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ABSTRACT

The project examines shortages of police manpower and analyzes the economic content of police hiring standards. A monopsony explanation of shortages is rejected in favor of a dynamic shortage model and a more rigorous model stressing the interaction of wages, hiring standards, authorized employment levels, and vacancy rates. Through mulitple regression techniques, the characteristics sought by the Oakland (California) Police Department testing process between 1965 and 1971 are defined. The probability of success is greatly increased as years of education increase, and is also raised by previous police experience and high previous wages. It is decreased by minority group status and local residence. Recent changes are reviewed, such as aggressive minority recruiting and affirmative action programs, which have greatly increased minority representation on the force. A review of the literature and a bibliography are included. (Author)

An Analysis of the Labor Market for Policemen

By

Louise Berman Wolitz

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AN ANALYSIS OF THE LABOR MARKET FOR POLICEMEN

Louise Berman Wolitz

ABSTRACT

This project attempts to explain shortages of police manpower and analyze the economic content of police hiring standards. The shortages are of applicants considered qualified.

Chapter 2 outlines the ambiguous and politically sensitive nature of the police job and the difficulties of defining successful performance.

Chapter 3 discusses three distinct theoretical models. The simplest solution to shortages is to raise wages sufficiently to eliminate them. Imperfect information and lags in institutional decision-making are added to simple theory by the concept of dynamic shortages, which allows wage adjustments to take considerable, even infinite, time.

Secondly, shortages may arise from the exercise of monopsonistic market power, which implies an equilibrium position with job vacancies at a monopsonistic wage.

Third is a rigorous model, stemming from a utility maximizing theory of public agency decision-making, which stresses the complex interaction between wages, hiring standards,

authorized employment levels, the value of the public service, and expected vacancy rates. It is suggested that an agency may wish to solve the problem of who shall be hired to fill vacant positions, given authorized employment and wage levels, by defining a minimum acceptable quality level chosen to maximize the expected value of the net gain to society from the employees.

Chapter 4 analyzes the salaries, benefits, vacancies and hiring standards of the Oakland, California, Police Department. The evidence leads us to reject the monopsony explanation in favor of a dynamic shortage model.

In Chapter 5, we attempt to define the characteristics sought by Oakland's Mental Adaptability, Civil Service, and Oral examinations, using data from 2,366 employment applications submitted between 1965 and June, 1971, and multiple regression techniques.

We find that while high school graduation is the only formal educational requirement, the probability of success in the Mental Adaptability is increased by large magnitudes as years of higher education increase from some years of junior college through three to four years of senior college or a college degree. Senior college education still has a significant effect, moreover, on the ability to pass the Civil Service test.

Local residence has a negative effect on the probability of selection, perhaps because out-of-state candidates invest in more search and self-selection.

Minority status, whether measured directly or indirectly by the proxy of high school attendance in the South, has a large, significant, negative effect on the probability of passing the written tests, but a positive effect on passing the Oral.

Specific investment in police science courses is unimportant, but previous police experience has a significant, positive effect on the probability of success at all stages of the process.

The role of previous salary is clouded by the difficulties of filtering out part-time from full-time work. The highest previous salary category, $700 a month or more, has a significant positive effect on the probability of success.

Age has a small, negative effect on passing the Mental Adaptability, resulting from the well-known attrition of test-taking ability with age, holding education constant, but a positive effect on passing the Oral, reflecting concern with maturity.

Chapter 6 presents the dramatic changes in the legal environment, recruitment and selection between 1971 and 1974, resulting, most importantly, in an increase in the minority percentage of the force from 3 percent in 1966, to 6.5 percent in

1970, to 16 percent in 1973, and 61 percent of the new hires in 1973. Affirmative Action and aggressive minority recruitment have yielded significant results without sacrificing quality standards. Moreover, patrolman and policewoman categories have been merged, and height and weight standards abolished, so more women should be hired. We also discuss Oakland's turnover experience.

Chapter 7 concludes that wages, recruitment and selection must be viewed together and hiring standards define not only the potential police labor supply, but the nature of the job itself.

To my parents,

Abraham J. and Sylvia N. Berman

whose love and example provided the foundation

and to

my husband, Seth

and my daughter, Rebecca

who encouraged and supported the fulfillment

and to

the memory of my grandfather,

Israel Berman

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Professor William K. Muir shared his own deep understanding of the police function, the Oakland Police Department, and the relationship of intellectual theories to public policies, his enthusiasm for the importance of the subject, and his ability to clarify ideas. The interest and comments of the members of my committee added greatly to the study. All remaining errors are my own.

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CHAPTER 1

INTRODUCTION

On July 23, 1965, "recognizing the urgency of the Nation's crime problem and the depth of ignorance about it,"[1] President Lyndon Johnson established the Commission on Law Enforcement and Administration of Justice, through Executive Order 11236. In its omnibus 1967 report, The Challenge of Crime in a Free Society, the Commission emphasizes unequivocally the central role of police manpower policies in the functioning of the American criminal justice system. "The police personnel need that the Commission has found to be almost universal is improved quality... The recommendations that have been made... about community relations and policymaking, and the ones about... organization and management, are predicated on the sharp improvement of the quality of police personnel from top to bottom."[2] In its much-quoted Table of Recommendations, the Commission continues:

> Widespread improvement in the strength and caliber of police manpower, supported by a radical revision of personnel practices, are the basic essentials for achieving more effective and fairer law enforcement.

> Educational requirements should be raised to college levels and training programs improved. Recruitment and promotion should be modernized to reflect education, personality and assessment of performance. The traditional monolithic personnel structure must be broken up into three entry levels of varying responsibility and with different personnel requirements, and lateral entry into advanced positions encouraged.[3]

Other discussions of police manpower abound with widespread complaints of "shortages" of personnel to fill authorized positions[4] and difficulties in recruiting and selecting desirable candidates.[5] These problems are enhanced by serious controversies over appropriate hiring standards and racial/ethnic composition and their interrelationship.

While the intentions of the Commission are laudatory, the clarity and sureness of its statement is deceptive. To speak of "improvement" implies a perception of an existing state and of a better one towards which one seeks to move. Yet, as recognized by the Commission itself in its Foreward, discussions are being held and policy recommendations are being made in an abysmal analytic vacuum, not just about ideals but also about realities. Are there, in fact, "shortages"[6] of police personnel? If so,

why, and how can they be corrected? If not, why are they widely perceived by police departments? A classic economic discussion would infer that if there are shortages, perhaps salaries are too low. Would raising police salaries be a good policy approach? How can persistent complaints of "shortages" be reconciled with the equally persistent debates about the existence of arbitrary hiring standards, discrimination against minorities, and demands to upgrade the "quality" of the men hired, all phenomena more usually associated with freedom to ration scarce jobs among many potential workers? Perhaps a partial explanation lies in the very murky, institutional area of labor market adjustment where hiring standards, recruitment and selection procedures are worked out and administered.

Even more puzzling is the question of what is meant by improving the "strength," "caliber," or "quality" of police manpower. How do we know that raising educational requirements to college levels will improve police quality? What personality traits are we seeking in our policemen? How do we assess police performance? How do we design recruitment, selection and promotion processes to yield "quality" men?

It is the purpose of this study to shed some substantive light on these questions. Immediately, it became apparent that

"shortages," if any, were caused not by too few applicants offering their services, but rather by an insufficient number deemed "qualified" by police departments.

> Although police departments are encountering difficulty in hiring new officers, this is not due to a dearth of applicants, but to a lack of qualified applicants. In 1961, only 22.3 percent of the applicants for positions in 368 police departments were accepted. The applicant success rate in many departments is far lower. For example, in 1965, only 2.8 percent of the candidates for the Los Angeles Police Department were eventually accepted into the force. In 1966, only 29 of 1,033 applicants were hired by the Dallas Police Department.[7]

A survey of police vacancies in California clearly "indicated generally that most agencies had no difficulty in attracting men in quantities, the problem was hiring and retaining men of quality."[8]

One is forced, therefore, to find out who it is that police departments actually hire and why. What qualities do they seek from their labor supply and why? In an environment in which so little is known, this question is complementary to the more normative one of what qualities should they be seeking and why.

A meaningful analysis of the police labor market must focus on a conception of the economic adjustment process which is particularly sensitive to the role of such non-wage factors as recruitment, selection and training.

To understand the role of non-wage economic factors, it is necessary to study particular departments, their decisions, decision rules and institutions. We were fortunate enough to obtain the interest and cooperation of the Police Department and Civil Service Commission of the City of Oakland, California. The empirical focus of this study will be an attempt to assess the role of the recruitment and selection process in yielding a labor supply to the City of Oakland to fill its demand for patrolmen.

In particular, we will seek to discover the determinants of success for Oakland Police Department applicants at three critical stages of the process: the Mental Adaptability, Civil Serice and Oral exams. We will concentrate on those variables that labor market theories lead us to believe should be important, leaving the more difficult, perhaps even more important, area of personality assessment to the psychologists. A priori, we expected that the critical variables would be: years of education, residence, racial/ethnic status, specific police training or experience, previous wages earned, employment history and age.

We test, through multiple regression techniques, the influence of these variables on 1) the probability of success and 2) the score on each of the exams. We will summarize our results here, briefly and only suggestively.

We find that while high school graduation or its equivalent is the only formal educational requirement for applicants to the Oakland Police Department, the probability of success at the first stage of the testing process, the Mental Adaptability, is increased by large magnitudes as years of higher education increase from some years of junior college through three to four years of senior college or a college degree. Senior college education still has a significant effect, moreover, on the ability to pass the Civil Service test. One might argue, therefore, that the Oakland Police Department should assess carefully the advantages and disadvantages of making explicit their implicit educational standards by increasing the minimum educational requirement. They would thus transmit more realistic signals of their expectations to potential applicants. They would acknowledge more clearly their competitors for labor. The wage necessary to attract an adequate supply of college graduates, for example, would differ considerably from that necessary to attract the same number of high school graduates. Perhaps most

importantly, they would save the substantial cost of recruiting, screening and testing applicants very likely to be rejected.

Alternatively, one can conclude that perhaps the emphasis placed by tests upon years of education is screening out desirable candidates who would make "successful" policemen, and it is the tests, not the standards, which should be re-evaluated. These and other issues will be discussed more fully later.

Local residence appears on balance to have a negative effect on the probability of selection. This may be partly explained by the fact that it is considerably more costly for an out-of-state resident to seek out the opportunity and to apply than it is for a local fellow to walk into City Hall off the streets. Therefore, out-of-state people must have, on the average, more motivation or interest, and would do more self-selection than local residents. This may argue either in favor of increased national recruiting efforts to improve the average "quality" of applicants as perceived by the department, or against the perception of quality employed.

Minority group status, whether measured directly or indirectly by the proxy of high school attendance in the South, has a large and significant negative effect on the probability of passing the standardized written test. It should be emphasized

here that multiple regression techniques allow us to estimate the independent effect of minority status, holding everything else (education, residence, etc.) constant. This points either to intentional discrimination or to the validity of the complaints of the minority community that such tests are culturally biased and thus inherently discriminatory. In fact, recent court decisions, including one by the Supreme Court of the United States, in related cases, make it clear that if a selection test is inherently discriminatory, the burden of proof is on the testing agency to show that the test predicts performance. If predictive validity cannot be demonstrated, the test must be abandoned and, sometimes, compensatory measures taken to correct its effects.[9]

It should be added here that Oakland has recognized the desirability and/or need to increase minority representation. This is demonstrated by the fact that, at least in 1971, the last year of our study, those minority members who make it through the written tests have a higher probability of passing the oral than non-minority candidates. More recently, Oakland has switched from national recruiting to residence preference, adopted an affirmative action program and embarked on aggressive minority recruitment campaigns which have yielded significant results.

Specific investment by applicants in college or non-college police science courses is unimportant. Neither the Police Department nor the Civil Service staff believe outside training to be worth anything. They emphasize their own intensive 20 week recruit school. Prior experience as a policeman, however, does have a significant positive effect on the probability of success at all stages of the process. Of course, such candidates have already succeeded in a similar selection process elsewhere.

The role of previous salary as an indicator to the department of an applicant's potential performance as a policeman is clouded in our study by difficulties in filtering out part-time from full-time work. The highest previous salary group, $700 per month or more, does have a consistent significant positive effect on the probability of a man being accepted. Other salary groups were inconclusive. To minimize the distorting effects of part-time work, we looked at the non-college group alone. For this group, the previous wage variable behaved as economic theory would predict, with higher salaries indicating progressively greater probabilities of being selected. Previous salary does indicate alternative worth and promise as a policeman. Number of previous jobs enumerated on the application is unimportant.

Age has a small negative effect on the probability of passing

the Mental Adaptability, resulting from the well-known attrition of test-taking ability with age, holding education constant. Age has, however, a positive effect on success on the oral, reflecting a concern with maturity.

We propose to proceed as follows. Chapter 2, "The Job," will describe the unique nature of the job of policeman, the difficulties in defining a "successful" policeman, the current controversies, and the importance of the definition of the job to the operation of the labor market.

Chapter 3, "The Theoretical Framework," will seek a theoretical explanation of the alleged shortages of police manpower in the 1960's. It will review the determinants of the supply of labor to police departments. It will describe in detail three distinct theoretical models which might be helpful in understanding Oakland's experience.

First, the simplest economic reasoning argues that shortages should be eliminated by a sufficient rise in relative wages. Informational imperfections and institutional decision-making are added to the simple model by the conception of dynamic shortages, which allows wage adjustments to take considerable, even infinite, amounts of time.

Second is a model which relies on market power, specifically monopsony, to explain shortages as consistent with a monopsonistic equilibrium position and a monopsonistic wage. Police departments experience job vacancies in equilibrium because of their exercise of monopsony power in the labor market.

Third is a rigorous model, stemming from a utility maximizing theory of public agency decision-making, which stresses the complex interaction between wages, hiring standards, authorized employment levels, and vacancy rates. The problem faced, in fact, by real world police agencies is defined: given authorized employment and wage levels, who shall be hired to fill vacant positions? It is suggested that the agency may wish to approach this problem by defining a minimum acceptable quality level, perhaps through a vector of hiring standards, chosen to maximize the expected value of the net gain to society. The formal implications of this model are discussed in detail.

Chapter 4, "The Institutional Framework: Salaries, Vacancies, Hiring Standards," analyzes the salaries, vacancies and hiring standards of the Oakland Police Department. The evidence leads us to reject the monopsony explanation in favor of a dynamic shortage model.

We also begin our effort to define and describe the vector of hiring standards of the Oakland Police Department.

Chapter 5, "The Empirical Analysis," which we have already discussed, further specifies the vector of hiring standards by analyzing the characteristics for which the Oakland Police Department's selection process between 1965 and 1971 is testing.

Chapter 6, "The Challenges of the 1970's," presents the dramatic changes in recruitment and selection which have occurred between 1971 and August, 1974, and their effect on the composition of the Oakland police force. Residence requirements, Affirmative Action, and aggressive minority recruitment campaigns have yielded significant results. The minority composition of the force has increased from 3 percent in 1966 and 6.5 percent in 1970 to 16 percent in 1973 and 61.0 percent of new hires in 1973. The sexual composition of the police force is changing as well, as patrolman and policewoman categories are merged, and height and weight standards which would exclude the majority of women from the new police officer job are abolished. In Chapter 6, as well, we also discuss the turnover experience of the Oakland Police Department and analyze in depth why

officers resigned. We discuss and reject the possibility of increasing economic incentives to retain resignees.

Chapter 7, "Summary and Conclusions," concludes that our evidence is consistent with the model of dynamic shortages and inconsistent with the monopsony power explanation of job vacancies in equilibrium. We do not wish to rest with only the simple model, however, because the complex interactions between wages, hiring standards, authorized employment levels and vacancy rates must be explored further. We hope we have made some contribution to observing, analyzing and understanding the central role of the choice of the vector of hiring standards.

CHAPTER 1

FOOTNOTES

1. President's Commission on Law Enforcement and Administration of Justice, The Challenge of Crime in a Free Society (Washington, D. C.: U. S. Government Printing Office, 1967), Foreward.

2. Ibid., p. 107.

3. Ibid., pp. 294-295.

4. See, for example, Raymond I. Bancroft, "Municipal Law Enforcement, 1966," Nation's Cities, February 1966, pp. 15-17; and President's Commission on Law Enforcement and Administration of Justice, Task Force Report: The Police, pp. 133-134.

5. See, for example, State of California, Commission on Peace Officer Standards and Training, California Law Enforcement Recruitment Program, p. 4.

6. The question of defining "shortage" precisely will be dealt with at length in Chapter 3.

7. President's Commission on Law Enforcement and Administration of Justice, Task Force Report: The Police, p. 134.

8. State of California, Commission on Peace Officer Standards and Training, California Law Enforcement Recruitment Program, p. 4.

9. The Supreme Court decision is Griggs v. Duke Power Company, March 8, 1971. See also Julius Arrington et al. v. Massachusetts Bay Transportation Authority, Civ. A. No. 69-681, United States District Court, Massachusetts, December 22, 1969: Carter et al. vs. Hugh Gallagher et al., United States District Court, District of Minnesota, Fourth Division, March 9, 1971: United States of America v. Virginia Electric and Power Company et al., Civ. A No. 638-70-R, United States District Court for Eastern District of Virginia, Richmond Division, May 4, 1971.

CHAPTER 2

THE JOB

DEFINITION OF THE JOB

Unlike most jobs in our increasingly specialized economy, the job of policeman remains inordinately difficult to define. The policeman is simultaneously technician and generalist. In the routine performances of his daily tasks, he must adhere to finely drawn rules of dress, report writing, obedience to command, weapons management, citizen contact procedure and law enforcement procedure. He must often endure long hours of boredom, watching, waiting, appearing in court, filling out endless forms. Yet, inherent in the job is the knowledge that at any moment, virtually without warning, he may be called upon to exercise unlimited discretion, spontaneously and without guidance, in matters of life and death for others and himself. He must be an efficient clerk without the security of constant routine, a skilled craftsman without clear quality standards or freedom to improvise, a professional without certification, systematic research or collegial self-government.

The complexity of the police task was well captured in 1931 by the Wickersham Commission.[1] We have defined it no better

today.

> Reviewing the tasks we expect of our law enforcement officers, it is my impression that their complexity is perhaps greater than that of any other profession. On the one hand we expect our law enforcement officer to possess the nurturing, caretaking, sympathetic, empathizing, gentle characteristics of physician, nurse, teacher, and social worker as he deals with school traffic, acute illness and injury, juvenile delinquency, suicidal threats and gestures, and missing persons. On the other hand we expect him to command respect, demonstrate courage, control hostile impulses, and meet great physical hazards. . . He is to control crowds, prevent riots, apprehend criminals, and chase after speeding vehicles. I can think of no other profession which constantly demands such seemingly opposite characteristics.

Research interest in the policeman's job was galvanized by the explosive urban and campus tensions of middle-1960's America and the questions raised by the very visible and public police response. The urgency of remedying our abysmal ignorance of policeman was apparent. The President's Commission on Law

Enforcement and Administration of Justice was therefore established by President Johnson on July 23, 1965, to investigate "every facet of crime and law enforcement in America."[2] It issued its omnibus report, The Challenge of Crime in a Free Society, in February, 1967, followed by detailed Task Force reports on each phase of the criminal justice system and also staff research and consultants' studies. The literature, both descriptive and analytic, has blossomed since then, and if our questions have not been answered, at least many have been raised. The difficulty of merely defining and describing the policeman's job is underscored by the appearance of so many recent books by major publishers with this one aim in mind. I am emphasizing this issue here because a labor market study would logically begin with a clear and concise definition of the job to be studied. The fact that the job defies simple definition is the single most important characteristic of the labor market and sets the stage for many of the controversies and problems upon which this paper focuses. The reader interested in a fuller discussion of the details, conflicts and problems inherent in the policeman's job is directed to the following books, listed in approximate order of appearance: David J. Bouma, The Police (New York: Wiley, 1967); Arthur Niederhoffer, Behind the Shield

(Garden City: Doubleday, 1967); Jerome Skolnick, Justice Without Trial (New York: Wiley, 1967); James Q. Wilson, Varieties of Police Behavior (Cambridge: Harvard University Press, 1968); George E. Berkeley, The Democratic Policeman (Boston: Beacon Press, 1969); Paul Chevigny, Police Power (New York: Vintage Books, 1969); Gene Radano, Walking the Beat (Toronto: Collier Books, 1969); L. H. Whittemore, Cop. (New York: Holt, Rinehart and Winston, 1969); William A. Westley, Violence and the Police (Cambridge: MIT Press, 1970); Albert J. Reiss, Jr., The Police and the Public (New Haven: Yale University Press, 1971); and Jonathan Rubinstein, City Police (New York: Farrar, Straus and Giroux, 1973).

