CENTER EVALUATIONS: AN APPLICATION IN LAW ENFORCEMENT

BY

LONNIE EARL GRIESEMER
B.A., University of Central Florida, 1982

THESIS
Submitted in partial fulfillment of the requirements for the degree of Master of Science in Industrial/Organizational Psychology in the Graduate Studies Program of the College of Arts and Sciences University of Central Florida Orlando, Florida

Summer Term 1985
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# TABLE OF CONTENTS

**LIST OF TABLES** ........................................ iv  
**INTRODUCTION** .......................................... 1  
- Validity Support of the Assessment Center Method .......................... 5  
- Legal Support for Assessment Centers ........................................ 7  
- Assessment Centers in Law Enforcement Agencies ......................... 10  
- Current Investigation of Assessment Center Application .................. 13  
- Research Objectives ........................................... 18  
**METHOD** ................................................... 21  
- Subjects ...................................................... 21  
- Data Collection ............................................... 21  
**RESULTS** ................................................... 25  
**DISCUSSION** ................................................ 34  
**APPENDIX** .................................................. 34  
- A. Classification Matrix .......................................... 41  
**REFERENCES** ............................................... 44
**LIST OF TABLES**

1. Means and Standard Deviations on All Variables for Deputies and Corporals ........................................ 26
2. Within Variable Correlation Matrix ........................................ 27
3. Summary of F Statistics Resulting from Analysis of Variance Calculations for the Effect of Particular Variables on Group Membership (Deputy/Corporal) ........................................ 28
4. Discriminant Function Canonical Coefficients ........... 31
INTRODUCTION

Management positions are common to the vast majority of organizations within the industrialized world and have been for several years. Several organizations are structured towards the use of various levels of management ranging from first-line managers at the lowest level, to high-level management or executive positions. There is a growing concern for the use of various selection, promotion, and developmental techniques which can best provide organizations with the most efficient combination of management personnel. Judgements concerning the evaluation and measurement of the managerial potential of employees or applicants are usually based on one of five sources of information. These sources of information include: a) results from traditional paper and pencil tests; b) clinical evaluations; c) evaluations of job success and potential by current supervisors; d) background interviews; and e) observation in job simulations in an assessment center (Thornton & Byham, 1982). Although a combination of the above sources is common, the use of evaluations obtained from assessment centers is gaining a great deal of support in many organizations.
An assessment center is a comprehensive, standardized procedure in which multiple assessment techniques such as situational exercises and job simulations are used to evaluate individual employees for various purposes (Thornton & Byham, 1982). Assessment center evaluations are typically used for promotion, hiring, training, or career-planning decisions. Characteristics of assessment centers include the use of multiple assessment techniques, behavioral observations by multiple assessors, situational tests, and structures procedures for making observations, documenting behaviors, and providing personnel decisions (Moses & Byham, 1977).

The first attempts to use multiple assessment programs for selection and placement in the United States were developed by the Office of Strategic Services (OSS) during World War II and resulted in the now classic book *Assessment of Meo* (1948), which has provided the basis for several of today's assessment center applications. It was also instrumental in the development of the first industrial assessment center program, conducted by the American Telephone and Telegraph Company (AT&T) in 1956. Today several private, city, state, and federal agencies in the United States and Canada have successfully applied the method. The procedure has been applied by the State of Illinois, the Providence of Manitoba, Canadian Customs, and
the U.S. Internal Revenue Service to aid in the selection of first-line supervisors. Also, Canada's Public Service Commission and the U.S. Civil Service Commission utilize the device as a selection tool for management development program, and the Quebec Police along with the New York City Police Department have used the procedure for the selection of high-level managers (Byham & Wettengel, 1974). Byham and Wettengel (1974) point out that the popularity of the assessment center method results from its great flexibility in adaption to different jobs and job levels, its inherent potential for higher degrees of content validity, and its ability to provide fair evaluations to all applicants.

It appears that the advantage of assessment centers over the traditional paper and pencil tests and interviews is centered around its reliance upon the use of simulations of real-life situations in which applicants and employees can be placed and their behaviors subsequently evaluated by a staff of trained assessors. Thus, a composite picture is formed of each candidate by evaluating the person's behavior across several situational exercises. Gavin and Hamilton (1975) indicate that the accuracy of the composite picture may be attributed to the following:

1. The exercises are simulations of "on-the-job" behaviors.
2. A large amount of information is generated
about each participant in a relatively short period of time.