The functions of the police are officially described as 1) protection of life and property, 2) preservation of the peace, 3) prevention of crime, 4) detection and arrest of law violators, 5) enforcement of laws and ordinances, and 6) safeguarding the rights of individuals.[3] Ambiguity and potential conflicts are already obvious. Law enforcement functions may clash with order maintenance ones. Prevention and detection of crime may clash with individual rights. Whose conception of peace or order or conformity is to be preserved? Should the law be bent to preserve order, or order reign over law? Since each case a

policeman handles is different, there can be no exhaustive catalogue of how he should proceed to carry out his mandate. At best, he is told what behavior to avoid. Substantial individual discretion and selective enforcement of the law are inevitable. And in his person coexist two potentially combustible elements, danger and authority, exacerbated by a constant pressure to appear efficient.[4] In addition, the primary duties are sometimes forgotten under the pressure of accomplishing various licensing, inspecting and administrative tasks.

There are several research studies in progress now to find out exactly what it is that policemen do with their time. Preliminary evidence from these studies seems to bear out that in spite of the drama of the above description, policemen actually spend only approximately ten percent of their time on law enforcement related activities. The bulk of their time is spent on service related activities, followed by order maintenance and information gathering.[5]

The most serious question which arises from ambiguity is that of responsibility. To whom is a policeman, a police chief, a police force ultimately responsible? The locality it serves provides it with no exhaustive daily guidance. Local governing boards, in fact, become involved only in clear cases of police

failure. Most localities today, particularly urban ones, are not homogeneous entities, but represent diverse political and social groups with widely disparate, often passionately held views as to the appropriate role of the police. Whose views prevail? How are they determined? Can a majority view be defined? Is it middle class, Catholic, intellectual, young, middle-aged, Democratic, Republican, white, black, etc.? Are all groups in the community involved in the determination, or only some? What about minority rights?

These are rhetorical questions, but critical ones. For some cities there are answers, for others there are not. Many cities simply attempt to avoid the questions. For our purposes, it must be clear that the politics of the police, and its social mandate, are heavily controversial, fundamentally explosive subjects, totally unresolved in America today. Many of the issues of police manpower we will be dealing with in economic terms here are really reflections of or attempts to mask a powerful political debate. So we must remain alert for implications broader than our subject.

POLICE PROFESSIONALISM

One example, extremely critical to this study, is the issue of professionalism or professionalization of police forces. Indeed,

one way to divert the political questions is to make the police a profession, like doctors, lawyers, teachers, responsible primarily to themselves, their collegially determined goals and standards of conduct. Professionalism itself is difficult to characterize.[6] In Durkheim's view, what is distinctive about professional groups is not merely their high status, high skill, politically important monopoly over certain kinds of work, or particular structure of control over work, but, most importantly, the infusion of work and collective organization with moral values and the use of sanctions to insure that these moral values are upheld. An alternative concept of professionalism is associated with a managerial view emphasizing rationality, efficiency and universalism. This view envisages the professional as a bureaucrat, almost as a machine calculating alternative courses of action by a stated program of rules and possessing the technical ability to carry out decisions irrespective of personal feelings. This model has particular disadvantages when applied to the police because it fails to bridge the gap between the maintenance of order and the rule of law and because the policeman is an especially nonmechanical official.[7]

The argument that policemen should become professionals rests on increasing awareness of the complexity of the job, the

responsibility and judgment involved, the critical and isolated nature of some of the decisions required. Education is proposed as the vehicle through which men can be molded to handle discretion and make good decisions. The quality of policemen should therefore be upgraded, two-year or four-year college degrees required, departmental training programs deepened and broadened, career hierarchies established, salaries raised, pseudo-military conformity revised, physical prowess de-emphasized, selection implements refined. All of this, moreover, should improve the image, status and power of the policeman within his community and secure public confidence and support. Although the rhetoric encompasses both definitions of professionalism, the reality tends towards the strictly administrative one.

In thoughtful, improvement-oriented police circles, increasing professionalism is often proposed as a rational cure for the problems of relations with minority communities, corruption, securing quality personnel and assuring public confidence, particularly in the context of ever more sophisticated technological advances and legal questions. The reports of the President's Commission on Law Enforcement and Administration of Justice unanimously and enthusiastically support and make extensive

policy recommendations in this direction, as quoted on the first page of the Introduction to this study. The suggestions most often offered can be summarized as follows:[8]

1) high standards of admission, through mandatory minimum educational, mental, moral and physical requirements;
2) extensive training programs for candidates, perhaps with mandatory minimum standards, uniform curricula, and specially trained teachers;
3) a career hierarchy, with progression determined by education, training and experience levels;
4) licensing of members;
5) a code of ethics;
6) a special body of knowledge and theory, improved by organized research efforts;
7) altruism and dedication to the service ideal;
8) autonomous control;
9) pride of the members in their profession;
10) publicly recognized status and prestige;
11) coordinated efforts of local jurisdictions to meet common administrative, recruitment and selection problems.

California police departments, and the Oakland Police Department in particular, are proudly pointed out as having already made substantial progress towards becoming professional departments.

Within police departments themselves, the issue of professionalization is still controversial. The street-wise, old-time, experienced beat patrolman who could not meet the suggested educational standards generally scorns and resents both the standards and their "cocky," inexperienced human embodiments. Considerable hostility and social tension may be generated between the young, college-educated, professional and the old-timer.

> The doctrine of the professional movement advocates education, a non-punitive orientation, strict legality in every phase of police work, and, most important of all, good public relations. These principles create an atmosphere in which only the professionally directed police officer can operate successfully. On a lower plane within the hierarchy exists the tough-minded, authoritarian working class of the police society. Conditions here foster exaltation of power and force and contemptuousness of the unrealistic, soft-minded, subversive ideas of professionals.[9]

Outside scholars of the police such as James O. Wilson, Arthur Niederhoffer, and Jerome Skolnick are also not convinced by the professionalization rhetoric, agreeing that although police often have the responsibility, discretionary power, and aspirations of professionals, they are not professionals yet.

> Occupations whose members exercise, as do the police, wide discretion alone and with respect to matters of the greatest importance are typically "professions"--the medical profession, for example. The right to handle emergency situations, to be privy to 'guilty information', and to make decisions involving questions of life and death or honor and dishonor is usually, as with a doctor or priest, conferred by an organized profession. The profession certifies that the member has acquired by education certain information and by apprenticeship certain arts and skills that render him competent to perform these functions and that he is willing to subject himself to the code of ethics and sense of duty of his colleagues (or, in the case of the priest, to the laws and punishments of God). Failure to perform his duties properly will, if detected, be dealt with by professional sanctions--

primarily, loss of respect. Members of professions tend to govern themselves through collegial bodies, to restrict the authority of their nominal superiors, to take seriously their reputation among fellow professionals, and to encourage some of their kind to devote themselves to adding systematically to the knowledge of the profession through writing and research. The police are not in any of these senses professionals. They acquire most of their knowledge and skill on the job, not in separate academies; they are emphatically subject to the authority of their superiors; they have no serious professional society, only a union-like bargaining agent; and they do not produce, in systematic written form, new knowledge about their craft.

In sum, the order-maintenance function of the patrolman defines his role and that role, which is unlike that of any other occupation, can be described as one in which SUB-PROFESSIONALS, WORKING ALONE, EXERCISE WIDE DISCRETION IN MATTERS OF UTMOST IMPORTANCE (LIFE AND DEATH, HONOR AND DISHONOR) IN AN ENVIRONMENT THAT IS

> APPREHENSIVE AND PERHAPS HOSTILE. The agents of various other governmental organizations may display one or two of these characteristics but none or almost none display all in combination. The doctor has wide discretion over matters of life and death, but he is a professional working in a supportive environment. The teacher works alone and has considerable discretion, but he may be a professional and in any case education, though important, is not a matter of life or death. A welfare worker, though working alone among apprehensive clients, has relatively little discretion--the laws define rather precisely what payments he can authorize to a client and supervisors review his written reports and proposed family budgets.[10]

The issue of the possibility and desirability of police professionalization could be passed over as of purely theoretical interest if attempting to apply the concept had few costs. How, after all, could ungrading the quality of police forces be a bad policy? Clearly, there is an economic cost. Briefly, higher salaries must be paid in order to attract a more highly "qualified" labor force. A college educated force must cost more than a

high school educated one. If quality standards are artificially high, so are salaries. If departments do not succeed in attracting enough men of "professional quality," they will be operating chronically below their authorized strength, a prevalent situation in the 1960's.

Moreover, additional hiring standards increase barriers to entry to the job, reducing the effective supply of labor. This is critically important here because increasing educational standards is particularly likely to reduce the already grossly inadequate pool of applicants from minority groups. Professionalization directly clashes with, even makes a mockery out of, loudly espoused efforts to increase the representation of minority groups; yet minority status itself may determine professional efficiency

The serious under-representation of minority groups on police forces is well documented in every city, county and state where statistics are available.[11] For example, according to a suit filed by the United States Justice Department on August 15, 1973, in U. S. District Court in Chicago, the Chicao Police Department has about 13,500 police officers, of which 16 percent are black and 1 percent are Spanish-surnamed. About 33 percent of Chicago's population is black and 7 percent Spanish surnamed. On the same day, the Justice Department filed a suit

in Federal court in Buffalo, which employs 1,405 uniformed police officers. Of the uniformed officers, 1.8 percent are black, none is Puerto Rican. Blacks make up more than 20 percent of Buffalo's population and Puerto Ricans 0.4 percent.[12] In San Francisco, 9 percent of the city's police force is composed of minority members. The 1970 Census listed minorities as 43 percent of the population.[13] Washington, D. C. has one of the highest proportions of black officers in the country, 18.5 percent, with a population 54 percent black.[14] In Oakland, which is almost 50 percent minority, 7.3 percent of the uniformed police force was minority as of June 1970.[15] Oakland's record is particularly bad in a generally bad picture.[16]

Advocates of police professionalization, including the President's Commission, have not dealt openly with the direct conflict between raising educational standards and improving minority representation. Some even advocate that if police forces become professional, the problem of minority representation becomes unimportant because a professional force, by definition, would enforce all interests equally, making representation of "special" interests unnecessary. The political naivety, at best, of this view requires no elaboration.

In fact, the opposite case can be made persuasively. The

current demand for a more formally educated police force may be in part a drive by the growing class of professional and educated Americans to gain influence over police actions, to make "them" more like "us," to insure responsiveness to the perceived needs of this class.[17] The whole conflict over police aims and standards can be looked at politically as a theater in which different population groups compete for representation and influence. The issues, perhaps, cannot be handled until police departments and political leaders explicitly recognize and deal with, rather than implicitly obscure, the political context of police work.

These profound basic political controversies must be kept in mind as one turns to the economic and empirical issues. The controversies are all the more serious because the professional standards proposed have no clear empirical validity in identifying successful policemen.

IDENTIFYING THE SUCCESSFUL POLICEMAN

The empirical social scientist offers another means of avoiding political controversy. The qualities needed to be a successful policeman can be determined empirically with the aid of modern statistical techniques, and selection procedures can then be designed to choose those applicants most likely to

succeed. A requirement that all police candidates have a college degree, for example, can be recommended, validated and enforced if it can be demonstrated statistically that college graduates perform better on the job. Indeed, advocates of police professionalization often leave the impression that such validation has already taken place.

A burgeoning interdisciplinary literature has been emerging addressed to this effort. It varies in quality from the bizarre to the careless to the sophisticated and careful. Bernard Cohen's and Jan M. Chaiken's Police Background Characteristics and Performance, published by the New York City Rand Institute in August 1972, represents by far the best study. We will consider it here in detail as illustrative of the potential role of competent, thoughtful empirical analysis in identifying desirable characteristics of policemen.

Cohen and Chaiken obtained and analyzed background and performance data for 1, 915 officers appointed to the New York City Police Department in 1957, 1, 608 of whom were still active members in 1968 when the information was collected. From 18 possible performance measures they identified by factor analysis five performance patterns:

1) termination, which describes the officer who left

the Department prior to 1968, either voluntarily or involuntarily;

2) career advancement, which refers to the officer who obtained special assignments or promotions, frequently coupled with above-average numbers of awards;

3) departmental discipline problem, which describes the officer who had an above-average number of departmental charges, and frequently also had an above-average number of times sick:

4) above-average number of civilian complaints; and

5) above-average number of allegations of harassment.[18]

The last four performance patterns were found to be independent of each other.

They then explored the relationship between these performance patterns and the following background characteristics of the officers:

A) Early background characteristics

1) Race

2) Age

3) I. Q.

4) Civil Service Test Score

5) Region of birth

6) Siblings

7) Occupational history

8) Military history

9) Arrest history

10) Civil court appearances

11) Large number of debts

12) Prior history of psychological disorders

13) History of mental disorder in family

14) Father's occupation

15) Number of residences or place of residence

16) Marital status and number of children

17) Number of summonses

18) Background investigator's rating

B) Later background characteristics

1) Recruit training score

2) Probationary evaluation

3) Education[19]

Through multiple regression analysis, they estimated the average performance levels for officers having specified combinations of background characteristics and identified the characteristics which made the greatest contribution to explaining

variations in performance among officers. For white officers, the strongest explanatory variables, in order, were: average grade in police academy training courses, probationary evaluation, background investigator's rating, military disciplinary record, employment disciplinary record, level of education, number of appearances in civil court, age at time of application, civil service examination score, marksmanship, prior arrest history, and I.Q. For black officers, the strongest two predictors were recruit training score and probationary evaluation.[20] Background characteristics 11 to 17, for example, were found to be unrelated to later performance, in spite of an a priori expectation that they would be negatively related. The policy implication is, therefore, that these factors should not be considered in the selection process.

To determine the extent to which performance measures would be expected to vary with background characteristics, they calculated some typical values of performance measures from regression equations. For example, they found that a hypothetical candidate with three military or employment disciplinary incidents, the lowest possible recruit score, and two "unsatisfactory" marks on his probation report would be expected to have 8.5 times as many substantiated complaints of

misconduct as a man with no military or employment discipline record, a recruit score of 90, and no "unsatisfactory" marks on probation. A similar disparity in civilian complaints was found between older college graduates and younger high school graduates.[21]

Using the results from cross-tabulations and regression analysis, they developed profiles of the candidates who are most likely to embody the performance characteristics identified in the factor analysis. The profiles differed for white and black officers as shown in Table 2-1.

Three hundred and seventy-six out of 2,002 men appointed in 1957 (or 19 percent) had left the department by 1968. Voluntary and involuntary terminations could not be distinguished from the data. The peaks of the terminations tended to occur at two years (18 percent) and five years (12 percent) after appointment. The men who left the force were younger, if married had fewer children and debts, and were considerably better educated than those who remained.

> It is particularly noteworthy that one-third of the college-educated recruits in 1957 (8 out of 24) were found to have left the force by 1968, compared to 19 percent of the men who had not graduated from

Table 2-1. Cohen and Chaiken Profiles[22]

1. The men most likely to be a discipline problem for the department, with a large number of departmental charges and times sick, had the following characteristics:

Whites	Blacks
Young at appointment	High I. Q.
Non-college graduate	Few siblings
Excessive summonses and debts	Poor background rating
Employment disciplinary record	Low recruit score
Poor background rating	Poor probationary evaluation
Low recruit training score	Born in New York City
Poor probationary evaluation	

2. Officers most likely to incur charges of harassment (false arrest, protested summons, illegal search, illegal detention, etc.) had the following characteristics:

Whites	Blacks
No history of prior arrest	No history of prior arrest
History of civil court appearances	Employment disciplinary record
Military disciplinary record	

3. Officers most likely to incur civilian complaints had the following characteristics:

Whites	Blacks
Young at appointment	Low I. Q.
Non-college graduate	Many appearances in civil court
Military disciplinary record	Military disciplinary record

4. Officers most likely to advance through the civil service promotional system to the ranks of sergeant, lieutenant, and captain had the following characteristics:

Younger at appointment
High I. Q.
More likely to be single
College educated
Higher civil service scores
Higher recruit training scores
More likely to be an expert marksman

Table 2-1, continued

5. Officers most likely to advance to the rank of detective, which is not filled through civil service examinations, had the following characteristics:

   Older at appointment
   Average I. O.
   More likely to be married
   Not college educated
   Lower civil service score
   Lower recruit training scores
   Less likely to be an expert marksman

> college. . . The data suggest that many men who represent the Department's view of a desirable candidate, especially college-educated men, will have shorter tenure than the average officer unless the Department consciously attempts to determine the source of dissatisfaction among such officers and modifies its personnel policies accordingly.[23]

So our debate on the value of college education is clarified by empirical research, at least for this cohort of New York City officers. College graduates are more likely to leave the department, but those who remain are likely to perform better than their colleagues. "They advanced through preferential assignments and civil service promotions, they had low incidence of all types of misconduct except harassment, on which they were average, they had low sick time, and none of them had their

firearms removed for cause."[24] Twenty-four percent of the non-college graduates, but only 8 percent of the college graduates, had received a civilian complaint. On the other hand, Cohen and Chaiken also find that men of average intelligence and no college education do very well in such assignments as traffic duty.[25] Perhaps what police departments should be considering is substantial restructuring of career patterns and duties and salary structures. If college graduates, for example, were assigned to more stimulating, more difficult and more highly paid posts, their turnover might be lower and their contributions would be used where needed most.

Well executed empirical efforts such as this have a great deal to contribute, particularly to processing and evaluating the facts relating to police departments' own experiences with superior, average and inferior officers. The first problem facing a researcher is finding meaningful performance measures, even of the departments' own criteria. The New York City department is large enough to make a cohort study possible. Not many others across the country would be. Yet even Cohen and Chaiken had to restrict themselves to measures reflecting objective extremes of performance (termination, promotion, discipline) because other types of evaluation (supervisor's

ratings, for example) tend to be extremely poor and exhibit little real variance.

A sophisticated attempt to develop a consistent performance evaluation method utilizing paired-comparison tests of supervisors was made by Melany E. Baehr, John E. Furcon and Ernest C. Froemel of the Industrial Relations Center at the University of Chicago.[26] As predictors they used 17 different paper-and-pencil tests to form a psychological test battery as well as background variables. "The predictors having the strongest correlations, consistent among subjects, were elements of background and experience derived from a Personal History Index, a cooperativeness variable from a test of social insight, and temperament traits of self confidence and self-starting (positive) and demonstrativeness (negative)."[27]

> The tests show that, apart from an average level of intelligence, the most important personal attributes of successful patrolmen are all related to stability--stability stemming from personal self-confidence and the control of emotional impulses, stability in the maintenance of cooperative rather than hostile or competitive attitudes, and stability deriving from a resistance to stress and a realistic rather than a

subjective and feeling-oriented approach to life. Underlying this stability was the presence of early assumption of family responsibilities and involvement in family activities in the background of better patrolmen. All of these attributes are measured by the tests, and patrolmen who scored high on these attributes were, in general, those who were independently given high ratings for performance by their supervisors.[28]

Baehr, Furcon and Froemel demonstrated that there was an "acceptably" high and statistically significant relationship between the psychological test battery scores and independent measures of performance. They also demonstrated that the relationship improved substantially when white and black patrolmen were studied separately. "On the basis of these results, separate validations for different racial groups are recommended as a routine procedure in the selection of patrolmen."[29]

Further discussion of the general empirical literature here would be needlessly laborious. The best attempts have been telescoped and indicate the inherent possibilities of the approach.[30] One must remember, in evaluating all empirical

attempts, however promising, that their substantive value is critically dependent upon their chosen measure of performance. Internal departmental measures such as those cited here are extremely difficult to obtain and to work with. Even more difficult, yet perhaps more significant, are external measures of the community's evaluation of its policemen. Since community standards are virtually impossible to articulate even qualitatively, pessimism seems warranted about the possibility of developing performance measures and empirical techniques which reflect an external evaluation of the police by the community.