3. It is possible to observe behaviors that occur infrequently in normal activity, such as bravery.

4. A variety of methods is used.

5. The exercises are constant for all participants.

6. There is a pooling of judgements among the assessors for each participant.

7. The observers typically have no personal involvement with the participants.

8. The observers are trained in evaluation procedures.

9. The observers are able to devote full attention to the task of assessing.

Byham and Wettengel (1974) suggest that assessment center results are related to the future performance of persons at higher management levels, not to current performance on-the-job. Furthermore, the observation of participants' handling the problems and challenges of the higher-level jobs, which are simulated in the exercises, provide assessors with the opportunity to obtain an indication of how the individual would perform in higher-level positions (Byham, 1970).
Validity Support of the Assessment Center Method

One explanation for the increase in popularity of the assessment center procedure would be its research support found in studies concerning the validity of the technique. The procedure experienced a slow start in American industry (Cohen, Moses, & Byham, 1974). However, the few organizations which first began applying assessment centers provided a building block for the future use of the technique by conducting systematic research programs which established a solid foundation on which subsequent centers have been developed. The AT&T assessment center program, while being the first use of the assessment center approach in American industry, has been one of the most elaborate and extensive applications of the technique and it has provided a great deal of research support for the use of assessment centers. Several research articles have resulted as part of AT&T's Management Progress Study (MPS) (e.g., Bray & Campbell, 1968; Bray et al., 1974; Bray & Grant, 1966; Howard, 1979). The MPS provided a longitudinal study which allowed for the comparison of assessment center predictions and attainment of middle management positions by participants in the organization. To summarize the findings of several studies conducted by AT&T, the literature offers supporting evidence that the assessment process yields valid predictions of the future success of young managers in the organization. Although
some limitations have been placed on the MPS findings, it is a landmark piece of research that contributed to the understanding of adult development and to the selection of managers (Thornton & Byham, 1982). Thornton and Byham (1982) suggest that the assessment center movement is directly related to AT&T's early and continued research efforts and they offer that there is little doubt that assessment center evaluations or ratings accurately predict which individuals are likely to make advancements in the management of the Bell system.

Although the assessment center procedure cannot be viewed as a perfect predictor, it appears to produce higher validities than those associated with traditional tests or interviews (Byham & Wettengel, 1974). Cohen, Moses, and Byham (1973) reviewed the results of 22 validity studies concerning assessment center applications. They reported a median criterion-related correlation of .37. Also, in industrial applications, the authors found a median correlation with job performance of .33 and a promotion above first-level management at .40. Huck (1973) reviewed validity studies dealing with the approach and concluded that research results had demonstrated both the "external" and "internal" validities of multiple assessment techniques. Huck's review, which was revised and republished in 1977 (Huck, 1977), integrated the results of 50 studies which all showed positive validity findings.
The literature continues to support the use of the technique on the grounds of validity. Researchers are also attempting to avoid the problems associated with validity studies by safe-guarding against problems such as criterion data contamination and by using more behaviorally based criterion measures (Klimoski & Strickland, 1977; Sackett, 1972). However, Thornton & Byham (1974) suggest that "there has been no more thorough body of predictive validity research generated to support the accuracy of and industrial psychology practice than the evidence on assessment centers" (p. 306). In addition, assessment center results have a number of advantages over traditional test results because the procedure can be more job-related and because assessment centers require actual behavior rather than relying on self-reports of what a participant says he or she would do, or has done (Byham & Wettengel, 1974).

Legal Support for Assessment Centers

Since organizations typically use the assessment center technique to make personnel decisions, the procedure falls into the realm of testing and must therefore adhere to governmental regulations. The use of any test by an organization which forms the basis of decisions concerning individuals and their status must adhere to the Uniform Guidelines on Employee Selection Procedures which were
designed by a joint commission of the Equal Employment Opportunity Commission (EEOC), the Civil Service Commission, the Department of Labor, and the Department of Justice (EEOC et al., 1978). In the face of legal acquisitions concerning the use of assessment centers, organizations are required to show that they followed the Uniform Guidelines in the validation, development, and use of a procedure if it is used for decision-making purposes (Task Force, 1980). Compliance agencies, such as the EEOC, have become very interested in testing by private and government organizations. The agencies have evaluated several testing programs and courtroom support has been found in cases concerning the use of assessment centers. In fact, no assessment center program has ever been found illegal and there are only a few court cases involving their use (Byham, 1970). Also, the EEOC even employs the use of assessment centers in its organization which indicates the techniques' gaining acceptance.

Byham and Thornton (1982) reviewed some of the more important court decisions concerning the use of assessment centers. In the case of Berry v. the City of Omaha, the courts ruled that the assessment center technique had met adequate standards for development and administration. It was charged that the center was unfair due to rater biases and lack of standards used during the conduction of the program. The case was the first time that assessment
centers were challenged in court. The judge relied on testimony from expert witnesses and on the Standards of Ethical Considerations for Assessment Center Operations (Task Force, 1980). The case shows how documentation and development are important during the assessment center process.

In other cases, such as those involving the Richmond, Virginia, police and fire departments, the courts also ruled in favor of the assessment center technique. The court ruled that paper and pencil tests used by the city of Richmond were discriminatory. The judge, however, ruled that the city could use a combination of written tests and assessment centers. Although the written tests were found to be discriminatory, the combination of written tests and assessment centers was found to have no racial bias. Once again the use of assessment centers had stood up in the face of the courts.