Secondly, these studies fail to deal with the argument that it is the environment encountered by the recruit in the field, his socialization by his peers, the implicit internal system of rewards and punishments he learns, that determines his performance, and not his personal characteristics. To study police success, one must study the institution and not the individuals. If this is true, then our observed relationships may be statistical artifacts which sidestep the primary influences.

Thirdly, in a country as heterogeneous as ours, can results from one jurisdiction be applied usefully in other jurisdictions or does each geographical entity have to invest in its own research? In spite of considerable political and technical

difficulties, an ambitious, careful, uniform study involving a sampling of cities should be launched. Preliminary indications from the existing literature, however, are pessimistic on transferability. Moreover, perhaps the job of policeman itself, with all its inherent contradictory elements, should be broken down functionally (i.e., traffic, juvenile, detective, high crime area, low crime area, etc.) to yield meaningful results.

EVIDENCE FOR OAKLAND

If transferring results from one jurisdiction to another is hazardous, what do we know about identifying the successful policeman in Oakland, California, the city of our primary concern? In fact, Oakland is a well-studied city. Ruth Levy, in early work in the field, studied 4,000 men from 1952 to 1962 from 14 California departments, including Oakland, to try to determine empirically the difference between men who stayed on their jobs, men who terminated as failures (fired, resignation requested, or ineligible for re-hire), and non-failure terminations.[31] She found that non-failure terminations were the best educated, had lived in their city for the shortest length of time, and had the highest total number of residences. The men still in service had lived in their city the longest periods and had the lowest number of total residences.

In a later study of the same 14 departments, she dealt with 1,765 officers hired from November 1, 1968, through October 31, 1969, and had access to all pre-employment information available to the departments about these men at the time they were hired.[32] She formed discriminant equations using 62 variables and 1,599 cases. The following table shows those pre-employment factors which occurred most frequently in the discriminant equations:[33]

Table 2-2. Levy Profiles

Current	Failure	Non-failure
Many years in Calif.	Few years in Calif.	Few years in Calif.
Less education	Many jobs	More education
Has been in Navy	Tatooed	Navy
Not a sworn police officer	Sworn police officer	Older
Not divorced	Discharged from job	

She then added to the empirically derived variables a set of "logically derived variables" stemming from her own interpretation of psychological theory.[34] Combining the logically derived variables and the empirically derived variables in a second discriminant equation, she reached the following results for the logically derived variables:[35]

Table 2-3. Levy Profiles

Current	Failure	Non-failure
Born in city	Youngest sibling	Oldest sibling
No negative recommendations	Negative recommendations	No negative recommendations
No bad application	Bad application	Juvenile penals
No broken home	Broken home	No adult penals
No low military rank	Low military rank	Jr. after name
Not 21 or 22	21 or 22 years old	Many residences
No "Service to Mankind"	Had GED	Father is sworn peace officer
Not failed other p. d. exams	"Service to Mankind"	
Few residences	Failed other p. d. exams	
	Parent dead	
	Dishonors	
	Has child at young age	

Levy's work has been challenged by James M. Newman, Oakland Personnel Director, and William E. Rogin, who argue that the predictive ability of Levy's study has not been validated and demonstrate that for Oakland alone the predictions are no improvement over chance.[36] They also question her classification procedures and her emphasis on avoiding failures without considering the cost of turning away good candidates in the attempt. I was more disturbed by Levy's failure to fully divulge her models, analytical techniques, and the statistical significance of her results. I also found her "logically derived variables" intuitively unappealing and the suggestion that such factors as sibling position or tatoos be used for selection as bizarre and

frightening. Nevertheless, the effort is indicative of research possibilities and pitfalls, and relevant to Oakland.

More compelling, from our point of view, and of utmost importance in interpreting our own work, is the information on tenure processed by the Oakland Civil Service staff itself. The facts in Oakland reaffirm the disturbing evidence that the most highly sought individuals, college graduates, are also the most likely to resign. The candidates attracted from out-of-state, through national recruitment efforts on the assumptions of a national professional labor market, are also most likely to resign.

The distribution of the 588 police officers appointed to the Oakland Police Department in the 9 years between August 1, 1962, and August 1, 1971, by educational level, follows:[37]

Table 2-4. Distribution of Oakland police officers by educational level, August, 1962, to August, 1971

	Number	Percent
High school graduates	218	37.07
Less than 2 years college	176	29.93
2 or more years college	98	16.67
College graduates	96	16.33
	588	100.00

Their distribution by place of residence is:

Table 2-5. Distribution of Oakland police officers by residence, August, 1962, to August, 1971

	Number	Percent
Oakland area	421	71.60
Other California	57	9.70
Out-of-state	110	18.70
	588	100.00

The turnover data indicate that for all appointees:

Table 2-6. Turnover of Oakland police officers, August, 1962, to August, 1971

	Number	Percent
Remain on force	419	71.25
Resigned	144	24.48
Fired	25	4.25
	588	99.98

Breaking down the turnover data by place of residence reveals:

Table 2-7. Turnover of Oakland police officers by residence, August, 1962, to August, 1971

	Oakland		Other Calif.		Out-of-state	
	No.	%	No.	%	No.	%
Remain	318	75.5	44	77.2	57	51.8
Resigned	85	20.2	11	19.3	48	43.6
Fired	18	4.2	2	3.5	5	4.0
	421	99.9	57	100.0	110	99.4

Breaking down the turnover data by educational level reveals:

Table 2-8. Turnover of Oakland police officers by educational level, August, 1962, to August, 1971

	H.S. Grad		<2 Years College		+2 Years College		College Grad	
	No.	%	No.	%	No.	%	No.	%
Remain	169	77.52	121	68.75	78	79.59	51	53.12
Resigned	36	16.51	45	25.56	19	19.38	44	45.83
Fired	13	5.96	10	5.68	1	1.02	1	1.04
	218	99.99	176	99.99	98	99.99	96	99.99

Oakland actually traced the positions taken by the 50 college graduates who left the department between 1956 and 1971. Sixty-eight percent of them accepted their next employment within the field of criminal justice. This finding tempers the serious implications of the high resignation rate and indicates that, in fact, Oakland was providing specific training for higher law enforcement agencies in many cases. Whether this is a rational policy for Oakland to follow or not depends on the trade-off between the derivative higher personnel costs and the benefits received from high quality service, even for a few years. There may also be a public relations or prestige gain from providing men to other agencies.[38]

Table 2-9. Positions taken by college graduates who left Oakland police department, 1956 to 1971

Next Position Taken	Number	Percent	Cumulative Percent
Federal law enforcement agencies	12	24	24
State law enforcement agencies	11	22	46
Other local law enforcement agencies	11	22	68
Indirectly related to law enforcement (law or graduate school, military officers)	8	16	84
Other occupations	7	14	98
Fired	1	2	100
	50		

No independent attempt will be made in this study to formulate more sophisticated measures of successful performance. Such an effort would involve the analytical skills of political science and psychology and would take us well beyond the economic focus of this study. Moreover, we have benefited extensively from the considerable interdisciplinary research activity now taking place in Oakland and have been able to absorb and include its results where relevant.[39]

Among the most interesting and original efforts, although the most impressionistic, is the sensitive and provocative work of political scientist William K. Muir.[40] He views policemen

as political beings, designs a system of behavioral classification, ranks a small sample of men through in-depth interviews, and analyzes the results. The policeman is a political being because, in the critical part of his job, he must influence people to do what they do not want to do, and his influence is through his authority, his threat to harm. A good policeman "must have the moral skills to reconcile these sometimes necessary political practices with his previously felt moral obligations to be reasonable, kind, empathetic, and creative;" he "has to have the moral skills to be mean opportunistically without becoming mean compulsively."[41] "At the same time he must have the philosopher's itch--a correct sense of place, time and purpose."[42]

A "professional" policeman in Muir's scheme would have both moral skills and a philosophical itch. This is the ideal policeman. The "mellow" would fall short because he is a philosopher but not a moralist, not dominant enough; the "legalist" would fall short because he is a moralist but not a philosopher; the "reluctant" is neither; and the "impressionable" has the potential to be a "professional" but is still to young and inexperienced. Muir then uses his rankings of policemen in his theoretical schema to assess the validity of the department's existing selection tests and possible alternative selection de-

vices and to inquire into the effect of police work on personal characteristics. Of particular interest to us, he finds that 100 percent of the "professionals" and 100 percent of the "impressionables" have completed at least one year of college, as opposed to 25 percent of the "mellows," 43 percent of the "legalists," and 0 percent of the "reluctants."[43] Again an indication that some college may make a difference in performance while a man remains on a force.

We have finished, for our purposes, our brief survey of the policeman's job, the controversies surrounding it, and the efforts to determine the distinguishing characteristics of successes and failures. Hopefully, one has emerged with some understanding of the critical importance of selection criteria, the ambiguity surrounding them, and the difficulty of empirically validating and interpreting them. We will turn now to the economic analysis of police selection, first to theoretical models, then to empirical results.

CHAPTER 2

FOOTNOTES

1. National Commission on Law Observance and Enforcement, "Report on the Police," (Washington, D. C.: U. S. Government Printing Office, 1931), p. 19.

2. President's Commission on Law Enforcement and Administration of Justice, The Challenge of Crime in a Free Society, (Washington, D. C.: U. S. Government Printing Office, February, 1967).

3. See J. Edgar Hoover, "Should You Go Into Law Enforcement?" (New York: New York Life Insurance, 1961), p. 7. An identical description is given in the Encyclopedia of Careers and Vocational Guidance, Revised Edition, Volume II, (Chicago: J. G. Ferguson).

4. Jerome Skolnick argues convincingly in Justice Without Trial (New York: Wiley, 1967) that the coupling of danger and authority must combine to frustrate the rule of law, that they should never be permitted to coexist. Danger typically yields self-defensive conduct, conduct that must strain to be impulsive because danger arouses fear and anxiety so easily. Authority then becomes a resource to reduce perceived threats rather than a series of reflective judgments arrived at calmly. As a result, procedural requirements become secondary in the face of circumstances seen as threatening.

5. For example, a 1966 study of the Syracuse, New York, Police Department found the following distribution of activities, as cited in James O. Wilson, Varieties of Police Behavior (Cambridge: Harvard University Press, 1968), p. 18:

Citizen Complaints: Syracuse Police Department

Type of Complaint	Percent of Calls
Information gathering (book and check, get a report, inspect, question)	22.1

Service (accidents, illnesses, ambulance, animals, assist person, drunk person, escort vehicle, fire, power line, tree down, lost or found person or property, property damage)	37.5
Order maintenance (gang disturbance, family trouble, assault, fight, investigation, neighbor trouble)	30.1
Law enforcement (burglary in process, check a car, open door or window, prowler, make an arrest)	10.3

See also Melaney E. Baehr, et al., Psychological Assessment of Patrolman Qualifications in Relation to Field Performance (Washington, D. C.: U. S. Government Printing Office, November, 1968), pp. 9-11.

6. See Howard Vollmer and Donald L. Mills, Professionalization (Englewood Cliffs: Prentice Hall, 1966); Ernest Greenwood, "Attributes of a Profession," in Sigmund Nosow and William H. Form, Man, Work and Society (New York: Basic Books, 1962); Harold L. Wilensky, "Varieties of Work Experience," in Henry Borow, Man in a World at Work (Boston: Houghton Mifflin, 1964), pp. 125-154: and Joseph W. Garbarino, "Professional Negotiations in Education," Industrial Relations, Vol. 7, No. 2, February, 1968, pp. 93-101.

7. See Jerome Skolnick, Justice Without Trial, pp. 235-239; Emile Durkheim, Professional Ethics and Civic Morals (Glencoe: The Free Press, 1958), p. 29; Max Rheinstein, Max Weber on Law in Economy and Society (Cambridge: Harvard University Press, 1954), p. 350.

8. This list draws heavily on Arthur Niederhoffer, Behind the Shield (Garden City: Doubleday, 1967), pp. 18-20; President's Commission on Law Enforcement and Administration of Justice, Task Force Report: The Police, and Challenge of Crime in a Free Society, passim; and State of California, Commission on Peace Officer Standards and Training, California Law Enforcement Recruitment Program, pp. 1-9. California police departments, particularly the Oakland Police Department, are often proudly cited as in the forefront of professionalization.

9. Arthur Niederhoffer, op. cit., p. 131.

10. James Q. Wilson, op. cit., pp. 29-30. See also Hervey A. Juris and Peter Feuille, Police Unionism (Lexington, Mass.: D. C. Heath, 1973), pp. 103-119 for sensitive treatment of this issue.

11. President's Commission on Law Enforcement and Administration of Justice, Task Force Report: The Police, pp. 167-175.

12. New York Times, Wednesday, August 15, 1973.

13. New York Times, Sunday, December 3, 1973.

14. President's Commission on Law Enforcement and Administration of Justice, Task Force Report: The Police, p. 168.

15. Oakland Civil Service Office.

16. See President's Commission on Law Enforcement and Administration of Justice, Task Force Report: The Police, pp. 167-175 for statistics confirming the general accuracy of the examples cited here.

17. See, for example, Gene E. Carte, "Police Representation and the Dilemma of Recruitment," Issues in Criminology, Vol. 6, No. 1, Winter, 1971, pp. 85-95.

18. Bernard Cohen and Jan M. Chaiken, Police Background Characteristics and Performance (New York: New York City Rand Institute, August, 1972, p. ix.

19. Ibid., pp. xi-xviii.

20. Ibid., p. xviii. The statistical technique used here was stepwise multiple linear regression, in which the most powerful background factor enters the regression equation first and explains as much of the variance of the performance measure as it can. This is followed by the second strongest independent factor, and so forth. Whenever a new factor is introduced, each of the preceding factors is held constant

to avoid duplication. The computer program utilized for this analysis (Statistical Package for the Social Sciences) permits identification, by F test, of the statistical significance of the reduction in variance produced by each independent variable. Only those predictor variables whose contribution weresignificantly different from zero at the .05 level were retained. Thus, the regression equation for the performance variable Y takes the form:

$$Y = a + b_1X_1 + b_2X_2 + \ldots\ldots\ b_kX_k$$

where k is the number of predictor variables included, and the particular variables included varies with the performance measure. See ibid., p. 121.

21. Ibid., pp. xviii-xix.

22. Ibid., pp. xix-xxi.

23. Ibid., p. x.

24. Ibid., p. xvii.

25. Ibid., p. 157.

26. Melaney E. Baehr, John E. Furcon, Ernest C. Froemel, Psychological Assessment of Patrolman Qualifications in Relation to Field Performance (Washington, D. C.: U. S. Government Printing Office, November 5, 1968).

27. Bernard Cohen and Jan M. Chaiken, op. cit., p. 10.

28. National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U. S. Department of Justice, "Predicting Patrolman Performance," (a summary blurb of the Baehr et al. study).

29. Baehr et al., op. cit., p. 183.

30. The reader interested in pursuing the literature further is referred to the following additional studies: Nick J. Colarelli and Saul M. Siegel, "A Method of Police Personnel Selection," The Journal of Criminal Law, Criminology, and Police Science, Vol. 55, 1964, pp. 287-289; Robert J.

McDevit, "Situational Tests in Metropolitan Police Selection," The Journal of Criminal Law, Criminology, and Police Science, Vol. 57, 1966, pp. 99-106: Gilmore Spencer and Robert Nichols, "A Study of Chicago Police Recruits: Validation of Selection Procedures," The Police Chief, Vol. 38, No. 6, June, 1971, pp. 50-55; Jewel E. Mullineaux, "An Evaluation of Predictors Used to Select Patrolmen," Public Personnel Review, Vol. 16, pp. 84-86; Robert B. Mills, Robert J. McDevitt, and Sandra Tonkin, "Situational Tests in Metropolitan Police Recruit Selection," The Journal of Criminal Law, Criminology, and Police Science, Vol. 57, 1966, pp. 99-104; Deborah Ann Tent and Terry Eisenberg, "The Selection and Promotion of Police Officers: A Selected Review of Recent Literature," Police Chief, Vol. 39, No. 2, February 1972, pp. 20-29: J. D. Matarazzo, "Characteristics of Successful Policeman and Fireman Applicants," Journal of Applied Psychology, Vol. 48, 1964, pp. 123-133; J. T. Flynn and M. Peterson, "The Use of Regression Analysis in Police Patrolman Selection," Journal of Criminal Law, Criminology, and Police Science, Vol. 63, No. 4, 1972, pp. 564-569; John A. McAllister, "A Study of Prediction of Measurement of Police Performance," Police, Vol. 14, 1970, pp. 58-64; Robert W. Balch, "The Police Personality: Fact or Fiction," Journal of Criminal Law, Criminology, and Police Science, 1972, p. 106; Irving B. Geller, "Higher Education and Policemen," Journal of Criminal Law, Criminology, and Police Science, 1972, pp. 396-401; and Robert Hogan, "A Study of Police Effectiveness," Experimental Publication System, American Psychological Association, Washington, D. C., June 1970.

31. Ruth J. Levy, "Predicting Police Failures," Journal of Criminal Law, Criminology, and Police Science, 1967, Vol. 58, No. 2.

32. Ruth J. Levy, "Investigation of a Method for the Identification of the High-Risk Police Applicant," Can High Risk Police Applicants Be Identified?, Institute for Local Self Government, Berkeley, California, July 1971.

33. Ibid., p. 35. A "current" here is defined as a man with at least seven years of service.

34. For example, a first-born child, as compared with later-borns, tends to identify most particularly with authority, discipline, and parental prohibitions and moral values; exercises dominance and uses more physical power; has a greater tendency to conform when under group pressure and stress; and, therefore, other things equal, would be less likely to fail than a later-born child.

35. Ibid., p. 35.

36. James M. Newman, William E. Rogin, William K. Hunter, Shanti Vora, "Investigation of a Method for Identification of the High-Risk Police Applicant: An Analysis and Interpretation Based on Available Data," Can High Risk Police Applicants Be Identified?, Institute for Local Self Government, Berkeley, California, July, 1971.

37. Data supplied by Lamar M. Vaughn of the Oakland Civil Service Department.

38. Lamar M. Vaughn and Allen Tenenbaum, "Oakland's Recruitment and Selection Methods: A Historical Overview," James M. Newman, Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection, Berkeley, California, Education/Research, Inc., February, 1972.

39. See also: Robert Hogan, "Successful Oakland Police: A Personological Profile;" Christine M. Miller, "A Study of the MMPI as a Selection Device for the Oakland Police Department:" Eric P. Sanders, "Oakland Police Sample: A Descriptive Psychographic Study;" and William K. Hunter and Thomas J. Culligan, "An Analysis of Factors to Predict Work Performance of Oakland Police Officers," all in James M. Newman, Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection, op. cit.

40. William K. Muir, "Personal Characteristics that Contribute to Good Police Work," in James M. Newman, Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection, op. cit.

41. Ibid., p. vii-7.

42. Ibid., p. vii-7. To explain Muir's context more fully, he sees that the policeman can give little positive inducement to the citizen to compensate him for his pains in desisting in an antisocial act, giving humiliating or inculpatory information, going to jail. The policeman recurrently exercises the power to harm to extort cooperation. In this, he is a man of politics.

> In politics, where threat rather than exchange is the mode of behavior, the common sense of the everyday, nonpolitical world does not always obtain: paradoxes occur, causing conventionally conceived "good" actions to serve counterproductive ends and conventionally conceived "bad" means to serve socially essential and desirable ends. A politician's irrationality, nastiness, detachment and disregard (or reputation for these qualities) may be the exclusive means to deter the irrationality, nastiness, detachment and disregard of others under some circumstances. Likewise for a good policeman; and a good policeman must have the moral skills to reconcile these sometimes necessary political practices with his previously felt moral obligations to be reasonable, kind, empathetic, and creative. He frequently encounters conflicting moral imperatives, and he must reconcile them while maintaining a complex sense of "right" and "wrong" without a loss of self esteem or belief in civility. A good policeman has to have the moral skills to be mean opportunistically without becoming mean compulsively.
>
> At the same time he must have the philosopher's itch--a "correct" sense of place, time and purpose. He must develop an accurate perception of the motives of mankind, an awareness of the trends of past and future, and a standard of success in keeping within both the limits of his individual capacities and his impulse for public service. This social, historical, and ethical perspective compensated for the unique distortions of information which befall a man in power--distortions resulting from a steady diet of life's pathologies, from the organizational necessities of maintaining intensely

high morals (to overcome fear, hardship, and frustration), and from the authority of office (which scares the timid citizen and attracts the obsequious one).