In addition to cases which questioned the use of assessment centers themselves, several cases of alleged discrimination from paper and pencil tests have resulted in the courts suggesting the use of assessment centers as a more appropriate means for evaluating individuals for promotion and selection. Thus, it appears that the use of assessment centers by organizations is gaining increased support from governmental agencies as well as the courts. The technique is fairly new when compared with other
selection, promotion, and developmental techniques that have been used by organizations in the past. However, the research evidence and courtroom success of the technique is an indication of the increased acceptance of the procedure. Several organizations are hesitant to implement a testing program which mandates such extensive manpower and funding, however, in the wake of the court rulings concerning assessment centers, it is viewed that the technique could potentially save an organization a great deal in the form of legal suits. If an organization spends the effort to develop a strong assessment system, that system may save the organization millions of dollars in legal payoffs.

Assessment Centers in Law Enforcement Agencies

The assessment center approach as been applied to several types of private and government organizations including various law enforcement agencies. In addition to the support given to the technique discussed in the previous sections, there are particular reasons why the approach is becoming popular among law enforcement organizations. Today's police officers must perform complex tasks ranging from routine duties such as processing traffic to the nonroutine duties of preserving civil order and assisting citizens. In order to maintain effective performance, modern day police officers need many skills which cannot be assessed by conventional written
examinations (Shachter, 1979). Schachter expressed the need to develop methods to measure these skills since traditional written examinations do not measure any of the competencies needed by law enforcement officers. Chenoweth (1961) was one of the pioneers in recognizing the potential of situational testing as a part of the evaluation of police applicants. Also, Mills, McDevitt and Tonkin (1966) suggested the use of situation testing to evaluate non-intellectual traits associated with successful performance in law enforcement positions.

The use of a multiple-assessment methodology for police work gained further support throughout the sixties. Mills (1969) indicated that a combination of assessment approaches would integrate several types of information and thus provide the most equitable and thorough view of applicants. Furthermore, the more varied the samplings of an applicant's behaviors, the better our understanding of that applicant would be (Gavin & Hamilton, 1975). Thus, while it is apparent that the assessment center approach would be beneficial to a wide variety of organizations, law enforcement agencies are particularly interested in the technique in an effort to obtain more accurate evaluations of employees and applicants by developing systems that measure many of the skills and competencies which effective police work requires.
Assessment centers offer a more comprehensive view of candidates than traditional systems such as evaluations of past performances of interviewing techniques. Although past performance may predict future success in some situations, some problems are associated with the technique. A person may be an excellent or high-performing police officer, but possess only a few of the skills necessary for being an effective supervisor of police officers. If this person was to be promoted on the sole basis of past performance, the organization would lose a good officer and gain a poor sergeant (Joiner, 1984). Joiner pointed out that the candidates' immediate supervisors often evaluate different people with different rating standards and that candidates are usually working in different divisions performing different duties which adds to the difficulty in making comparisons across candidates. Assessment centers are thus used to evaluate candidates for selection, promotion, and training programs by observing performances on the same tasks which are simulations of the target job. In addition, standardized evaluation procedures are used by trained assessors, who rely on behavioral observations during the situational exercises, for form overall ratings of candidate's performance.
Typically, assessment center evaluations are conducted for the purpose of promotion by having individuals at one level of an organization participate in situational exercises which simulate a higher-level job. Over the past three years a law enforcement agency in Central Florida has assessed 83 candidates for the target position of sergeant. Situational exercises were developed following extensive job analyses of the target position. The exercises simulate the position by confronting candidates with typical problems and situations which are representative of the sergeant position. The job of sergeant falls into the realm of a supervisory or managerial position since the job analysis data indicated that approximately two-thirds of the duties associated with the position can be classified as management duties. The remaining one-third of the duties associated with the job of sergeant are typical of modern police work. Therefore, deputies within the organization have been evaluated using the assessment center approach. The exercises used in the assessment center include: a crime scene exercise, an employee counseling exercise, and an administrative in-basket exercise. Furthermore, candidates are assessed on eight skill dimensions which include: leadership, judgement, decisiveness, organizing and planning, written communication, oral communication, perception, and interpersonal skills.
Over the past three years the exercises have been altered and updated, however, the content of the exercises and the situations used have been very similar. Furthermore, trained assessors reach consensus judgements for each skill dimension observed on each candidate by the use of a team-meeting process. Thus, overall dimension scores are derived and are subsequently applied to weighted, mathematical factors which were determined by the use of job analysis data. The weighted dimension scores are then summed to derive an overall assessment center rating for each candidate. The agency uses these overall ratings to provide higher management with promotional lists of suitable candidates for the sergeant position.

Deputies are not typically required to perform management functions in their current positions and thus the assessment center was established as a method to evaluate the candidates' management potential. However, a unique situation has arisen in the agency which warrants investigation. Although completion of at least three years of service at the deputy level is a requirement for assessment center participation, some of the candidates have received some management experience by occupying the rank of corporal within the organization. The position of corporal, while not officially recognized by the organization as a permanent position, is a temporary position which requires some managerial skills. Job
analysis data indicates that corporals perform duties related to management positions approximately one-third of the time while on-the-job. Of the 83 candidates assessed by the program, 28 have had some experience at a management position by having served some time as a corporal. The question therefore arises that if the job of corporal offers some management experience to those individuals who have held the position, would this experience result in a difference in performance in the assessment center developed for the position of sergeant? Thus, do corporals benefit from a "practice" effect by having been placed in situations which require them to perform management duties and therefore rely on and develop their management skills?