43. Ibid., pp. vii-81.

CHAPTER 3

THE THEORETICAL FRAMEWORK

How well is the labor market performing in equilibrating the demand for policemen by police departments with the supply offered by individuals? How can the problem of persistent "shortages" of "qualified" applicants be explained? Are wages too low, are qualifications too high, or is the problem even more complicated? What role is played by the institutional adjustment mechanisms in the labor market, the recruitment, selection and training processes? Is the market distorted by non-economic factors? Is the market characterized by static monopsony, by dynamic monopsony, and by problems of imperfect and uncertain information? This chapter reviews and assesses the contributions of economic reasoning to understanding the problems posed by the labor market for policemen.

THE SUPPLY OF POTENTIAL POLICEMEN

Calculation of Present Value of Expected Lifetime Earnings

An individual considering becoming a policeman may compare the present value of his expected lifetime earnings as a policeman with the present value of his expected lifetime earnings in his next best alternative, assuming the psychic

components of the jobs are equal. If he becomes a policeman, he may expect to receive a stream of earnings, WP_1, WP_2... WP_n over periods 1, 2, ... n, respectively. If he does not become a policeman, his best alternative is a stream of earnings WA_1, WA_2... WA_n. The returns to becoming a policeman would be the present value of the sum over periods 1 to n of police earnings; the returns to not becoming a policeman would be the present value of the sum of alternative earnings. In deciding whether or not to become a policeman, the individual would compare the expected present value of police work

$$1) \quad VP = \sum_{j=1}^{n} \frac{WP_j}{(1 + r)^j}$$

with the expected present value of his next best alternative

$$2) \quad VA = \sum_{j=1}^{n} \frac{WA_j}{(1 + r)^j}$$

If $VP > VA$, he would choose VP; if $VP < VA$, he would choose VA; if $VP = VA$, he would be indifferent between them.[1]

Since we are concerned here with expected lifetime earnings, a term may be added to VP including the expected earnings in future jobs should he quit or retire from the force. His future job options should be improved because of his police experience. He would also be concerned with evaluating whether

his expected lifetime as a policeman would be shorter than in alternative occupations.

Age-Earnings Profile

Occupations may differ not only in current earnings, but also in the temporal distribution of the expected earnings or the age-earnings profile. For example, one occupation may have a long training period with low or even negative earnings (direct and opportunity costs of schooling) followed by increasing earnings which peak at age 45 to 55 and then decline dramatically. Another occupation may have no training period and earnings which remain level throughout the working life. Present earnings are worth more than future earnings; the interest rate is positive. Therefore, to determine the relative pecuniary attractiveness of the two occupations a calculation must be made which discounts for futurity. It is the present value of the net returns for each occupation that must be compared. In making this calculation one would also include the relative physical exertion and other factors which might affect the expected length of the working life, the seasonality or cyclical sensitivity of the job, the length and direct cost of the training period, the direct occupational expenses required during the working life, the probability of unemployment, and the effect of the tax structure. Different

individuals, given perfect information and identical tastes, will make the same evaluation of these factors. People prefer higher net returns to lower, other things equal. A relative wage rate which would make the capital values in two occupations equal can theoretically be determined.

The police job appears to have a flat age-earnings profile, similar to that of blue-collar workers, but very different from that of professionals. Training is done on-the-job. An Oakland Police Department recruit in 1970 earned $926 per month during his first year, while being trained, $960 per month during his second year, $994 his third year, and $1,025 his fourth year. After his fourth year, however, he would receive only general civil service pay increases until he retired, unless he were promoted to sergeant. Promotional opportunities are limited to those who can pass civil service examinations. Seventy-five percent of the sworn personnel in Oakland are patrolmen, 15 percent are sergeants, and 10 percent are in the ranks of inspector, lieutenant, captain or deputy chief. Discharge from the force is for cause only, so the policeman is protected from swings of cyclical unemployment. The probability that he would continue to earn his fourth year salary plus regular civil service increments until his retirement (half-pay after 25 years

of service or 20 years at age 55) is high. Also included in the actuarial comparison would be the value of the fringe benefits in the police job and the alternative, the possibility of holding a second job concurrently, and the probability of death or injury on the job.

Shape of Supply Curve

If there were perfect competition, perfect and costless mobility and information, and identical tastes and abilities among individuals, everyone would evaluate identically the relative merits of different occupations based on an actuarial assessment, and there would be some relative wage at which everyone would be indifferent between becoming a policeman or doing anything else. The supply curve to an occupation would be horizontal. It is the existence of differences among individuals in tastes, abilities and information which leads to differences in their evaluations of the relative wage rates which would make two occupations equally attractive. The supply curve to a particular occupation, therefore, will be positively sloped.

Uncertainty

We turn now to factors which will be evaluated differently by different people, thereby imparting a slope to the supply

curve. The individual decision maker will want to know not only the present value of expected net returns, but also the probability distribution of present values. Two occupations may be equally attractive actuarially, but one may offer a particular return with reasonable certainty and little probability of variation (i. e., the police job cited above) and the other may offer a small chance of a very large return and a large chance of a small return (i. e., baseball player). Individuals will differ in their tastes for uncertainty, and, therefore, will assess its relative merits differently.

Tastes

The most troublesome component of the present value of expected lifetime earnings are tastes for particular jobs. Tastes can be expected to vary greatly among people and are difficult or impossible to enumerate or measure. When we define the present value of expected lifetime earnings to include only actuarial earnings, we can also define a coefficient measuring relative preference for police work, d. Then an individual would choose to become a policeman if $VP > (1 + d)\ VA$, where

VP = present value of expected lifetime earnings as a policeman

VA = present value of expected lifetime earnings in alternative occupation

d = coefficient measuring the taste or distaste for police work

That is, if d is not zero, an individual would not be indifferent between police work (P) and the alternative (A) if the present value of expected lifetime earnings in P just equaled those in A, but would require some compensating differential. If, for example, he receives more psychic income in A, d is greater than O, and he would become a policeman only if he receives earnings in P greater by at least d(VA) than those he could receive in his best alternative A. In the extreme case of a perfectly inelastic supply curve, some people would prefer any alternative to becoming a policeman, and some people would prefer becoming a policeman to any alternative, regardless of the relative pecuniary returns.

If there were no differences in tastes and abilities among individuals, in the perfectly competitive world occupational supply curves would be horizontal or infinitely elastic and all wage differences would be equalizing the attractiveness of different occupations. That is, people would be indifferent as to which occupation they pursued. There would thus be no

"rents" or payments in excess of opportunity costs to any individual. If supply curves were completely inelastic and people chose jobs solely on nonpecuniary preferences in which there were wide differences, relative wages would be determined by demand, given relative supplies, and all wages would be "rents." In the general case of a positively sloping supply curve, returns will be equalizing only at the margin. Some individuals will be receiving a rent in the sense that they would be willing to work at their occupation at a lower total return.

Noncompeting groups

The existence of "noncompeting groups" would also give rise to nonequalizing wage differentials. Noncompeting groups are formed by barriers to entry to certain occupations. These restrictions on free choice may arise from deliberate restrictions on entry such as immigration laws, licensing, or trade union power, from geographic immobilities, from differences in ability,[2] from socio-economic stratification and from racial discrimination.

The height, weight, and visual acuity standards of police departments create a unique sort of noncompeting group peculiar to police. William F. Danielson, Director of Personnel, City of Berkeley, California, estimates that of 1,031,503 California

men between the ages of 21 and 30 in 1966, 477,000 were 5'9" or taller, 238,500 were also high school graduates, and 150,000 of these could meet other police physical, psychiatric, background, and mental aptitude standards.[3] The political controversies generated by these standards, and their increasingly frequent revision, demonstrates public recognition of the importance of these barriers to entry in the police labor market.

Nonequalizing transitional wage differentials between occupations may also be expected from the fact that the supply of a particular type of labor is much less elastic in the short run than in the long run, so any change in demand would have a much larger effect initially than ultimately. Therefore, what is defined as an occupational wage differential depends partly on the time period and the training for the occupation being considered.

THE SUPPLY TO THE POLICE EMPLOYER

In a perfectly competitive world, the supply curve of a particular kind of labor to any one employer would be infinitely elastic or horizontal. An individual employer would be too small to exercise independent influence on the wage, which is set in the market at the intersection of the sum of all firms'

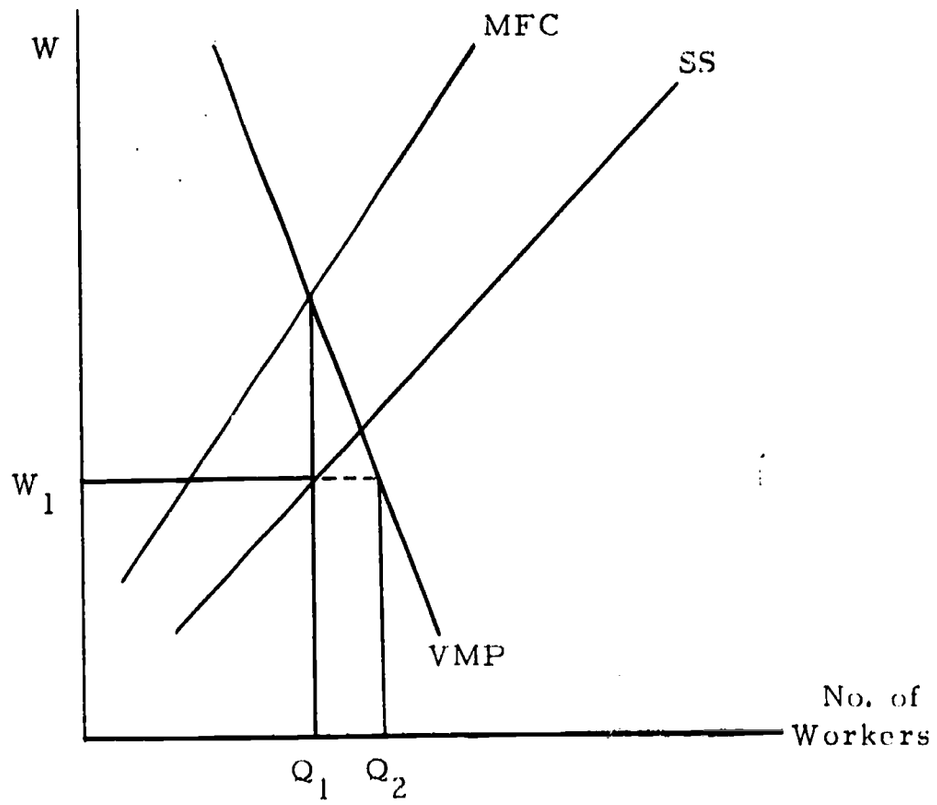
demand curves for labor of a particular kind and the sum of all individual supply curves of labor of that kind. The employer can hire as many workers as he wants at the market wage rate; how many he hires is determined by his demand or value of marginal product (VMP) curve for that labor. There should be no persistent job vacancies, no recruiting activity by firms, no wage discrimination, and no information costs. In a perfect market, all potential bids and offers are known at zero cost to every other person. Characteristics of every good need to be known perfectly at zero cost.[4]

However, in the real world an employer will often have some control over his wage. He will face an upward sloping supply curve if 1) many small firms demanding the same type of labor are distributed over a wide geographic area; 2) workers prefer particular jobs and places of work and/or residence; 3) information is imperfect and costs must be incurred to inform workers of the existence of vacancies in a particular firm. These conditions imply that to expand employment a firm must increase wages or incur higher labor costs. The supply curve facing him is not perfectly elastic. He has some degree of monopsony power.

The existence of monopsony implies job vacancies at

equilibrium. The monopsonistic buyer will hire the number of workers indicated by the intersection of his VMP curve with his marginal factor cost (MFC) curve, which will be higher than the supply curve because he will have to pay a higher wage not only to the additional worker attracted, but also to all other workers in his employ (assuming that he cannot discriminate among workers). Thus, in the diagram below, he will hire Q_1 workers at wage W_1, and will have vacancies at that wage equal to $Q_2 - Q_1$.

Figure 3-1



Therefore, when persistent shortages appear in the real world, monopsony is often sought as the culprit. In a competitive framework, wages in a shortage occupation should rise relative to wages in other occupations, thereby attracting a greater number of workers and, ultimately, eliminating the shortage.

Indeed, David Blank and George Stigler, in their study of the market for engineers, conclude that a "shortage exists when the number of workers available (the supply) increases less rapidly than the number demanded at the salaries paid in the recent past. Then salaries will increase, and activities once performed by engineers must now be performed by a class of worker less well trained and less expensive."[5] In their empirical work, they find no evidence of an increase in relative earnings of engineers and no evidence of monopsony in the market to distort the functioning of the wage adjustment mechanism. They conclude, therefore, that there had been no shortage of engineers.

Also, in a 1950's study of the market for engineers, Kenneth J. Arrow and William M. Capron emphasize the role of imperfect information and begin to formulate a simple dynamic explanation of shortages, foreshadowing the recent more rigorous work of Armen A. Alchian, Dale T. Mortensen,

Donald F. Gordon and Allan Hynes.[6] Arrow and Capron explain shortages--"that is, a situation in which there are unfilled vacancies in positions where salaries are the same as those being currently paid in others of the same type and quality"[7]--by postulating a lag in the response of salaries to demand curve shifts, a dynamic shortage. The magnitude of the dynamic shortage depends upon the rate of increase in demand, the reaction speed in the market, and the elasticities of supply and demand. The lag arises from 1) the time it takes the firm to recognize the existence of the shortage at the current salary level; 2) the time it takes to decide upon the need for higher salaries and the number to be hired at such salaries; and 3) the time it takes employees to realize and react to the new alternatives available or the firm to adjust the salaries of present employees. If there are continuing increases in demand, then there will be a chronic shortage.

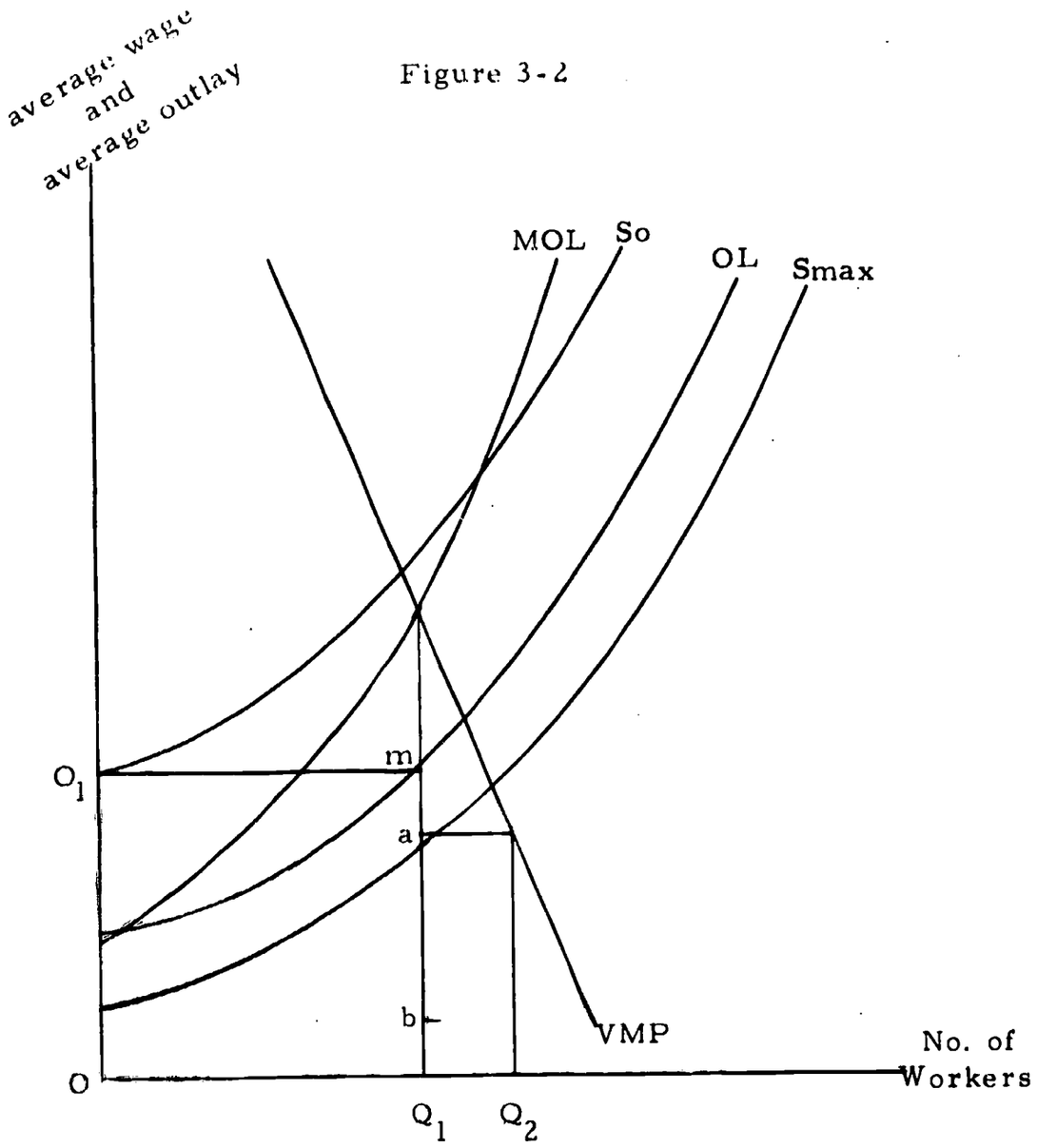
THE DEVINE MODEL

A detailed treatment of the shortage question, which combines the roles of monopsony and imperfect information, is developed by Eugene J Devine[8] and applied specifically to three categories of local government employees: teachers, nurses

and policemen. Devine argues that local governments experience persistent shortages in these categories, though not for other workers, because they are sufficiently large employers of teachers, nurses and policemen to be monopsonists in the labor market, while they are competitive employers for other job categories. Moreover, a monopsonist who is unable to engage in wage discrimination will experience job vacancies in equilibrium, and will neither raise wages nor increase recruitment expenditures sufficiently to eliminate them.

With imperfect information, a monopsonist's labor supply curve will shift downward and to the right as he increases his recruitment expenses. Curve So in Figure 3-2, below, shows the number of workers the firm may secure at various wage rates if it did not engage in any recruitment activity. The Smax curve indicates the number of persons willing to work for this firm if they knew about its wages and employment conditions, i.e., if the firm were willing to incur whatever costs were necessary to inform these workers. OL is a "minimum average outlay curve" showing the sum of the average wages and average recruitment costs which is the least-cost combination for securing the number of workers indicated on the horizontal axis. The MOL curve is the marginal outlay curve

Figure 3-2



Devine shows that the combination of wages and recruitment costs which is least-cost is unique for each quantity of workers. The average wage and average recruitment cost associated with each number of workers is determined by an isoquant-iso-average outlay analysis from which is derived the unique least-cost combination of wages and recruitment costs at which each

quantity of workers could be obtained. The OL curve will lie somewhere within the limits set by the So and Smax curves. If it pays the firm to recruit in order to secure any given number of workers such as Q_1, the average total outlay must be less than the average wage indicated by the So curve, or it would be equally or less costly to secure Q_1 workers without recruiting. On the other hand, no amount of recruitment expenditure would enable the firm to secure Q_1 workers at a wage lower than that indicated by the Smax curve, and some recruitment cost would be necessary to get Q_1 workers at that wage. The lowest average outlay at which Q_1 workers could be secured is O_1, as indicated by the OL curve. Suppose this outlay consists of the sum of some average wage Q_1-a and some average recruitment expenditure O_1-b (equals am). The monopsonist would be willing to hire Q_2-Q_1 additional workers at the equilibrium wage rate, but he would be unwilling to pay a higher wage or to incur additional recruitment costs to attract them. The solution presented in Figure 3-2 is consistent, therefore, with the existence of job vacancies.