Experience in management situations could possibly result in corporals obtaining a form of training, which has been found to produce higher scores on assessment center exercises (Moses & Ritchie, 1976). Moses and Ritchie provided supervisory training to an experimental group of subjects and compared their subsequent scores in an assessment center to the scores of control subjects who did not benefit from the training experiences. The training involved familiarizing the experimental subjects with situations that were typical of managerial positions. Subjects were matched with control subjects in regard to previous experience and other training. The results of
the study indicated that the managerial training produced higher scores on the assessment center, which had been developed to measure managerial skills, for the experimental group. In addition, Burnaska (1976) provided behavior modeling training for a group of subjects and compared their scores during simulated managerial situations to those of a control group of subjects. Experimental subjects performed significantly better during the simulation exercises as a result of their training. Also, it has been suggested that an individual's early developmental experiences play a vital part in the long-term success of young managers (Bray, Campbell & Grant, 1974).

Should the experience result in a higher overall assessment center performance it would warrant an investigation into the candidates' performances on particular skill dimensions during the assessment center. This would aid in the identification of the skill areas which are providing the increase in overall performance. Furthermore, would performance in the various simulation exercises incorporated in the assessment process differ between the deputies who had management experience and those who did not benefit from serving as a corporal? It should be noted that all deputies have been involved in crime scenes and could therefore rely on past experiences or observations of sergeants in crime scene situations
During their employment within the agency. However, only those deputies who have served as a corporal would have experienced administrative and counseling situations from the standpoint of a person in a management position. However, all candidates could rely on their previous experiences in crime scenes and the observation of supervisors in those situations. Thus, the candidates could model the behaviors of incumbent supervisors by relying on the observation of behavior in past situations. Moses (1978) indicated that behavior modeling, a form of observational learning, is an outgrowth of the social learning paradigm developed by Miller and Dollard (1941) and Bandura (1969). Moses (1978) points out that the research indicates that vicarious learning takes place through the observation and imitation of behavior. Furthermore, intricate response patterns can be learned by observing and imitating the behavior of appropriate models. Thus, variance in performance between the two groups of candidates may not be as great in simulation exercises depicting crime scene situations. Behavioral modeling is a form of learning and many skills learned as adults are conveyed by modeling (Moses & Ritchie, 1976).

If one takes the viewpoint that corporals are currently in management positions it would justify the comparison of their assessment center performances to deputies as being a quasi-concurrent, validity
investigation. Concurrent research designs, which compare persons currently holding the target job and aspirants to the position, have come under some criticism. The criticisms are based on the idea that the motivation of aspirants to the target position differs from the motivation of incumbents. Thus, incumbents are probably an inappropriate group for validating selection and promotion procedures (Thornton & Byham, 1982). However, the current investigation offers a unique situation since deputies and corporals are both motivated to obtain the position of sergeant. The motivational levels of both groups would therefore be similar and the problem would be avoided.

Research Objectives

First, the current investigation examined the differences between corporals and deputies who have participated in the assessment center for the position of sergeant. By analyzing such background variables as age, education levels, tenure, previous performance ratings, training programs attended, and experience at current position, stepwise discriminant function analyses were conducted to determine which variables differentiate between the two groups of subjects (i.e., corporal and deputies). Thus, the importance of each variable was evaluated to determine the best combination available or the single highest predictor of group inclusion. Also,
this provided insight into the differences between the two groups of subjects.

The second area of investigation provided an analysis of the differences between the two groups on the various components of the assessment center program. Therefore, analyses of the candidate's evaluations on the particular skill dimensions assessed and during the various situational exercises indicated any variance between their performances.

The following hypotheses were investigated during the evaluation of the available data:

First, overall assessment center performance would be a significant predictor of group inclusion, thus indicating whether or not an individual had served as a corporal and gained experience in management situations.

Secondly, overall dimension ratings in the skill areas which rely heavily on managerial experience (e.g., leadership, organizing and planning, judgement, and decisiveness) would be significant predictors of group inclusion by differentiating between the subjects with regard to the variable of rank.

In addition, overall exercise performance for the administrative employee counseling exercise would be a significant predictor of group membership by differentiating between the subjects with regard to the variable of rank.
Finally, overall assessment center performance would be significantly correlated with months of service at the corporal position, in the sub-group of corporals, as a result of increased practice or training in managerial skills.
METHOD

Subjects
A total of 83 subjects, who had all participated in the assessment center developed for the target position of sergeant, were included in the data analysis. Of the 83, 28 of the subjects had occupied the rank of corporal at some time during their employment with the law enforcement agency. The remaining 55 subjects held the position of deputy sheriff. All subjects were aspirants to the target position of sergeant.