Devine then marshalls descriptive evidence for the city and county of Los Angeles to persuade the reader of the applicability of his model to policemen, nurses and teachers. The

problems deriving from monopsony are intensified for police departments, for example, by the prevalence of institutional constraints mandating parity between policemen and firemen wages. Therefore, any increases in wages to attract additional policemen would have to be paid not only to all policemen already employed, but also to all firemen. The existence of queues of qualified labor for firemen's jobs and shortages of qualified labor for police jobs shows, moreover, that workers are not indifferent between the two jobs at the same wages, and adds to the difficulty of police recruiting.

David Lewin, in his complementary work on the parity question, confirms Devine's analysis of its distorting role in the police labor market.[9] "A policy of wage parity contributes to these vacancy and recruitment problems by retarding the growth of police salaries."[10] Lewin takes no position on the monopsony explanation, but does recommend abolishing parity.

Devine's analysis should be applicable to other types of personnel costs which may be substituted for higher wages to increase labor supply, such as improved working conditions and provision of on-the-job training. Yet, Devine does not deal with the alternative implication of a monopsony analysis developed earlier by Martin Bronfenbrenner, who points out

that an employer may choose not to exercise fully his monopsony power in order to be more selective among applicants.[11] At the monopsony wage, an employer may have to hire "nearly all minimally qualified workers, regardless of any special standards of skill, experience, education, etc. which the firm might wish to impose, and regardless also of any personnel-office prejudices regarding age, sex, race, nationality, religion, and so on."[12] At a higher wage, the employer will be able to pick and choose among applicants, applying whatever hiring standards he likes, and leaving a rejected fringe of unemployed workers presumably composed of those least desirable to him.

Since the police shortage is a function not of insufficient supply offered but of insufficient supply deemed qualified, that is, selected, this analysis is critically important to us. Perhaps it was ignored because it implies queues of unselected workers, while Devine is trying to explain vacancies. Theoretically, the two analyses can be reconciled by arguing that a wage less than the competitive wage but greater than the monopsony wage will be set, therefore allowing room both for selectivity and vacancies.

The apparent theoretical paradox of the simultaneous existence of vacancies and queues under monopsony, combined

with the descriptive paradox of increasing rather than decreasing hiring standards in the context of shortages, should serve as an alarm that perhaps the problem is more complicated than a simple monopsony theory allows. It is to explore one element of this complexity that this thesis becomes involved in analyzing further the selection process for policemen. Before we turn to that, however, we would like to deal with some further theoretical complexities of public employee wage determination, a model that begins to deal theoretically with the complexities, and, finally, some general empirical evidence.

THE PROBLEM OF PUBLIC SECTOR DECISION-MAKING

There is another problem with Devine's framework. Can conventional economic analysis, with its profit-maximizing basis, be applied to decision-making in the public sector, where profit-maximization is clearly inappropriate? Public agencies may be maximizing service subject to fixed budgetary constraints, engaged in incremental budgetary exercises, engaged in complex political bargaining or in some combination of these.[13] How is the derived demand for labor to be defined in a decision-making context more complex than profit-maximization? The demand curve for labor may have to be

inferred indirectly through "voter expressed demands for government services and directly through political bargaining between governments and employee groups" rather than through the traditional marginal revenue product curve.[14] A more explicit consideration of the motivation of public managers, public workers and political processes is needed.

Devine gets around the subject by arguing that without getting into an extended discussion of the meaning of the value of the marginal product curve to a government agency whose output is not priced and sold on a market and who is not profit-maximizing, it is reasonable to assume that the VMP curve would be negatively sloped. He postulates that the VMP curve would show the value of the marginal product of additional workers to the utility-maximizing administrator of the agency. The administrator's utility function would contain such suggested components as the size of the agency's budget, the number of employees supervised, his own salary, prestige, power, etc. Nothing is said about the position of the VMP curve, or its relation to a curve showing marginal social benefit, but it is postulated that the curve has a negative slope because 1) the administrator does face a budget constraint: he is competing with other government agencies for limited resources, and the

public sector is competing with the private sector; 2) he is not immune to the consequences of his actions, and marginal social benefits do decline as the agency expands its staff and activities; and 3) the evidence provided by the adjustments made by local governments to rising wages and/or vacancies is consistent only with a VMP curve of negative slope. The evidence includes substitution of capital for labor, reduction of the quality of the labor force, substitution of lower-skilled employees for higher skilled, increased recruiting activity to attract inexperienced or cheaper labor from outside the area, on-the-job training and improvement of working conditions.[15]

THE EHRENBERG ANALYSIS

A more thoughtful formulation is provided by Ronald Ehrenberg in his superior work on the demand for state and local government employees.[16] The governmental agency is assumed to possess a Stone-Geary type utility function which it seeks to maximize, subject to the constraint that the total employment budget is exhausted. That is, it seeks to maximize

$$U(M) = \sum_{k=1}^{n} a_k \log \left(\frac{e_k M_k}{P} - \frac{e_k b_k}{P}\right) \tag{2.1}$$

$$a_k > 0; \quad \sum_{k=1}^{n} a_k = 1; \quad M_k - b_k > 0$$

subject to

$$\sum_{k=1}^{n} W_k M_k = B \qquad (2.2)$$

where

M_k is full-time equivalent state and local government employment in the k^{th} functional category.

e_k is the factor of proportionality that converts per capita employment into a per capita service flows measure for the k^{th} class.

b_k is the "necessary" quantity of type k employees.

P is state population.

W_k is monthly payroll costs per employee of the k^{th} category.

j is the decision-making unit.

B is the total state budget for state and local government employees.

There are n employment categories and a_k is the relative importance of the k^{th} type of government service in the decision-maker's utility function.

Maximizing (2.1) subject to (2.2) yields employment demand functions of the form

$$\frac{M_j}{P} = \frac{b_j}{P} + \frac{a_j}{W_j}\left[\frac{B}{P} - \sum_{k=1}^{n} \frac{W_k b_k}{P}\right] \qquad (2.3)$$

$j = 1, 2 \ldots, n$

The notion of incremental budgeting is incorporated into the model by assuming that the "necessary" level of employment for a category is a function of the lagged employment level in that category.

$$b_k = \alpha_k M_k^{t-1}, \quad 0 \leq \alpha_k \leq 1; \; k = 1, 2, \ldots, n \qquad (2.4)$$

If $\alpha_k = 1$, employment decisions are strictly incremental; if $\alpha_k = 0$, the entire employment portfolio is a decision variable. Intermediate values indicate that functional employment levels can be cut to some extent.

Since tastes differ across states or within a state over time, the relative importance of each type of government service in the decision-makers' utility function (a_k) is assumed to be a function of a set of sociodemographic variables reflecting age distribution (which would affect the relative importance of educational, health and public welfare services), population density, proportion of the population living in SMSA's, etc.

$$a_k = \sqrt{}_{ok} \prod_{i=1}^{r} (X_{ist})^{\sqrt{}_{ik}} \qquad (2.5)$$

The X_{ist} are those socio-demographic variables in state s in year t which are expected to influence the relative marginal utility of the i^{th} employment class. Then combining (2.3)

through (2.5) and taking logs we have:

$$\log \frac{M_j}{P} - \frac{\alpha_j M_{j\ t-1}}{P} = \log (\sqrt{oj}) + \sum_{i=1}^{r} \sqrt{ij} \log (X_{ist}) \qquad (2.6)$$

$$- \log (W_j) + \log \left[\frac{B}{P} - \sum_{k=1}^{n} \frac{W_k \alpha_k M_k^{t-1}}{P} \right]$$

$k = 1, 2, \ldots, n$[17]

On the supply side, an infinitely elastic supply of labor to each category at a predetermined wage rate has been assumed. If the government employer does face positively sloped labor supply curves, the estimated wage coefficients will be biased in a positive direction. The estimates based on the previous equations would therefore understate (in absolute terms) the wage elasticity of demand for public employees.

Ehrenberg then attacks directly our fundamental question, the explanation of "substantial, persistent, and wide-spread job vacancies or shortages among certain classes of urban government employees."[18] The model he presents is consistent with the one we have just discussed if we assume that the recruitment division for each specific agency is separated from the decision-makers who choose the authorized employment levels for all the functional categories. The overall decision-makers were assumed to take the quality level for each class as fixed, while

the recruitment division is assumed to have knowledge of the quality distribution of applicants.[19]

Ehrenberg's analysis will show that the existence of persistent vacancy rates can be explained independently of the existence of monopsony. Moreover, he will resolve our apparent contradiction between vacancies and queues by showing that vacancies are "compatible with there being a greater number of applicants than there are positions, at a wage rate that is predetermined through either a legislative process or collective bargaining. In particular, if applicants vary in quality, then under certain conditions a rational government employer will choose to employ fewer employees than his predetermined authorized employment level. That is, the employer will choose an equilibrium positive vacancy rate."[20] Moreover, contrary to the implications of the monopsony model, increasing wage rates may actually increase rather than decrease observed vacancy rates. Because this work deals so directly with our central concerns, we will present it in greater detail.[21]

It is assumed that a government agency is allocated, through a political process or by some other means, an authorized employment level and a fixed wage rate per employee.

At this exogenously determined wage, the agency is assumed to attract more potential applicants than it has authorized vacant positions. The decision-makers then have to decide whether or not to hire an applicant as he presents himself. One way of doing this is to choose a set of minimum hiring standards or a minimum acceptable quality level so as to maximize the expected net gain to society. The model is restricted to a single period so that labor turnover and the possibility of altering the quality distribution of applicants by either recruiting or training expenditures can be ignored.

Applicants are assumed to be heterogeneous with qi (where $0 \leq qi \leq 1$) being the expected service flow from the i^{th} applicant. The expected quality of each applicant is assumed to be known once he presents himself, but the flow of applicants to the recruiting office is a random variable with distribution f(q). The minimum acceptable quality level is designated as q*. All applicants exceeding this minimum hiring standard will be employed; all others will be rejected. The expected quality of the accepted and rejected applicants is then given by A(q*) and R(q*) respectively, where,

$$A(q^*) = \frac{\int_{q^*}^{1} q\, f(q)\, dq}{\int_{q^*}^{1} f(q)\, dq} \qquad (2.14)^{22}$$

$$R(q^*) = \frac{\int_0^{q^*} q\, f(q)\, dq}{\int_0^{q^*} f(q)\, dq} \qquad (2.15)$$

Let W denote the specified wage rate and M denote the authorized employment level given by the political process. Let v denote the value per unit of the public service to society. Let F be the total number of applicants to the agency. This number is assumed to be greater than the number of available positions, the entire authorized employment level (M). Given q^*, the number of applicants accepted is then

$$N = n(q^*)\, E$$

where

$$n(q^*) = \int_{q^*}^{1} f(q)dq \qquad (2.16)$$

An increase in the minimum acceptable quality level increases the expected quality of both the accepted and rejected applicants and decreases the proportion of applicants that are accepted.

$$(A',\ R' > 0,\ n' < 0)$$

The expected value of the net gain to society from employing this particular class of public employees when positive vacancies exist is assumed to be given by

$$V = vA(q^*)n(q^*)E - Wn(q^*)E - v\left[M - n(q^*)E\right] R(q^*) \qquad (2.17)$$

The first term represents the value of the public service--the expected number of "quality-units" of public employees multiplied by the value per unit. The second term represents the direct cost--the expected wage bill. The last term represents the opportunity cost of having vacancies--the expected loss of public service due to the existence of vacancies. This is assumed equal to the expected number of vacancies multiplied by the average quality level of rejected applicants and the value per quality-unit of the service. It is assumed that committed funds to pay for vacant positions sit idle. If they are used for other purposes, the value of those uses should be added onto the objective function.

Assuming that an interior solution exists, the first order necessary condition to maximize (2.17) requires that the minimum acceptable quality level (q^*) be chosen to satisfy

$$vE\left[A(q^*)n'(q^*) + A'(q^*)n(q^*)\right] - WEn'(q^*) - v\left[M - n(q^*)E\right]R'(q^*) + vn'(q^*)\Sigma R(q^*) = 0 \qquad (2.18)$$

The interpretation of this condition is straightforward. An increase in the minimum acceptable quality level has three effects. First, it results in a smaller expected level of employment, but increased average quality of those accepted. Secondly, by

decreasing the expected employment level, it decreases the expected direct wage cost. Finally, since it causes an increase in both the expected number of vacancies and the average quality of rejected applicants, it increases the opportunity cost of the potential service foregone. The agency must choose the minimum acceptable quality level such that the net impact of these three effects is to maximize the expected value of the net gain to society.

Totally differentiating (2.18), and making use of the second-order necessary condition for (2.18) to have a relative maximum, we find that

$$\partial q^*/\partial v,\ \partial q^*/\partial M < 0;\ \partial q^*/\partial W,\ \partial q^*/\partial E > 0 \qquad (2.19)$$

That is, an increase in the average wage of public employees or in the number of applicants, and a decrease in the value of the public service or the authorized employment level, all ceteris paribus, an increase in the minimum acceptable quality level.

The minimum acceptable quality level (q^*) is not directly observable. In practice it may consist of a vector of hiring standards such as education levels, physical and mental characteristics and health, test scores, and even residence require-

ments. Indeed, it is with defining the minimum acceptable quality level, the vector of hiring standards, for one particular shortage occupation, policemen, and one particular city, Oakland, California, that the empirical focus of this thesis will be concerned.

The ratio of actual to authorized employment (one minus the vacancy rate) is directly observable.

$$E^* = \frac{n(q^*)E}{M} \qquad (2.20)$$

Differentiating (2.20) with respect to each parameter then yields directly

$$\partial E^*/\partial W < 0; \quad \partial E^*/\partial v > 0: \quad \partial E^*/\partial E, \; \partial E^*/\partial M \gtrless 0 \qquad (2.21)$$

Either an increase in the average wage of public employees or a decrease in the value of a unit of the service to society will decrease the expected ratio of actual to authorized employment, and consequently increase the expected vacancy rate. Thus, increasing the average wage of public employees to reduce the number of vacancies would be a self-defeating policy. The impact of a change in the number of applicants is in general ambiguous, because an increase in the number of applicants causes a reduction in the expected proportion of applicants that are accepted. Similarly, a change in the authorized employment

level has an ambiguous impact. If applicants are distributed with a uniform quality distribution, however, then an increase in the number of applicants or a decrease in the authorized employment level can be shown to unambiguously decrease the vacancy rate.

If the government agency has monopsony power so that its applicant flow will increase when there is an increase in its average wage relative to the alternative wages which its potential applicants perceive, the implications of the model must be modified. The increase in the flow of applicants can be interpreted either as an increase in the number of applicants or as an upward shift in the quality distribution of applicants. If the increase in the number of "higher" quality applicants is exactly offset by a decrease in the previously lowest quality applicants who withdraw upon observing the higher minimum standards that have accompanied a wage increase, an upward shift in the quality distribution alone would occur. It can be shown that an upward shift in a uniform distribution of applicants by quality will cause a decrease in the vacancy rate. Indeed, here is the hope implicit in the mind of police chiefs who advocate increasing hiring standards in the context of shortages.

Thus, an increase in the average wage of public employees will have, in this special case, one positive and two negative impacts on the equilibrium vacancy rate. Without numerical estimates of the magnitude of these offsetting impacts, there should be no presumption that increasing the wages of public employees would prove to be an effective method of reducing the number of job vacancies in public employment.

THEORY AND REALITY

I have detailed Ehrenberg's analysis here because its contribution to understanding our problem is outstanding. He provides a rational theoretical underpinning, based on a utility-maximizing decision model, for the existence of equilibrium vacancy rates in the context of a queue of applicants and for the possibility of raising hiring standards in the context of shortages. He shows that increasing wage rates may not be effective. He underscores the importance of understanding the components of the minimum acceptable quality level, the vector of hiring standards on which our work will attempt to cast some light. Most importantly, his explanation is divorced from the crutch of monopsony.

The monopsony explanation is particularly weak when applied to policemen, whatever its validity may be for teachers

and nurses, both of which constitute a licensed profession. (Shortages of teachers, however, have certainly disappeared.) For, as we discussed in Chapter 2, the police job is amorphous, the standards are undefined. How can an employer of ambiguous skills and qualities be a monopsonist? A policeman becomes a policeman not by acquiring any particular set of skills and training (as teachers and nurses do), but by being accepted for employment by a police department. Police applicants come from a wide range of alternative jobs, spanning almost every other occupational category. An employer who is not a large buyer of a unique and specified type of labor, but rather seeks certain ambiguous qualities found among people spanning the occupational spectrum, cannot reasonably be considered a monopsonist. Surely there are countless competitors for the bundle of qualities, particularly good character and trainability, that police departments seek.

Devine rationalizes this by claiming that, even for policemen, "educational or other qualifications are such that employees are drawn from a relatively small part of the total labor force; none are drawn from the unskilled or semi-skilled segments of the labor force."[23] This assertion, for policemen, is just not true.

Indeed, our data show just the reverse. If we classify the applicants to the Oakland Police Department from 1965 to 1971 by the occupational category of their most recent employment prior to applying (usually the job held at the time of application), we find that over two-thirds were either in the Army or in operative, service and laborer jobs, 8 percent were craftsmen, about 17 percent were in clerical and sales jobs, and less than 9 percent were in the professional and technical or managerial and proprietor categories.

The tables on the following pages show the occupational classification of applicants to the Oakland Police Department between 1965 and 1971. Table 3-1 shows the occupational categories of the first four jobs listed on the employment history section of the employment application. Job 1 is the job held immediately prior to or concurrent with applying, Job 2 is the job held before that, Job 3 the job held before that, etc. Many applicants have a work history consisting of only one or two jobs, so the number reported declines considerably as we move towards Job 4.

Table 3-2 shows the classification of Job 1 separately for each year to pick up any distortion of the aggregate table by phenomena peculiar to one or two years. The unusually high

Table 3-1. Job Applicants to Oakland Police Department, 1965-1971, by occupational category

	Job 1		Job 2		Job 3		Job 4	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Professional, technical and kindred	125	5.35	110	5.55	61	4.37	26	4.20
Managers, officials, proprietors	80	3.42	61	3.08	28	2.01	9	1.45
Clerical and kindred	260	11.12	242	12.22	221	15.84	85	13.73
Sales	133	5.69	141	7.12	79	5.66	45	7.27
Craftsmen, foremen and kindred	191	8.17	119	6.01	81	5.81	28	4.52
Operatives and kindred	468	20.02	437	22.06	306	21.94	114	18.42
Service	423	18.09	271	13.68	204	14.62	80	12.92
Farm laborers, foremen and managers	4	.17	15	.76	3	.22	7	1.13
Laborers	159	6.80	196	9.89	156	11.18	74	11.95
Army, Navy, Air Force	495	21.17	389	19.64	256	18.35	151	24.39
Totals	2338		1981		1395		619	

Source: The data from which this table is constructed came from employment applications submitted to the Oakland Civil Service Office from January, 1965, to June, 1971, for the job of policeman.