Data Collection
Assessment center data, which had been accumulated over the past three years, were collected for each subject. Evaluations consisted of: 1) overall assessment center performance ratings for each subject; 2) overall skill dimension ratings for each subject, which were derived by the team consensus judgements of trained assessors; and 3) overall exercise ratings for each subject, which were calculated by summing their weighted skill dimension evaluations pertaining to the individual exercises. The
weights were derived from job analysis data and had been applied to the candidate's overall skill dimension ratings during the actual assessment process. The exercises included in the assessment center were designed to simulate situations which would require the candidates to exhibit behaviors related to the target position. A crime scene exercise was used which required candidates to manage a situation in which a crime had taken place. During the exercise, which lasted for approximately 25 minutes, individual candidates were confronted with handling problems concerning the victims, witnesses of the crime, the management of subordinates, and members of the news media. Observable behaviors were recorded by a trained assessor. The counseling exercise required the candidates to review the relative material concerning a subordinate who had exhibited inadequate performances and behaviors, according to documented employment records. The candidates were then required to meet face-to-face with the employee in order to discuss the situation and resolve the problem. Another exercise, an administrative in-basket, involved the handling of administrative items which were a simulation of typical functions required of sergeants. Candidates were required to take action on several memos concerning situations associated with the target position.

Also, background variables for each subject were collected by reviewing each individual's employment history
file. Thus, measures of the variables were obtained and included in the data analysis. The derivation of background variables was conducted as follows:

1. Rank (i.e., deputy (1)/corporal (2)): This dichotomous variable was obtained by reviewing documentation of promotions found in the employment history files.

2. Age: Age of subject, in years, at time of assessment.

3. Tenure: Recorded in months of service and measured from original date of employment with the agency through date of assessment.

4. Education level: Recorded in years of education obtained prior to assessment.

5. Training: Recorded as the number of in-service training programs, seminars, or workshops attended, prior to assessment.

6. Experience at Deputy position: Recorded in months of service at the rank of deputy and derived from reviewing promotion and assignment documentation.

7. Performance Ratings: Recorded on a scale of one (low) through five (high) and derived by reviewing the most recent performance ratings prior to assessment. Since different performance appraisal forms had been used over the past
three years, some individual's performance ratings were converted from a nine-point appraisal scale to the five-point scale. This conversion was accomplished by plotting the frequency distributions of individuals corresponding to the two appraisal forms. The percentages of candidates categorized into the ratings corresponding to the five-point appraisal form were calculated as: 5) 7%, 4) 69%, 3) 21%, 2) 3%, 1) 0%. Equivalent percentages of individuals, which were originally evaluated on a nine-point scale, were categorized into a five-point scale so that 8.4 to 9.0 = 5, 7.3 to 8.3 = 4, 6.1 to 7.2 = 3, less than 6.0 = 2.

Data were input into a VAX/VMS Minicomputer and analyzed by the use of the Biomedical Computer Program (BMDP) (Dixon, 1981).
RESULTS

The data obtained from the review of each candidates' employment history file and assessment center evaluations were statistically analyzed to determine which variables were significant predictors of group membership (i.e., deputy or corporal) by the use of a stepwise discriminant function procedure. Means and standard deviations for both groups were computed on all variables investigated and are presented in Table 1. Also, a within variable correlation matrix was computed which is presented in Table 2. Furthermore, ANOVA calculations were conducted on each variable to investigate any possible differences between the deputies and corporals. Table 3 shows the resulting calculated F statistics.

First, discriminant function analysis was performed with the background variables (i.e., age, tenure, education level, training, experience at deputy position, and performance ratings) used to compute the linear classification. The variables were chosen in a stepwise manner. Initially, the analysis provided the F statistic pertaining to each individual variable which corresponded to the F statistic computed from a one-way analysis of variance on the variable for the two groups used in the analysis.
<table>
<thead>
<tr>
<th>Variable</th>
<th>DEPUTIES</th>
<th></th>
<th></th>
<th>CORPORA LS</th>
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<tr>
<td></td>
<td>( \bar{x} )</td>
<td>S.D.</td>
<td></td>
<td>( \bar{x} )</td>
<td>S.D.</td>
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<td>.90</td>
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<td>Org. and Plan.</td>
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<td>Oral Com.</td>
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### Table 2: Within Variable Correlation Matrix