Table 3-2. Job applicants to Oakland Police Department, 1965-1971, by occupational category, for Job 1, by years

	1965		1966		1967		1968	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Professional, technical and kindred	15	4.78	10	2.37	16	4.42	23	4.77
Managers, officials, proprietors	15	4.78	13	3.08	16	4.42	18	3.73
Clerical and kindred	40	12.74	55	13.03	37	10.22	43	8.92
Sales	19	6.05	28	6.64	23	6.35	21	4.36
Craftsmen, foremen, and kindred	33	10.51	14	3.32	34	9.39	34	7.05
Operative and kindred	70	22.29	109	25.83	56	15.47	101	20.95
Service	45	14.33	78	18.48	80	22.10	70	14.52
Farm laborers, foremen and managers	0	0.00	1	.24	1	.28	0	0.00
Laborers	25	7.96	26	6.16	27	7.46	32	6.64
Army, Navy, Air Force	52	16.56	88	20.85	72	19.89	140	29 05
Totals	314		422		362		482	

Table 3-2, continued

	1969		1970		first 6 months 1971	
	Number	Percent	Number	Percent	Number	Percent
Professional, technical and kindred	10	3.41	14	4.81	37	21.26
Managers, officials, proprietors	5	1.71	10	3.44	3	1.72
Clerical and kindred	38	12.97	31	10.65	16	9.20
Sales	15	5.12	14	4.81	13	7.47
Craftsmen, foremen, and kindred	27	9.22	39	13.40	10	5.75
Operatives and kindred	51	17.41	52	17.87	29	16.67
Service	56	19.11	60	20.62	34	19.54
Farm laborers, foremen and managers	0	0.00	2	.69	0	0.00
Laborers	20	6.83	18	6.19	11	6.32
Army, Navy, Air Force	71	24.23	51	17.53	21	12.07
Totals	293		291		174	

Source: The data from which this table is constructed came from employment applications submitted to the Oakland Civil Service Office from January, 1965, to June, 1971, for the job of policeman.

number of applicants from the Army, 29 percent, in 1968, for example, is explained by the Department of Defense 90-day "early-out" program for men entering law enforcement, instituted in late 1967, in response to which Oakland developed an aggressive recruitment campaign. The other really outstanding phenomenon of the table is the marked increase from less than 5 percent in all other years to more than 20 percent in the first 6 months of 1971 of men from professional and technical occupations. This probably reflects the increasingly difficult labor market for professionals (for example, teachers) in the Bay Area.

In any case, the monopsony hypothesis seems substantially useless when applied to the occupational context of the police job.

EMPIRICAL ISSUES AND ANSWERS

There have been several recent general empirical attempts to estimate the determinants of municipal employee wages and the elasticity of demand. In theory, one would expect an inelastic demand for public employees. The demand for government services is likely to be price inelastic, without competing close substitutes. If unionized, there would be little pressure from nonunion sectors either in the product market or in the labor market. There is little scope for factor substitution

of capital for labor. The expenditures on any particular functional category are a small part of total municipal expenditures. Moreover, in the public sector political forces will reinforce the inelasticity implied by economic ones, providing optimal conditions for union growth and power.[24]

The empirical evidence tends to bear out demand inelasticity. Ehrenberg estimates the demand for state and local government employees, utilizing a time series (1958-1969) of cross-sections with annual individual state data as the units of observation, and finds significantly negative wage elasticities of demand for almost all functional categories. Therefore, the disemployment effects of real wage increases would be quite low. His basic reduced form equation has per capita full-time equivalent employees of category j as his dependent variable, and includes as independent variables 1) average monthly payroll cost per man, 2) the ratio of 1) to the average monthly earnings of manufacturing production workers, 3) per capita federal grants, 4) per capita personal income, and 5) those sociodemographic variables which influence the demand for class j employees.[25]

Roger W. Schmenner offers some empirical work on the determinants of teacher, police-fire, and a collection of common

function employee wage rates, using data for 11 American cities over a span of 9 years, 1962-1970.[26] His reduced form demand equation, with the wage rate as the dependent variable, includes 1) the opportunity wage, 2) the fraction of employees with union membership, 3) a dummy indicating the presence of formal collective bargaining, 4) work stoppages per area employee, showing the area's labor force militancy, 5) real property assessments per capita, 6) the percentage change in the property tax rate, and 7) the ratio of city population to metropolitan area population (indicating scope for monopsony).

He concludes that unionization has played a significant role in raising the wages of teachers: the total effect of a 0 to 100 percent membership increase and the imposition of formal collective bargaining procedures is between 12 and 14 percent. Police and firemen seem to benefit from complete membership increases by about 15 percent, but the impact of formal collective bargaining is unclear. Common function employees do not seem to benefit from unionization, but results here are hampered by significant data limitations.

What comparable private sector workers receive is the most important determinant of local public sector wages, as one would expect. Schmenner strongly agrees with our conclusion

that the monopsony argument could not be applicable to policemen. "The expected positive sign and significance of the city population/SMSA population term resoundingly destroys any notion that the city can exercise monopsonistic power over police-fire wages."[27] He is making the point that larger cities do not have monopsony power, but compete with smaller cities in their areas for police labor. He does not, however, deal with the possibility of potential monopsony power left unexercised for selection leeway, or the problem of the definition of the police occupation. He hypothesizes that the finding that the dominance of the central city seems to increase salaries may indicate differences in "tastes" among different cities or of wage differentials to compensate for big city duty. Or, we might add, of higher selection standards. For teachers, by the way, the city seems to wield some monopsonistic power in reducing wages.

As for the other variables, private-sector labor militance, as reflected in the number of area work stoppages, appears important in general. The variables treating the financial and administrative aspects of the city are of lesser importance.

James L. Freund's regression analysis demonstrates that increases in the average weekly earnings of municipal employees between 1965 and 1971 were significantly related to inter-city

differences in market factors such as unemployment rates, the pace of increases of nongovernmental wages, and the demand for municipal workers as measured by changes in city expenditures. Unionism, measured by the extent of organization, incidence of strikes, and legal status of political activity by city employees, exerted only a weak influence.[28]

Orley Ashenfelter's study of the effect of unionization on firemen's wages concludes that in 1966 unionized firemen had wages between 6 and 16 percent above those of nonunion, and average annual duty hours of unionized firemen were from 3 to 9 percent below that of nonunion firemen.[29] Ronald Ehrenberg, also studying firemen, finds that in cities with union contracts in 1969, hourly wages of fire fighters average from 2 to 18 percent higher than in cities without union contracts, divided into a decrease in annual hours of between 2 and 9 percent and an increase in annual earnings from 0 to 9 percent.[30]

The contention that the demand for police services is inelastic appears strong. It has been supported by the empirical evidence to date. The effect, historical and potential, of unionization, however, remains unclear, and promises to be more elusive to measurement. For an excellent institution discussion, see Police Unionism by Hervey A. Juris and Peter Feuille.[31]

THE RELEVANCE OF THE THEORY

Ehrenberg gives us a formal, rigorous decision model, stemming from a utility-based demand function for government services and moving to derived demand functions for each category of labor. He then looks at the problem before a particular functional department, say police, facing an authorized employment level and a wage rate per employee determined and fixed elsewhere in the political process. At the exogenously determined wage, the decision-maker attracts more potential applicants of heterogeneous quality than he has positions to fill. He then faces the problem of which applicants to accept.

One approach to this problem is to define a minimum acceptable quality level, say through a set of minimum hiring standards, and then to choose those applicants who meet the standards and reject all others. Ehrenberg concentrates on how to express this choice in the context of his formal, utility-based decision model. He explores how to maximize the expected value of the net gain to society from employing this particular class of public employees. His model allows him to show 1) the formal conditions which must be satisfied by the minimum acceptable quality level in order to maximize the expected value of the net gain to society; 2) the theoretical effect on the

minimum acceptable quality level of a change in wages, number of applicants, authorized employment level, or value of the public service: and 3) the theoretical effect on the expected vacancy rate of a change in wages, number of applicants, authorized employment level, or value of the public service.

Ehrenberg's model states the problem faced, in fact, by real world state and local government civil service agencies: given authorized employment and wage levels, who shall be hired to fill vacant positions? The rigor of his analysis also highlights the complex interaction between wages, hiring standards, authorized employment levels, and vacancy rates, a complexity too often obscured by the simpler, classical model which ignores the selection process and implies a more direct relationship between wage levels and vacancies, previously disturbed only in a monopsony framework.

Yet, Ehrenberg casts no substantive light on the minimum acceptable quality level itself, which he characterizes as a "vector of hiring standards such as education levels, physical and mental characteristics and health, test scores, and even resident requirements."[32] In fact, he dismisses it as "not directly observable."[33] However, the specific vector of hiring standards chosen by an agency molds the economic character-

istics of its labor force and restricts the relevant labor supply. It is in determining these standards that the decision-maker's pragmatic problem begins, and it is here, and in the related areas of recruitment and training, which Ehrenberg's single-period framework must omit, that he has real discretion to make choices.

To aid decision-makers and public policy formulation, specific vectors of hiring standards must be observed and their economic consequences must be traced and analyzed. In the policy framework of the 1970's, with its consciousness of the discriminatory effect of past hiring standards and the need for affirmative action, it is as important to understand the economic consequences of specific sets of hiring standards as to analyze demand elasticity, wages, and wage changes. Moreover, the definition of the desired minimum acceptable quality level of the labor supply may be as responsible for labor "shortage" complaints as wages.

To observe directly a vector of hiring standards, one must do just that, observe directly. We propose to study one agency, the Police Department of the City of Oakland, California. We will observe, define and analyze the vector of hiring standards used for the selection of Oakland policemen from 1965 to

1971, and its economic content and consequences. While the details and results of the study are applicable only to Oakland and to the time period defined, and while Oakland is unique in some respects, it should be clear that the general characteristics of the selection process discussed is by no means unique to Oakland, but represents a prototype of the process used in police departments, and other civil service agencies as well, throughout the country, well back into the 1920's at least.

Against this analysis, the challenges and controversies of 1971 to 1974 can be better understood. The details of an appropriate and nondiscriminatory vector of hiring standards for police departments and other agencies are now in flux. Some old standards, challenged in the courts under Title VII of the Civil Rights Act of 1964 and its emerging case law, are being judged inappropriate or discriminatory. New standards, to replace them, are emerging slowly and amid great controversy. In a few years, perhaps one will be able to compare the economic consequences of the old and the new.

We would like to begin this task by tackling the problem of observing vectors of hiring standards and analyzing their economic effects. We will use the Oakland Police Department in the 1965 to 1971 period, and describe changes made up through July, 1974, as we proceed.

CHAPTER 3

FOOTNOTES

1. The treatment in this section is based on Milton Friedman. Price Theory: A Provisional Text (Chicago: Aldine, 1962), pp. 211-225.

2. It may be difficult to distinguish differences in ability from differences in tastes. For example, does the deep-sea diver reap a reward for the scarce ability of being willing to work under water in dangerous circumstances or for the nonpecuniary disadvantages of the trade.

3. William F. Danielson, Police Compensation (a report submitted to the President's Commission on Law Enforcement and Administration of Justice, 1967), pp. 30-32.

4. Armen A. Alchian, "Information Costs, Pricing and Resource Unemployment," in Edmund S. Phelps, Microeconomic Foundations of Employment and Inflation Theory (New York: W. W. Norton, 1970), pp. 27-30.

5. David M. Blank and George Stigler, The Demand and Supply of Scientific Personnel (New York: NBER, 1957).

6. See Armen A. Alchian, "Information Costs, Pricing, and Resource Unemployment;" Dale T. Mortensen, "A Theory of Wage and Employment Dynamics;" and Donald F. Gordon and Allan Hynes, "On the Theory of Price Dynamics," all in Edmund S. Phelps, et. al., Microeconomic Foundations of Employment and Inflation Theory (New York: W. W. Norton, 1970).

7. K. J. Arrow and W. M. Capron, "Dynamic Shortages and Price Rises: The Engineer Scientist Case," Quarterly Journal of Economics, May 1959, p. 301.

8. See Eugene J. Devine, "Manpower Shortages in Local Government Employment," Ph. D. dissertation, University of California, Los Angeles, 1969: Eugene J. Devine, Analysis of Manpower Shortages in Local Govern-

ment (New York: Praeger, 1969). See also George Archibald, "The Factor Gap and the Level of Wages," Economic Record, XXX, November 1954, pp. 187-199; Richard W. Hurd, "Equilibrium Vacancies in a Labor Market Dominated by Non-profit Firms: The 'Shortage' of Nurses," Review of Economics and Statistics, Vol. LV, No. 2, May 1973; Stuart H. Altman, "The Structure of Nursing Education and its Impact on Supply," in Herbert E. Klarman, ed., Empirical Studies in Health Economics (Baltimore: The Johns Hopkins Press, 1970), pp. 335-352; R. T. Deane, "Simulating an Econometric Model of the Market for Nurses," Ph. D. dissertation, University of California, Los Angeles, 1971; Donald E. Yett, "Causes and Consequences of Salary Differentials in Nursing," Inquiry, VII, March 1970, pp. 78-99; Donald E. Yett, "The Chronic 'Shortage' of Nurses: A Public Policy Dilemma," in Herbert E. Klarman, ed., Empirical Studies in Health Economics (Baltimore: The John Hopkins Press, 1970), pp. 357-389.

9. David Lewin, "Wage Parity and the Supply of Police and Firemen," Industrial Relations, Vol. 12, No. 1, February, 1973; David Lewin, "Wage Determination in Local Government Employment," Ph. D. dissertation, University of California, Los Angeles, 1971.

10. David Lewin, "Wage Parity and the Supply of Police and Firemen," op. cit., p. 82.

11. Martin Bronfenbrenner, "Potential Monopsony in Labor Markets," Industrial and Labor Relations Review, July, 1956, pp. 577-588.

12. Ibid., p. 581.

13. For discussions of theoretical models of public employee wage determination, see Robert J. Carlsson and James W. Robinson, "Toward a Public Employment Wage Theory," Industrial and Labor Relations Review, Vol. 22, No. 2, January, 1969, pp. 243-248; Donald Gerwin, "Compensation Decisions in Public Organizations," Industrial Relations, Vol. 9, No. 2, February, 1969, pp. 175-184; Robert J. Carlsson and James W. Robinson, "Criticism and Comment: Compensation Decisions in Public Organizations," Industrial

Relations, Vol. 9, No. 1, October, 1969, pp. 111-113: James A. Craft, "Toward a Public Employee Wage Theory: Comment," Industrial and Labor Relations Review, Vol. 23, No. 1, October, 1969, pp. 89-95. For a political analysis of the bargaining process in Oakland, see Frank J. Thompson, "The Politics of Public Personnel Policy in a Core City," Ph. D. dissertation, University of California, Berkeley, 1973.

14. Walter Fogel and David Lewin, "Wage Determination in the Public Sector," Industrial and Labor Relations Review, Vol. 27, No. 3, April, 1974, p. 410.

15. Eugene J. Devine, "Manpower Shortages in Local Government Employment," op. cit., pp. 25-29.

16. Ronald G. Ehrenberg, The Demand for State and Local Government Employees (Lexington, Mass.: D. C. Heath, 1972). In this discussion, we will number Ehrenberg's equations as he does for the convenience of the reader who wishes to refer to his work.

17. For a more detailed discussion, see ibid., pp. 11-16.

18. Ibid., p. 17.

19. Ibid., p. 18, footnote 14.

20. Ibid., pp. 18-19.

21. Ehrenberg himself acknowledges the debt of his work to the three papers by Alchian, Mortensen, and Gordon and Hynes in Phelps, cited in footnote 7, and to Dale T. Mortensen, "Job Search, the Duration of Unemployment, and the Phillips Curve," American Economic Review, Vol. 60, December, 1970, pp. 847-861.

22. Ehrenberg's own equation numbers are being retained here for the ease of the reader who refers to his work.

23. Eugene J. Devine, "Manpower Shortages in Local Government Employment," op. cit., p. 161.

24. See Harry H. Wellington and Ralph K. Winter, Jr., The Unions and the Cities (Washington, D. C.: Brookings Institution, 1971), pp. 17-32.

25. Ronald G. Ehrenberg, The Demand for State and Local Government Employees, op. cit., pp. 23-138.

26. Roger W. Schmenner, "The Determination of Municipal Employee Wages," Review of Economics and Statistics, Vol. LV, No. 1, February, 1973, pp. 83-91.

27. Ibid., p. 87.

28. James L. Freund, "Market and Union Influences on Municipal Employee Wages," Industrial and Labor Relations Review, Vol. 27, No. 3, April, 1974, pp. 391-404.

29. Orley Ashenfelter, "The Effects of Unionization on Wages in the Public Sector: The Case of Fire Fighters," Industrial and Labor Relations Review, Vol. 24, No. 2, January, 1971, pp. 191-202.

30. Ronald G. Ehrenberg, "Municipal Government Structure, Unionization, and the Wages of Fire Fighters," Industrial and Labor Relations Review, Vol. 27, No. 1, October, 1973, pp. 36-48.

31. Hervey A. Juris and Peter Feuille, Police Unionism (Lexington, Mass.: D. C. Heath, 1973).

CHAPTER 4

THE INSTITUTIONAL FRAMEWORK:

SALARIES, VACANCIES, HIRING STANDARDS

THE COMPOSITION OF THE OAKLAND POLICE DEPARTMENT

The Oakland Police Department, as of October 30, 1973, has 698 sworn, uniformed members. Of these, 522, or 74.8 percent, are partrolman; 134, or 19.2 percent, are sergeants: 42, or 6 percent, hold ranks of inspector, lieutenant, captain, deputy chief, or chief.

Table 4-1. Oakland Police Department members, by rank, October 30, 1973

Rank	Number	Percent of Department
Patrolman	522	74.8
Sergeant	134	19.2
Inspector	6	0.9
Lieutenant	22	3.2
Captain	10	1.4
Deputy Chief	3	0.4
Chief	1	0.1
Total	698	100.0

Source: Oakland Civil Service Office

Advancement to the positions of sergeant, lieutenant and captain is by Civil Service examination; the inspector rank is being

phased out by merging it with sergeant· deputy chief and chief are Civil Service exempt positions filled by appointment. To be eligible to take the promotional exam for sergeant, for example, three years of patrolman experience are required. A four hour written test of 150 multiple choice questions on supervision and leadership, analytic ability, investigation and interrogation, operating departments, law, and rules and regulations must be passed with a score of at least 70 percent. An oral exam must be passed, and points are awarded for seniority. In composing the final eligibility list, the written counts 60 percent, the oral 30 percent and seniority 10 percent.

Because an entire generation of officers hired right after World War II, in 1946, 1947 and 1948 reached 25 years of service and retired by 1973, the current Oakland force is a young one. Less than one-third of the members have ten or more years of service: 43.6 percent have been hired in the last five years (see Table 4-2).

The career mobility, or pattern of advancement of cohorts of Oakland policemen, is shown in Table 4-3.

Table 4-2. Oakland Police Department members, by number of years of service, October 30, 1973

Number of Years of Service	Number	Percent of Department
25 years or more (hired 1948 or before)	48	6.9
20 to 24 years (hired 1949 to 1953)	84	12.0
15 to 19 years (hired 1945 to 1958)	60	8.6
10 to 14 years (hired 1959 to 1963)	33	4.7
5 to 9 years (hired 1964 to 1968)	169	24.2
Less than 5 years (hired 1969 to 1973)	304	43.6
Total	698	100.0

Source: Oakland Civil Service Office

SALARIES

Since the 1958 passage of the Proposition "C" charter amendment, Oakland Police and Fire Department salaries are linked to those of manufacturing production workers in the San Francisco-Oakland area and rise at the same rate. In 1968, the Police Officers' Association pressured the Oakland City Council to grant salary increases beyond those authorized by the Proposition "C" formula, arguing that "C" prescribed minimum salary increases rather than precise amounts. Under intense pressure,

Table 4-3. Oakland Police Department members, by number of years of service and rank, October 30, 1973

Number of Years of Service	Patrolman		Sergeant		Lieutenant		Other	
	Number	Percent of Cohort	Number	Percent of Cohort	Number	Percent of Cohort	Number	Percent of Cohort
25 years or more (hired 1948 or before)	31	64.6	7	14.6	3	6.3	7	14.6
20 to 24 years (hired 1949 to 1953)	53	63.1	16	19.0	7	8.3	8	9.5
15 to 19 years (hired 1954 to 1958)	17	28.3	33	55.0	6	10.0	4	6.6
10 to 14 years (hired 1959 to 1963)	12	36.4	16	48.4	4	12.1	1	3.0
5 to 9 years (hired 1964 to 1968)	111	65.7	56	33.1	2	1.2	0	0.0
Less than 5 years (hired 1969 to 1973)	298	98.0	6	2.0	0	0.0	0	0.0

Source: Oakland Civil Service Office

five councilmen decided to show "good faith" and double the amount Proposition "C" decreed. The courts upheld the increase.