|          | AGE | TENURE | EDUC. LEVEL | PERF. RATE | TRAINING | EXP. DEPUTY | JUDGEMENT | DECISIVENESS | LEADERSHIP | ORAL & PLANNING | WRITTEN CON. | ORAL CON. | PERCEPTION | INTUITION | OVERALL A. C. | CONSULTING EX. | COUNSELING EX. | OPINION STATUS |
|----------|-----|--------|-------------|------------|----------|-------------|------------|--------------|------------|----------------|-------------|-----------|------------|-----------|-------------|----------------|----------------|----------------|---------------|
| AGE      | 1.00|        |             |            |          |             |            |              |            |                |             |           |            |           |             |                |                |               |
| TENURE   | .98 | 1.00   |             |            |          |             |            |              |            |                |             |           |            |           |             |                |                |               |
| EDUC. LEVEL | -.61 | -.07 | 1.00        |            |          |             |            |              |            |                |             |           |            |           |             |                |                |               |
| PERF. RATE | .21 | .35    | .19         | 1.00       |          |             |            |              |            |                |             |           |            |           |             |                |                |               |
| TRAINING | .33 | .95    | .07         | .29        | 1.00     |             |            |              |            |                |             |           |            |           |             |                |                |               |
| EXP. DEPUTY | -.18 | .20   | .15         | .23        | .36      | .10         | 1.00       |              |            |                |             |           |            |           |             |                |                |               |
| JUDGEMENT | .05 | .26    | .01         | .17        | .14      | -.02        | 1.00       |              |            |                |             |           |            |           |             |                |                |               |
| DECISIVENESS | -.11 | .27   | .05         | .01        | .12      | -.12        | 1.00       |              |            |                |             |           |            |           |             |                |                |               |
| LEADERSHIP | .03 | .17    | .16         | .09        | .08      | -.02        | .10        |              |            |                |             |           |            |           |             |                |                |               |
| ORAL & PLANNING | -.15 | .16   | .13         | .06        | .02      | .02         | .10        |              |            |                |             |           |            |           |             |                |                |               |
| WRITTEN CON. | .07 | .30    | .26         | .15        | .24      | .20         | .10        |              |            |                |             |           |            |           |             |                |                |               |
| ORAL CON. | .06 | .19    | .23         | .19        | .11      | .17         | .10        |              |            |                |             |           |            |           |             |                |                |               |
| PERCEPTION | .12 | .22    | .21         | .23        | .16      | .17         | .10        |              |            |                |             |           |            |           |             |                |                |               |
| INTUITION | .13 | .24    | .20         | .24        | .17      | .18         | .10        |              |            |                |             |           |            |           |             |                |                |               |
| OVERALL A. C. | .16 | .21    | .20         | .15        | .15      | .12         | .10        |              |            |                |             |           |            |           |             |                |                |               |
| CONSULTING EX. | .16 | .20    | .19         | .15        | .14      | .12         | .10        |              |            |                |             |           |            |           |             |                |                |               |
| OPINION STATUS | .16 | .20    | .15         | .14        | .14      | .12         | .10        |              |            |                |             |           |            |           |             |                |                |               |
TABLE 3
SUMMARY OF F STATISTICS RESULTING FROM ANALYSIS OF VARIANCE CALCULATIONS FOR THE EFFECT OF PARTICULAR VARIABLES ON GROUP MEMBERSHIP (DEPUTY/CORPORAL)

<table>
<thead>
<tr>
<th>Variable</th>
<th>df</th>
<th>Calculated F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>1,81</td>
<td>7.02 **</td>
</tr>
<tr>
<td>Tenure (months)</td>
<td>1,81</td>
<td>14.51 **</td>
</tr>
<tr>
<td>Educ. Level</td>
<td>1,81</td>
<td>.63</td>
</tr>
<tr>
<td>Perf. Rating</td>
<td>1,81</td>
<td>.63</td>
</tr>
<tr>
<td>Training</td>
<td>1,81</td>
<td>16.25 **</td>
</tr>
<tr>
<td>Exp. at Deputy</td>
<td>1,81</td>
<td>.38</td>
</tr>
<tr>
<td>Judgement</td>
<td>1,81</td>
<td>2.68</td>
</tr>
<tr>
<td>Decisiveness</td>
<td>1,81</td>
<td>1.67</td>
</tr>
<tr>
<td>Leadership</td>
<td>1,81</td>
<td>2.10</td>
</tr>
<tr>
<td>Written Com.</td>
<td>1,81</td>
<td>.95</td>
</tr>
<tr>
<td>Oral Com.</td>
<td>1,81</td>
<td>.50</td>
</tr>
<tr>
<td>Perception</td>
<td>1,81</td>
<td>1.53</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>1,81</td>
<td>.28</td>
</tr>
<tr>
<td>Overall A.C.</td>
<td>1,81</td>
<td>1.96</td>
</tr>
<tr>
<td>Counseling Ex.</td>
<td>1,81</td>
<td>1.47</td>
</tr>
<tr>
<td>Crime scene Ex.</td>
<td>1,81</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Note: ** = p < .01.
Three variables: age ($F = 7.02$), tenure ($F = 14.5$), and training ($F = 16.26$) were found to be individually significant ($df = 1, 81; \ p < .05$). Next, the procedure combined the significant predictors of group inclusion in a stepwise manner. Therefore, at each step the variable that added the most to the separation of the groups was entered into the discriminant function in order to determine the significant predictors of group inclusion. The analysis then indicated the best combination of background variables which accounted for the highest prediction of group membership. Three variables (tenure, training, and experience at the deputy position) were entered into the discriminant function equation, which resulted in a combined $F$ statistic of $11.743$ ($df = 3, 79; \ p < .05$; Wilks' Lambda = .6916). The analysis indicated the discriminant function coefficients for the canonical variables, which are presented in Table 4. Klecka (1980) indicated that one can "name" a function on the basis of the coefficients by noting the variables having the highest coefficients. If those variables seem to be measuring a similar characteristic, we could name the function after that characteristic. Thus, the discriminant function evidenced was identified as "longevity" based on the time characteristic of the variables which combined to form the function. However, corporals had less experience at the rank of deputy, by virtue of their having been promoted,
which resulted in a canonical coefficient that was in the opposite direction of longevity notion. Furthermore, any findings from this analysis must be subjected to further classification and exploration. No other background variables (i.e., age, education level, or performance ratings) were found to significantly add to the combined prediction of group inclusion.

Second, stepwise discriminant function analysis was performed on the assessment center skill dimension ratings (i.e., judgement, decisiveness, leadership, organizing and planning, written communication, oral communication, perception, and interpersonal skill) to determine the significant assessment center variable(s) which could predict group inclusion as being deputy or corporal. No significant predictor(s) was determined by the discriminant analysis which indicates that no assessment center skill dimension evaluation could be used to differentiate between the two groups of subjects.

Third, stepwise discriminant function analysis was performed on the overall assessment center evaluation and the overall exercise evaluations for the crime scene and counseling simulation exercises to determine if the variables were significant in predicting group inclusion. The analysis indicated that none of the overall observations could significantly differentiate between the deputies and corporals. In addition, it should be noted
<table>
<thead>
<tr>
<th>Variable</th>
<th>Canonical Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tenure (months)</td>
<td>-0.02634</td>
</tr>
<tr>
<td>Training</td>
<td>-0.12878</td>
</tr>
<tr>
<td>Experience at Deputy (months)</td>
<td>0.03487</td>
</tr>
</tbody>
</table>
that only the overall scores for the crime scene and counseling exercises were included in this analysis since the administrative in-basket exercise was not used in all three years. Hence, all subjects had not been evaluated on the in-basket exercise. In order to investigate the differences in the groups of subjects who were evaluated on this exercise an analysis of variance was conducted on the available data. No significant difference in performance was witnessed between the deputies and corporals. Thirty-nine deputies and 18 corporals were included in this particular analysis of variance.

Finally, a Pearson Correlation Coefficient was calculated to assess the relationship between the amount of management experience, measured in months of service at the corporal position, and overall assessment center evaluations. Only persons in the subgroup of corporals were included in this particular analysis which resulted in a correlation coefficient which was found to be nonsignificant \( r = .0557; p < .05 \).

Of ancillary concern was an investigation of the differences in performance for those individuals who had participated in the assessment center more than once. Thirteen subjects fell into this classification and an analysis of the differences in their two sets of assessment center evaluations was witnessed as being statistically
significant (t = 4.368; df = 1,12; P < .001), with subjects' second-time performance scores being significantly higher.
DISCUSSION

The results of this study have provided little support for the argument that managerial experience will affect performance in assessment centers developed for the management position of sergeant, in this particular law enforcement application. Stepwise discriminant function analyses have indicated the lack of any significant relationship between assessment center evaluations and the group membership of subjects as being corporals or deputies. Thus, the discriminant analysis was unable to differentiate between subjects who had managerial experience and those who did not, which indicates a lack of significant differences in the two groups' assessment center evaluations. It appears that managerial experience in this case did not provide a significant degree of training or practice to individuals who had held the rank of corporal. Although corporals tended to perform better than deputies in the assessment center, the difference in their performance was not found to be statistically significant. However, of the 11 assessment center evaluations investigated (i.e., overall performance, skill dimension performance, and exercise performance) the average performance of corporals was higher than the average performances of the deputies in every case (see Table 1).
This leads to the conclusion that although individuals with managerial experience do not perform significantly better than persons who do not have this experience, their performances were somewhat higher. Thus, the data analyses do indicate some interesting findings which warrant some discussion.

First, stepwise discriminant function analysis indicated that the three background variables which were significant predictors of group membership, on an individual basis, were tenure, training, and age. However, a combination of the background variables tenure, training, and experience at the deputy position resulted in the highest combined prediction of group membership, which gives an indication as to which variables determine whether or not a person was promoted to the rank of corporal. Furthermore, a classification matrix (see Appendix A) was calculated using the classification function weights which resulted from the discriminant analysis. The use of the derived weights resulted in the classification of individuals, into the two groups, at an accuracy rate of 80.7 percent. It appears that the background variables, which combined to be the highest predictors of promotion to the rank of corporal, corresponded to traditional promotional practices found in organizations. It can be suggested that individuals who have been with the law enforcement agency the longest and have had the most
in-service training are the individuals being promoted to the rank of corporal. Thus, it appears that performance on-the-job is less influential in the selection of employees for promotion to the corporal position. However, many organizations are attempting to develop more performance-based appraisal ratings and are relying more heavily on observable behaviors. The law enforcement agency in which the current investigation took place is no exception. The agency has recently developed performance-based appraisal systems and employs the use of assessment centers which are oriented towards observable behaviors. Furthermore, the organization falls into the realm of paramilitary structures and the military has typically been oriented towards rewarding more experienced personnel with promotions to higher ranks or positions. The results of this investigation can be viewed with regard to selection applications by indicating a need for organizations to consider actual performance when making promotional decisions concerning the selection of individuals for managerial positions. Although the best performing police officers may not be the best supervisors of police officers, considerations should be given to performance-based variables when forming promotional decision.