The patrolman classification, until August, 1970, had three salary steps: patrolman, first year; patrolman, second year; patrolman, third year. In August, 1970, a fourth step was added: patrolman, fourth year. The fourth step was added partly to permit a decrease in the starting salary without threatening the pay scale of incumbents and partly to widen the career ladder. Once a patrolman reaches the fourth step, he must be promoted to sergeant to increase his salary scale. If he is not promoted to sergeant, his pay will increase only by yearly cost of living increases for patrolmen, fourth year. There are no seniority or merit increases. A patrolman on the force for 24 years will be earning the same salary as a patrolman on the force for four years.

The monthly salary for each patrolman step, sergeant and lieutenant from July, 1963, to July, 1974, is given in Table 4-4.

The salary differences between patrolman, first year, patrolman, second year, patrolman, third year, patrolman, fourth year, and sergeant are given in Table 4-5.

In other words, a patrolman's salary increases about three and one-half percent between his first year of service and his second year of service and between his second year and third

Table 4-4. Monthly salary of Oakland Police Department members, by rank, July, 1963, to July, 1974

	Patrolman First Year	Patrolman Second Year	Patrolman Third Year	Patrolman Fourth Year	Sergeant	Lieutenant
July, 1963	$625	$647	$667		$758	$836
July, 1964	646	669	689		783	864
July, 1965	663	686	707		803	886
July, 1966	686	710	731		831	917
July, 1967	711	736	758		861	950
July, 1968	773	800	824		936	1,033
August, 1968	823	852	878		992	1,095
July, 1969	873	904	932		1,053	1,162
July, 1970	960	994	1,025		1,158	1,344
August, 1970	926	960	994	$1,025		
July, 1971	977	1,012	1,048	1,081	1,221	1,417
July, 1972	1,058	1,095	1,134	1,170	1,322	1,534
July, 1973	1,134	1,174	1,215	1,254	1,417	1,644
July, 1974	1,201	1,243	1,286	1,328	1,527	1,756

Source: Oakland Civil Service Office.

Table 4-5. . Differences in salary of members of the Oakland Police Department, by rank, July, 1963, to July, 1974

	Patrolman First Year to Second Year		Patrolman Second Year to Third Year		Patrolman Third Year to Fourth Year		Patrolman Last Year to Sergeant	
	Dollars	Percent	Dollars	Percent	Dollars	Percent	Dollars	Percent
July, 1963	$22	3.52	$20	3.09			$91	13.64
July, 1964	23	3.56	20	3.00			94	13.64
July, 1965	23	3.47	21	3.06			96	13.58
July, 1966	24	3.50	21	2.96			100	13.68
July, 1967	25	3.52	22	2.99			103	13.59
July, 1968	27	3.49	24	3.00			112	13.59
August, 1968	29	3.52	26	3.05			114	12.98
July, 1969	31	3.55	28	3.10			121	12.98
July, 1970	34	3.54	31	3.12			133	12.98
August, 1970	34	3.67	34	3.54	$31	3.12		
July, 1971	35	3.58	36	3.56	33	3.15	140	12.98
July, 1972	37	3.50	39	3.56	37	3.26	152	12.99
July, 1973	40	3.53	41	3.49	39	3.21	163	13.00
July, 1974	42	3.50	43	3.46	42	3.27	199	13.00

Source: Data on which calculations are based was supplied by Oakland Civil Service Office.

year, and about three and one-quarter percent between the third year and fourth year. Then, unless he advances in rank, he receives only cost-of-living increases, pegged to the increase in average earnings of Bay Area manufacturing production workers.

The annual increases in patrolman, first year, classification salaries and the annual increases in wages of Bay Area manufacturing production workers are shown in Table 4-6.

The relative wages of Oakland patrolman and Bay Area production workers changed most dramatically with the double increase won by the patrolman in 1968. The patrolman's starting salary averaged slightly over 115 percent of production workers' wages before August, 1968, and over 125 percent afterwards. Patrolmen in their last step went from about 125 percent of production workers' wages before August, 1968, to close to 140 percent afterwards. Sergeants' salaries were about 140 percent of production workers' wages before August, 1968, 157 percent afterwards. The ratio of patrolmen's salaries, first and last year, and sergeant's salaries, to average production workers' earnings, is presented in Table 4-7.

It should be stressed here that the figures for Oakland police salaries and for average production worker wages are not

Table 4-6. Annual rate of increase, Oakland Police Department patrolman and San Francisco-Oakland manufacturing production workers, July, 1963 to July, 1973

Date	Oakland Patrolman, First Year		Production Workers in Manufacturing San Francisco-Oakland	
	Annual Salary	Percent Rate of Increase	Annual Wage	Percent Rate of Increase
July, 1962	$ 7,272		$ 6,203	
July, 1963	7,500	1.5	6,457	4.1
July, 1964	7,752	3.4	6,622	2.6
July, 1965	7,956	2.6	6,915	4.4
July, 1966	8,232	3.5	7,253	4.9
July, 1967	8,532	3.6	7,321	0.9
July, 1968	9,276	8.7	7,907	8.0
July, 1969	10,476	12.6	8,402	6.3
July, 1970	11,520	10.0	8,549	1.7
August, 1970	11,112	-3.5	8,621	0.8
July, 1971	11,724	5.5	9,333	8.3
July, 1972	12,696	8.3	10,131	8.6
July, 1973	13,608	7.2	10,859	7.2

Source: Data on which calculations for Oakland are based were supplied by Oakland Civil Service Office. Data on which calculations for production workers in manufacturing, San Francisco-Oakland, are based were supplied by State of California, Department of Industrial Relations, Division of Labor Statistics and Research, California Labor Statistics Bulletin, July, 1962, to July, 1970, and State of California, Department of Human Resources Development, California Labor Market Bulletin, July, 1971, to July, 1973.

Table 4-7. Ratio of Oakland Police Department patrolman and sergeant salaries to earnings of San Francisco-Oakland manufacturing production workers, July, 1963, to July, 1973

Date	Patrolman, 1 Average Earnings	Patrolman, 3 Average Earnings	Sergeant Average Earnings
July, 1963	1.16	1.24	1.41
July, 1964	1.17	1.25	1.42
July, 1965	1.15	1.23	1.39
July, 1966	1.13	1.21	1.37
July, 1967	1.16	1.24	1.41
July, 1968	1.17	1.25	1.42
July, 1969	1.25	1.33	1.50
July, 1970	1.35	1.44	1.63
July, 1971	1.26	1.39	1.57
July, 1972	1.26	1.39	1.57
July, 1973	1.25	1.39	1.57

Note: Ratios are calculated by dividing annual salary of Oakland Police Department member by average annual wages of production workers in manufacturing in the San Francisco-Oakland area. For example, for July, 1973, patrolman, first year, the calculation is 13,608/10,859 equals 1.25.

Source: Data for Oakland were supplied by the Oakland Civil Service Office. Data for production workers in manufacturing, San Francisco-Oakland, were supplied by State of California, Department of Industrial Relations, Division of Labor Statistics and Research, California Labor Statistics Bulletin, July, 1963, to July, 1970, and State of California, Department of Human Resources Development, California Labor Market Bulletin, July, 1971, to July, 1973.

measuring the same thing. The Oakland figures are derived simply by multiplying the monthly salary rate in effect in July of each year by 12. They represent salary scales, not actual earnings. For example, overtime pay earned by policemen would not be reflected. The production worker earnings figures are derived by multiplying average weekly earnings of San Francisco-Oakland SMSA production workers in July by 52. They represent actual earnings and would reflect the number of hours worked and overtime pay as well as wage rates. July figures were chosen in both cases because the fiscal year in Oakland commences in July and most salary changes take effect then. The comparability is sufficient for our rough purposes.

An even more revealing set of relative wage calculations can be provided for the census year 1969. In Tables 3-1 and 3-2, we presented the previous occupations of the applicants to the Oakland Police Department between 1965 and 1971. We know, for example, that in 1969, 3.4 percent of the applicants came from professional, technical and kindred jobs, 1.7 percent from managerial, almost 13 percent from clerical, 5.1 percent from sales, 9.2 percent from craftsman, 17.4 percent from operative, 19.1 percent from service, 6.8 percent from laborer jobs and 24.2 percent from the military. The 1970 Census provides us

with median earnings for San Francisco-Oakland SMSA workers in each of the civilian occupational categories.[1] Table 4-8 compares the annual salary of Oakland patrolman, step 1, patrolman, step 3, and sergeant, in 1969 with the median earnings of San Francisco-Oakland SMSA workers in other broad occupational categories. The ratio of the police salary to median earnings in each occupational category is presented for the total population and for the Negro and Spanish surnamed sectors separately.

The Oakland figures are based on the monthly salary rate after the July, 1969, increase. Again, salary scale figures and earnings figures are not strictly comparable. The Census earnings figures not only reflect overtime, but also include earnings from second jobs or businesses. All members of the experienced civilian labor force in the occupation are included, whether employed or unemployed. The police salary scale figures do not reflect overtime or second jobs or unemployment, as the earnings figures do. Both overtime and second job opportunities represent important additions to primary police salaries.

Because of its interest, we report the protective service category in more detail than the other occupational categories. Oakland patrolmen, step 1, earn only 86 percent of firemen's

Table 4-8. Oakland Police Department salaries for patrolman, step 1, patrolman, step 3, and sergeant, relative to median earnings in other occupational groups, 1969, for San-Francisco-Oakland SMSA, total, Negro and Spanish surname

Occupational Category	Total				Negro				Spanish Surname			
	Median Earnings	Pat. 1 M. E.	Pat. 3 M. E.	Sgt. M. E.	Median Earnings	Pat. 1 M. E.	Pat. 3 M. E.	Sgt. M. E.	Median Earnings	Pat. 1 M. E.	Pat. 3 M. E.	Sgt. M. E.
Experienced civilian labor force, all	$ 9,073	1.15	1.23	1.39	$6,968	1.50	1.61	1.81	$ 8,098	1.29	1.38	1.56
Professional, technical	11,784	.89	.95	1.07	8,126	1.29	1.38	1.56	10,178	1.03	1.10	1.24
Managers, administrators	12,992	.81	.86	.97	9,150	1.14	1.22	1.38	11,748	.89	.95	1.08
Sales	9,372	1.12	1.19	1.35	6,281	1.67	1.78	2.01	8,796	1.19	1.27	1.44
Clerical	7,576	1.38	1.48	1.67	6,846	1.53	1.63	1.85	7,290	1.44	1.53	1.73
Craftsmen	9,757	1.07	1.15	1.30	7,858	1.33	1.42	1.61	9,076	1.15	1.23	1.39
Operatives, exc. transport	7,594	1.38	1.47	1.66	7,048	1.49	1.59	1.79	7,466	1.40	1.50	1.69
Transport equipment operatives	8,666	1.21	1.29	1.46	7,581	1.38	1.48	1.67	8,951	1.17	1.25	1.41
Laborers, exc. farm	6,619	1.58	1.69	1.91	6,854	1.53	1.63	1.84	7,161	1.46	1.56	1.76
Farmers and farm managers	6,696	1.56	1.67	1.89	3,364	3.11	3.32	3.76	7,065	1.48	1.58	1.79
Farm laborers and foremen	3,860	2.71	2.90	3.27	1.639	6.39	6.82	7.71	4,330	2.42	2.58	2.92
Service, exc. household	6,183	1.69	1.81	2.04	5,656	1.85	1.98	2.23	6,057	1.73	1.85	2.09
Protective service	10,831	.97	1.03	1.17	6,241	1.68	1.79	2.02	10,153	1.03	1.10	1.24
Firemen	12,172	.86	.92	1.04	-	-	-	-	12,292	.85	.91	1.03
Guards and watchmen	5,869	1.78	1.91	2.15	4,768	2.20	2.35	2.65	5,500	1.90	2.03	2.30
Policemen and detectives	11,767	.89	.95	1.07	9,875	1.06	1.13	1.28	10,633	.99	1.05	1.19
Private household	2,531	4.14	4.42	4.99	1,882	5.57	5.94	6.71	-	-	-	-

Table 4-8, continued

Note: The annual salary for patrolman, step 1 (Pat. 1), in July, 1969, was $10,476: the annual salary for patrolman, step 3 (Pat. 3), in July, 1969, was $11,184: the annual salary for sergeant in July, 1969, was $12,636

The - sign means that the median earnings figure was not presented by the Census because the base is smaller than the minimum number prescribed for the sample.

Source: Data for Oakland were supplied by the Oakland Civil Service Office. Data on median earnings (M.E.) for the San Francisco-Oakland SMSA, by occupation and race, come from U. S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census, 1970 Census of Population, Detailed Characteristics, California, Section 1 (PC (1)-D6 Calif.), pp. Calif 6-1823 to 6-1828, Table 175, "Occupation of the Male Experienced Civilian Labor Force by Earnings in 1969 and Race: San Francisco-Oakland SMSA."

earnings and 89 percent of all area policemen's and detectives' earnings; Oakland patrolmen, step 3, earn 92 percent of firemen's earnings and 95 percent of all area policemen's and detectives' earnings. Yet, Oakland Police Department salaries, along with San Francisco's, are the highest in the Bay Area, as well as in the state. We know, too, that firemen's salaries are pegged to policemen's salaries. Median earnings will be affected somewhat by earnings of policemen in higher ranks than patrolman. But the apparent puzzle is best explained by the prevalence of both overtime and second jobs or businesses among policemen and firemen. Therefore, one would expect overall earnings figures to exceed those based on salary scales, as our ratios demonstrate. Firemen, because of the arrangement of their working hours into consecutive full day and night duty tours and consecutive days off, have even more opportunities for additional earnings than policemen. It is not surprising, therefore, that the differential between Oakland police salary scales and average earnings is even greater for firemen than for policemen. We can infer that roughly 95 percent of the total earnings of the average Oakland patrolman, step 3, comes from his stated salary scale; second jobs and overtime supply the rest. Second jobs are permitted, but must be revealed and approved by

the chief. It should also be stressed here that graft is not a problem in the Oakland Police Department and illegal income can reasonably be ignored for purposes of our work.

The only other occupational categories in Table 4-8 in which median earnings exceed Oakland patrolman earnings are professional and technical and managerial and administrative. It is not surprising that such a small percent of total police applicants was drawn from these categories when Oakland patrolmen start at 89 percent of the median earnings of professionals and 81 percent of the median earnings of managers in the area, and in their third year earn 95 percent and 86 percent respectively of professional and managerial median earnings. Even Oakland sergeants earn only 97 percent of the median earnings of managers, although 107 percent, now, of those of professionals and technicians.

Similarly, it is not surprising that most of the civilian applicants to the Oakland Police Department come from service, operative and clerical jobs. The Oakland patrolman's starting salary is 169 percent of the median earnings of service workers and 138 percent of the median earnings of clerical workers and operatives. The differentials are even greater in the laborer, farm, and private household worker categories, but workers in

these categories are much less likely to meet the other requirements, particularly high school graduation, of the Oakland Police Department. It should also be noted here that Oakland patrolmen start at 178 percent of the median earnings of private guards and watchmen.

The differential between Oakland patrolman earnings and median earnings in other occupational categories is greater, across all categories, for the Negro and Spanish surnamed population than for the total population. This is because median earnings across all occupations is lower for Negroes and Spanish surnamed individuals. Does this imply, as was so often argued in discussions of a volunteer army, that the Oakland Police Department is flooded with applications from the minority community because becoming a policeman would have relatively more pecuniary attractiveness to a minority person than to others? We will deal with the minority composition of the Department, and the issues surrounding it, in detail in Chapter 6. The answer to our question is clearly no, because pecuniary attractiveness does not tell the whole story. In fact, minority community members clearly are more reluctant than others to become policemen. The distaste attached to becoming a policeman is much greater in the minority communities because of the

feeling, whether overt or incipient, that minority communities have been occupied and harrassed by alien, hostile police forces throughout their history, and that joining the police force would be joining the enemy. On the personal level, the minority policeman may be both rejected by his community and his fellow officers. Moreover, minorities do not see themselves on police forces, do not feel they would be selected or accepted. To attract more minorities, large pecuniary incentives are not enough. The taste problem must be tackled directly, through recruitment campaigns aimed at the minority communities, through changes in the image of the police force, through changes in selection techniques, and, perhaps, through more fundamental changes in composition and definition of the police job.

We can present one more set of interesting relative income calculations for the census year 1969. We can show the relationship of Oakland police salaries to the mean income of San Francisco-Oakland area men by years of school completed, age and race. Income figures are even less comparable to scheduled Oakland police salaries than the earnings figures presented previously, because income includes not only earnings, but interest, dividends, veterans' payments, social security, pensions, etc.,[2] as well. Nevertheless, the comparisons allow

Table 4-9. Oakland Police Department patrolman starting salary relative to mean income of all San Francisco-Oakland males, 18 and older, and 25 to 34, in 1969, by years of school completed and race

	All Educational Groups		Four Years High School		One to Three Years College		Four Years College		Five Years Plus College	
	Mean Income	Pat. 1 M. I.	Mean Income	Pat. 1 M. I.	Mean Income	Pat. 1 M. I.	Mean Income	Pat. 1 M. I.	Mean Income	Pat. 1 M. I.
All males, 18 and older										
Total	$9,274	1.13	$8,609	1.22	$8,855	1.18	$13.232	.79	$15,568	.67
Negro	5,949	1.76	6,026	1.74	6,427	1.63	8,606	1.22	11,359	.92
Spanish surname	7,884	1.33	8,026	1.31	7,939	1.32	10,949	.96	13,527	.77
Males, 25 to 34										
Total	$8,903	1.18	$8,736	1.20	$8,762	1.20	$10,059	1.04	$ 9.970	1.05
Negro	6,637	1.58	6,719	1.56	7,047	1.49	8,576	1.22	8,203	1.25
Spanish surname	8,219	1.27	8,457	1.24	8,300	1.26	9,209	1.14	9,747	1.04

Note: The annual starting salary for Oakland patrolman, step 1 (Pat. 1), in July, 1969, was $10,476.

Source: Data for Oakland were supplied by the Oakland Civil Service Office. Data on mean income (M. I.) for the San Francisco-Oakland SMSA, by age, race, and years of education, come from U. S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census, 1970 Census of Population, Detailed Characteristics, California. Section 2 (PC (1)-D6 Calif.), pp. Calif 6-2336 to 6-2338, Table 197, "Income in 1969 of Persons 18 Years Old and Over by Years of School Completed, Age, Race and Sex San Francisco-Oakland SMSA."

Table 4-10. Oakland Police Department patrolman, step 3, and sergeant, salaries relative to mean income of all San Francisco-Cakland males, 18 and older, in 1969, by years of school completed and race

	All Educational Groups			Four Years High School			One to Three Years College			Four Years College			Five Years Plus College		
	Mean Income	Pat.3 M.I.	Sgt. M.I.	Mean Income	Pat.3 M.I.	Sgt. M.I.	Mean Income	Pat.3 M.I.	Sgt. M.I.	Mean Income	Pat.3 M.I.	Sgt. M.I.	Mean Income	Pat.3 M.I.	Sgt. M.I
All males, 18 and older															
Total	$9,274	1.21	1.36	$8,609	1.30	1.47	$8,855	1.26	1.43	$13,232	.85	.95	$15,568	.72	.8
Negro	5,949	1.88	2.12	6,026	1.86	2.10	6,427	1.74	1.97	8,606	1.30	1.47	11,350	.98	1.1
	7,884	1.42	1.60	8,026	1.39	1.39	7,939	1.41	1.59	10,949	1.02	1.15	13.527	.83	.9

Note: The annual salary for Cakland patrolman, step 3 (Pat. 3), in July, 1969, was $11, 184; the annual salary for sergeant (Sgt.) in July, 1969, was $12,636.

Source: Data for Oakland were supplied by the Oakland Civil Service Office. Data on mean income (M.I.) for the San Francisco-Oakland SMSA, by age, race, and years of education, come from U. S. Department of Commerce Social and Economic Statistics Administration, Bureau of the Census, 1970 Census of Population, Detailed Characteristics, California, Section 2 (PC (1)-D6 Calif.), pp. Calif. 6-2336 to 6-2338. Table 197, "Income in 1969 of Persons 18 Years Old and Over by Years of School Completed, Age, Race and Sex: San Francisco-Oakland SMSA."

us to demonstrate that Oakland police salaries are considerably more attractive to high school graduates than to college graduates. In fact, if we look at all San Francisco-Oakland men over the age of 18, Oakland police starting salaries are 122 percent of the mean income of high school graduates, 118 percent of the mean income of men with one to three years of college, and only 79 percent of the mean income of college graduates.