The current investigation has indicated that people who had obtained managerial experience (i.e., corporals)
did not perform significantly better than those who did not receive such experience, although their performances were slightly higher. These findings could be explained by the selection argument previously stated. However, it could be argued that perhaps the assessment center application is not accurately measuring the management skills that it purports to be evaluating. Also, it appears that the skill dimensions evaluated during the assessment process are highly correlated with each other. A review of the within variable correlations pertaining to the skill dimensions assessed indicates a range of correlation values between .37 and .80. Several of the correlations are greater than .60, which indicates that the dimensions are not highly discriminant and supports the use of more independent measures. On the other hand, a review of the simulation exercises incorporated in the assessment center, which were developed following extensive job analyses, leads the author to conclude that the current and past assessment centers conducted by the agency for promoting individuals to the sergeant position require candidates to rely on the various managerial skills evaluated. Furthermore, the Pearson Correlation Coefficient calculated to investigate the relationship between length of management experience (i.e., months of service at the rank of corporal) and overall assessment center evaluations was found to be nonsignificant. Thus, higher amounts of managerial
experience for those people holding the rank of corporal appear to have little effect on their assessment center performance. Consideration might be given to the use of an assessment center for the purpose of promoting individuals to the rank of corporal and using this rank as a formal management position in order to provide managerial experience to individuals before allowing them to proceed to higher management levels. These considerations could improve the selection process and thus increase the efficiency of organizations by providing a better fit of appropriate personnel to management level positions. Also, consideration might be given to the development of structured management training programs which could provide individuals with the training needed to increase their performance of actual job behaviors. The use of management training programs would allow individuals to further develop their managerial skills and would benefit the organization as well as the individuals.

It was also of interest to investigate the variables pertaining to the current study by analyzing how they were related to each other. Although this was initially done by reviewing the within variable correlation matrix, the author took this evaluation one step further by performing a cluster analysis (Hartigan, 1975) using all variables (i.e., background and assessment center variables). Clusters were formed by using the absolute value of the
bivariate correlations as the measure of similarity. The linkage rule (i.e., the criterion for combining two clusters) that was used pertained to the minimum distance, maximum similarity criteria. The analysis indicated that the background variables, except for the variable of education level, clustered together. Also, all of the assessment center evaluations (i.e., overall, skill dimension, and exercise scores) clustered together with the background variable of education level. It appears that education level obtained prior to assessment center part participation was more related to assessment center evaluations than it was related to the other traditional background variables. It is suggested that further research be conducted which would investigate the relationships between historical variables and evaluations obtained during the assessment center process as well as the relationship between the various skill dimensions measured during an assessment center.

It should be noted that the current investigation was conducted using the available data on only 83 subjects. The low number of subjects could have contributed to the findings reported. It is suggested that the agency re-evaluate the concern of this investigation as more candidates are assessed with the passage of time. In addition, only candidates who had participated in the assessment program were included in this investigation.
Therefore, the analyses were performed on a select sample of individuals.

It is also suggested that organizations consider the effects of previous experience in an assessment center on subsequent assessment center performances. At present, 13 subjects had been evaluated more than once by the means of the assessment center. The current investigation involved initial assessment scores and thus the subsequent performances were excluded from the analyses. However, the differences in performances for the 13 individuals assessed more than once in the center were witnessed as being statistically significant. Further consideration should be given to this area of concern. Perhaps the assessment had provided a form of training to individuals which resulted in their increased performance in subsequent assessment center evaluations. Consideration might be given to the development of assessment centers for the purpose of providing training to individuals by placing them in simulated job situations. On the other hand, a total number of $N = 13$ causes a great deal of hesitancy in making conclusions based on this analysis. However, the analysis does indicate a need for the further investigation of this area in future studies.

In addition, it is also suggested that perhaps corporals model the behavior of the sergeants who serve as their supervisors so that a form of behavioral modeling had
taken place. Future studies could assess the quality of the models (i.e., supervising sergeants' performance ratings) and thus investigate the effect of the quality of managerial experience on assessment center evaluations. Behavioral modeling training has been used to increase the performance of individuals in assessment centers and considerations should be given to the use of the technique to increase the managerial skills of individuals.

The current investigation found little support for the argument that greater managerial experience, as a function of time, will result in better performance at an assessment center. However, the results of this study indicate the need for further investigation of this area of research concern.
APPENDIX A

CLASSIFICATION MATRIX
### CLASSIFICATION MATRIX

<table>
<thead>
<tr>
<th>Group</th>
<th>% Correct</th>
<th>% of Cases Classified into Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Deputy</td>
</tr>
<tr>
<td>Deputies</td>
<td>85.5</td>
<td>47</td>
</tr>
<tr>
<td>Corporals</td>
<td>71.4</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>80.7</td>
<td>55</td>
</tr>
</tbody>
</table>
REFERENCES