Oakland Police Department applicants, however, must be between the ages of 21 and 32. The mean income for this younger age group is below that for all men over 18. The Census data for 18 to 24 year old men is clearly distorted by school attendance and part-time earnings. If we take men 25 to 34 years old, we find that the Oakland police starting salary is greater than the mean income of high school graduates and men with one to three years of college, and 104 percent of the mean income of college graduates. There is clearly a substantial difference in the pecuniary attractiveness of police work for high school and college graduates. The data are presented in Table 4-9 and Table 4-10.

BENEFITS

Oakland patrolmen receive benefits which add, by the city's estimates in May, 1971, an additional $5,829 to an Oakland

Table 4-11 Total remuneration of Oakland patrolman, step 3, fiscal year July, 1970, to June, 1971

Source	Dollar Amount
Salary	$ 12,300
Retirement	5,045
Workmen's Compensation	386
Health	180
Dental	53
Uniform	165
Total	$ 18,129

Source: Oakland Civil Service Office

patrolman's third year salary.[3] His total remuneration is shown in Table 4-11.

The retirement program has the following features:

1) One half pay after 25 years of service. One half pay at age 55 with 20 years of service.
2) Retirement pay is 50 percent of whatever current pay is. That is, an officer who retired in 1950 receives 50 percent of today's top pay, or $512.50 per month.
3) Seventy-five percent pay to an officer who is retired for service-incurred disability. Upon reaching his normal retirement date he assumes the normal 50 percent salary.

4) Seventy-five percent pay to dependents of a retired officer who dies as a result of service injuries. Upon normal retirement date this amount reduces to the normal 50 percent.

5) One-third salary to an officer with a non-service connected disability who has over 10 years service.[4]

The health services provided are as follows:

1) Sick leave benefits provide an officer off duty for illness 60 days sick leave without loss of pay. If his sickness continues, he is entitled to half pay for an additional 60 days, and if his sickness further continues, he receives such pay as the city council may direct.

2) Medical plans are provided for the employee and dependents. The City pays $15 monthly, which approximates the employee's contribution. Dependents are covered at the employee's expense.

3) Dental plan coverage is paid in full by the City for the employee only.

4) An officer off duty for injuries received in the line of duty receives whatever medical, surgical or hospital treatment, including medicine, nursing, and medical and surgical supplies, he may need during the period

of his disability, remaining on a full pay status until return to duty or disability retirement.[5]

Fifteen working days per year of vacation are provided, increasing to a maximum of 20 working days. In addition, officers are compensated for 11 holidays per year.[6]

There are also several educational incentive programs, providing cash payments to officers completing approved college course work or continuing their education.[7]

We have no comparable estimates of the pecuniary value of benefits available to the average San Francisco-Oakland worker. However, the police benefits, particularly the retirement provisions which enable a man who joined the force at age 21 to retire at age 46 at one-half pay, should certainly compare favorably, adding positively to the relative pecuniary attractiveness of the police job.

VACANCIES

Yet, the relative pecuniary attractiveness of the job did not appear to be sufficient to offset an apparent distaste for police work in the population, at least in the population of applicants of interest to the Oakland Police Department. Oakland, along with other major cities, complained bitterly in the 1960's of shortages of qualified applicants, of an inability to fill vacant

positions quickly.[8] The city was very unhappy, for example, with vacancy rates of over 6 percent of authorized positions which prevailed in 1966 and 1968, in spite of elaborate nationwide recruitment efforts.

This unhappiness contributed, of course, to the granting by the city of the double wage increase to patrolmen in 1968, 8.7 percent in July and 6.5 percent in August. This increased patrolmen's starting salaries from 117 percent of average earnings of production workers in manufacturing to 125 percent (see Table 4-7). Simultaneously, general econc nic conditions worsened, political turmoil lessened, departmental image improved, and attempts to attract more minorities to the force were launched. The medicine of increased salary, aided by other conditions, worked. The vacancy rate declined from 6.1 percent of authorized positions in July, 1968, to zero in June, 1969. It remains very small, in spite of the abandonment of national recruiting and the adoption of residence preference. The history of the vacancy rate from 1960 to 1973 is presented in Table 4-12. The complaints today are not of general shortages of qualified applicants, but only of shortages of qualified minority applicants.

Table 4-12. Oakland police officer vacancies, 1960 to 1973

Date	Number of Authorized Positions	Number of Filled Positions	Number of Vacancies	Vacancy Rate
June 13 to July 24, 1960	543	494	47	.087
June 26 to August 6, 1961	543	459	84	.155
May 28 to July 8, 1962	488	450	38	.078
June 11 to July 21, 1963	468	457	11	.024
June 23, 1964	468	465	3	.006
July 5, 1965	468	458	10	.021
July 11, 1966	511	479	32	.063
July 19, 1967	511	496	15	.029
July 1, 1968	511	480	31	.061
June 30, 1969	532	532	0	.000
June 29, 1970	525	524	1	.002
July 5, 1971	525	524	1	.002
July 3, 1972	537	514	23	.043
July 2, 1973	535	523	12	.022

Note: The vacancy rate is computed by dividing the number of vacancies by the number of authorized positions.

Source: Oakland Police Department, Personnel Division, memo from Lieutenant J. McArthur.

FACT AND THEORY

The disappearance of shortages following a marked increase in relative wages seems to cast the final blow to those theories which sought to explain the police shortages of the 1960's solely through a monopsony model implying job vacancies in equilibrium

at a monopsony wage. More likely, if a simple model is desired, we were observing an Arrow and Capron dynamic shortage, in which the lags in market adjustment were ultimately corrected.

Even some of Ronald Ehrenberg's inferences must be modified. An increase in the average wage of Oakland policemen did not increase the expected vacancy rate, as he suggested might be possible, but decreased it, as simple conventional theory would predict. However, the Ehrenberg model has sufficient complexity and scope to remain interesting. He did not argue, after all, that vacancy rates had to increase if wages increased, only that they might. One would have to consider also changes in the value of the service to society, the number of applicants, the authorized employment level, the quality distribution of applicants, the minimum acceptable quality level, and the proportion of applicants that are accepted. In fact, for example, if the wage increase is accompanied by higher minimum standards and/or an upward shift in the quality distribution of applicants, then the vacancy rate will decrease. Ehrenberg concludes simply that without numerical estimates of the magnitude of the offsetting impacts of an increase in the average wage on the vacancy rate, we can presume nothing about the nature or direction of their relationship. Nothing in this discussion is meant to suggest

that one experience in Oakland can prove or disprove a theory. We are only trying to assess which theories seem most consistent with our observed case.

As for the relationship between wage increases and authorized employment levels, our evidence is ambiguous. The large wage increases between July, 1968, and July, 1969, which increased patrolmen's starting salaries from 117 percent of average earnings of production workers in manufacturing to 125 percent, were accompanied as well by an increase of 21 authorized positions. Between July, 1969, and July, 1970, relative wages jumped again, to 135 percent of production workers' earnings, and authorized positions increased by 12. In July, 1972, and July, 1973, both relative wages and authorized positions remained stable, but salary increases reflecting inflation continued. In July, 1974, in spite of continuing stability of the relationship of police salaries to production workers' wages, 20 patrolman positions were cut, reducing authorized positions to 515. This could well be an employment response to continued salary increases brought about by the pressures of inflation. The magnitude of the cut suggests strongly that the response of public employment to wage increases may be stronger than people think.

HIRING STANDARDS

We turn now to a description of the vector of hiring standards that constitutes the minimum acceptable quality level of the Oakland Police Department. It is these standards that filter and restrict the available labor supply. It must be stressed here that even in the 1960's there was no shortage of applicants to the Oakland Police Department, only a shortage of applicants deemed qualified. Table 4-13 shows the percent of all applicants actually appointed to the department between 1960 and 1970.

Table 4-13. Percent of all applicants appointed to the Oakland Police Department, 1960 to 1970

Year	Percent Appointed
1960	0.76
1961	2.68
1962	3.81
1963	2.75
1964	4.30
1965	6.34
1966	8.53
1967	3.78
1968	5.95
1969	6.30
1970	3.79

Source: Oakland Civil Service Office

Clearly, selection is at work.

Logically, selection standards for a job should be derived

from a clear evaluation of the qualities necessary for successful job performance. A typist must know how to type; an acceptable standard in terms of words per minute and accuracy can be defined. However, as we discussed at length in Chapter 2, the policeman's job is more loosely defined and often involves elusive and contradictory skills. Moreover, we are not quite sure what we mean by successful job performance.

In spite, even perhaps because of the difficulty in specifying desirable traits, elaborate, detailed hiring standards evolved for policemen. The standards conformed to the images of policemen, police administrators and civil service personnel of the good policeman. They translated these images into decision rules which then were reinforced by widespread usage, advocacy, and belief in their effectiveness. They were hallowed by tradition, but not by empirical validation of their relationship to job performance.

The selection standards and hiring procedures of the Oakland Police Department were quite representative of those in police departments across the country in the 1950's and 1960's. We will enumerate and explain them as best we can.

First, there are the requirements explicitly listed on the job announcement posted by the city. A potential applicant

should be able to ascertain himself whether or not he meets these requirements. If he knows he does not, he will probably not apply. If he is uncertain and submits his application, the city should be able to ascertain quickly whether the requirements are satisfied or not. They are:

1) Age: 21 to 32, to age 35 with 2 years of college or 2 years of police experience.
2) Height: 5'7" to 6'7" measured without shoes.
3) Weight: 135 lbs., must be proportional to height.
4) Vision: 20/70 uncorrected, correctible to 20/20 one eye, 20/30 the other, normal color vision.
5) Education: high school graduate or GED with a total score of 262.
6) Driver's license: possession of a valid unrestricted license by date of hire.

Age

Minimum age requirements of 21 are widely adopted by police departments because this is the age at which a person's full legal rights and obligations as an adult United States citizen commence. Maximum age requirements are widely justified as necessary for the financial solvency of police retirement systems. Clearly at work here as well are American mystiques about young men in the prime of physical fitness.

All of California's 288 distinct law enforcement agencies have minimum age requirements: all but 7 have maximum age requirements as well. But the details of these requirements vary widely. Mandated minimum ages range from 20 to 25, mandated maximums from 25 to no maximum.[9] The most common age standards among California law enforcement agencies are enumerated in Table 4-14. We list, in order of popularity, only those requirements chosen by more than five agencies.

Table 4-14. Common age requirements of California law enforcement agencies in 1968

Age Range	Number of Departments
21 to 35	133
21 to 34	26
21 to 40	24
21 to 31	19
21 to 45	9
21 to 32	8
21 to 33	7
21 to no maximum	7
21 to 39	6
21 to 30	5
other	44
Total	288

Source: State of California, Commission on Peace Officers Standards and Training, A Career in Law Enforcement, October, 1969.

Height and Weight

Height and weight requirements also come from American popular beliefs about what constitutes the physically fit male. The minimum requirements satisfy the stereotype of the large male police officer, called upon to perform duties in which size and presence are assets. It is argued, for example, that size may be needed to restrain hostile or struggling persons during arrest or flight, to lift or carry persons, to pull persons from wrecked automobiles, to subdue suspects, to climb fences, to kick in doors, etc.[10] More sophisticated arguments are made as well. One is that physical presence alone may enable a policeman to dominate a situation that he might not otherwise be able to control. Another is that small officers are more likely to be involved in physical altercations because they present less imposing physical prowess. Similarly, they may be more often called upon to use lethal methods of self defense.[11] These beliefs are deeply imbedded and passionately held in police circles, despite the lack of empirical verification of their reality.

The range of standards, however, alleged to satisfy these needs is wide. Over 100 different combinations of height and weight minima and maxima are embraced by the 288 California

Table 4-15. Common height and weight requirements of California law enforcement agencies in 1968

Height Range	Weight Range	Number of Departments
5'9" to	proportional	27
5'9" to	150 lbs. minimum	19
5'8" to	proportional	18
proportional	proportional	14
5'8" to 6'6"	proportional	13
5'8" to 6'5"	proportional	11
5'9" to 6'6"	proportional	9
5'8" to 6'4"	proportional	8
5'8" to	150	8
5'8" to	145	8
5'9" to 6'5"	proportional	7
5'9" to 6'4"	proportional	7
5'8" to 6'6"	150	6
5'9" to 6'6"	150	5
other combination		128
Total		288

Source: State of California, Commission on Peace Officers Standards and Training, A Career in Law Enforcement, October, 1969.

law enforcement agencies. We list those chosen by more than five departments, again in order of popularity, in Table 4-15.

Vision

Visual acuity standards conform to what is believed to be necessary to perceive and describe situations and evidence accurately, to defend oneself in possible combat, and to be an expert marksman under all conditions. Departments became

less insistent on virtually perfect uncorrected vision after contact lenses, believed more reliable than glasses, were perfected. Table 4-16 presents the most popular visual acuity standards in California.

Table 4-16. Common visual acuity standards of California law enforcement agencies in 1968

Visual Acuity		
Uncorrected Vision	Corrected to	Number of Departments
20/40	20/20	120
20/70	20/30	53
20/30	20/20	25
unspecified	20/20	23
no standard		18
20/30	unspecified	11
20/70	20/20	7
other standard		31
Total		288

Source: State of California, Commission on Peace Officers Standards and Training, A Career in Law Enforcement, October, 1969.

Education

All California police agencies require either a high school degree or a passing score on the Army's high school equivalency examination, the GED (test of General Educational Development). Oakland's requirements here exceed the minimum only by

specifying an acceptable minimum passing score on the GED, 262, which means the candidate scored higher than 70 percent of the people taking the test. It is taken for granted that high school graduation represents a minimum achievement necessary for acceptable trainability, performance and character. More controversial is whether or not the standard should be raised to require some college education.

In favor of raising educational qualifications is the argument that college experience provides essential understanding of the complexities of the economic and social environment in which policemen function, and that, therefore, more educated policemen will be more professional, exercise discretion more intelligently, and perform better generally. Moreover, policemen should not fall behind the rising educational level of the population as a whole. On the other side are the arguments that higher educational levels would exclude many young men who would make fine policemen, that police departments, through their own recruit schools, can provide the necessary general knowledge and specific training, that on-the-job experience is the best teacher, and that the relationship between education and job performance is ambiguous. Also, policemen can be encouraged, through educational incentive programs of all kinds, to continue their education while on the force.

Less than 10 percent of California police agencies require more than high school graduation. Of the 28 agencies that have higher standards, three are State of California agencies, nine require less than 30 units, eight require 30 to 59 units, six require 60 units, one demands an A. A. degree and one demands a B. A. degree.[12] The departments with higher standards which are of most interest to Oakland are Berkeley, San Jose, and Walnut Creek, all of which ask for 60 units of college.

However, as we will show in detail in Chapter 5, the probability of successfully passing through the rest of the Oakland Police Department's testing process, particularly the Mental Adaptability test, is increased by large magnitudes as years of higher education increase from some years of junior college through three to four years of senior college or a college degree. So minimum requirements do not quite tell the whole story.

Filing the Employment Application

If a potential applicant feels that he meets all the specified requirements, he files an employment application. He is asked his name, address, age, sex, marital status, height, weight, birth date, citizenship status, number of dependents, and residence. He is asked if he was ever discharged or forced to resign because of unsatisfactory service. He is asked if he has

ever been "arrested, indicted, summoned into court, convicted, imprisoned, placed on probation or required to pay a fine of more than $25."[13] He is asked for a complete military history, educational history, employment history and medical history. The application is then reviewed by the Civil Service Office staff and either approved or disapproved. It may be disapproved for a number of reasons. First, it may be clear that the applicant does not meet a stated requirement, for example, he is over-age, overweight, under-educated, etc. Secondly, the application may indicate an undesirable citizenship history, which, upon further investigation, is judged unacceptable. Reasons for rejection here include the nature of the arrest record, excessive traffic violations, avoidance of alimony or child support payments, or less than honorable discharge from the military. Thirdly, the application may indicate an undesirable employment history, such as excessive job changing, or discharge for cause. Finally, certain medical conditions will immediately disqualify a candidate, such as a history of back or knee injuries, epileptic attacks, asthma, nervous disorders, etc.

Acceptance of the application means that an individual will be allowed to proceed further through the testing process. If he continues to succeed, all his application statements will be

reviewed again in greater depth in the background investigation and medical examination at the end. Lack of truthfulness here will always be uncovered, and will probably, in itself, be cause for disqualification. A rejected applicant may try to clear up his difficulties, if possible, and apply again.

Approximately 20 percent of all applications are rejected. This means the applicant can proceed no further. Table 4-17 shows the number of applications filed and the number accepted from 1960 to 1970.

Table 4-17. Number of employment applications for Oakland patrolmen filed and accepted, 1960 to 1970

Date	Number Filed	Number Accepted	Percent Accepted
1960	1,185	1,049	89
1961	934	787	84
1962	1,206	963	80
1963	800	726	91
1964	999	809	81
1965	978	837	86
1966	961	732	76
1967	821	549	67
1968	1,518	1,252	82
1969	1,415	1,093	77
1970	1,609	1,149	71

Source: Oakland Civil Service Office

Mental Adaptability Test

Once the employment application has been accepted, the applicant progresses to the Mental Adaptability test. Until November, 1970, this test was either the Otis Self-Administering Test of Mental Ability or the Army General Classification test, both general multiple choice tests of verbal, mathematical and reasoning aptitude. The Otis test, for example, was copyrighted in 1922 and standardized in 1932 in Oakland. Items were selected at that time to discriminate between a good group and a poor group of students. Both groups had reached the same average educational status, but the good group was two years younger than the poor group. "Each item justified its inclusion, therefore, because it distinguished between students who progressed slowly and those who progressed rapidly."[14]

A candidate had to achieve a score of 52, equivalent to an IQ of 110, on the Otis to pass. The passing point was chosen to indicate people who are successful with college curriculums. The passing point "is justified considering the great amounts of material we expect a patrolman to learn and understand."[15]

In November, 1970, the old and allegedly culturally-biased Otis test was replaced by a new, less culturally-biased version, the Otis-Lennon Mental Ability Test, emphasizing "measuring

the pupil's facility in reasoning and in dealing abstractly with verbal, symbolic, and figural test content sampling a broad range of cognitive abilities."[16] The standardization procedures for the new test "were designed to yield a stratified random-cluster sample of pupils representative of United States school pupils enrolled in grades K to 12. The controls used in the selection of these school systems were designed to provide one of the most representative norming studies ever undertaken for an entire test series of this type. Variables used in stratifying school systems were: 1) enrollment, 2) type, i.e., public, private, church-related, 3) a composite socioeconomic index based upon median family income and median years of school completed by adults 25 years and older as reported for the census unit served by the school system, and 4) geographic region.[17] The test items were changed, but the format was similar to the old Otis, except for a greater proportion of non-verbal or figural items.

A candidate had to achieve a score of 45, representative of the midpoint or fiftieth percentile of the nation, equivalent to an IQ of 98, to pass.

Chapter 5 discusses in detail the characteristics for which the Mental Adaptability tests actually seemed to select. We will

Table 4-18. Number of Oakland patrolman applicants taking and passing the Mental Adaptability Test, 1960 to 1970

Date	Number Examined	Number Passed	Percent Passed
1960	772	487	63
1961	506	205	41
1962	564	315	56
1963	534	179	34
1964	629	283	45
1965	606	268	44
1966	592	297	50
1967	439	266	61
1968	765	360	47
1969	566	351	62
1970	595	327	55

Source: Oakland Civil Service Office

defer further discussion until then, except to indicate that only about half the candidates taking this test passed. The number taking the test and the number and percent passing between 1960 and 1970 are presented in Table 4-18.

Civil Service Test

The applicant who has not been weeded out moves on to the Civil Service Test. This is a test written by the Civil Service staff to measure general knowledge. It was designed to "measure a candidate's knowledge on a wide variety of subjects since it was assumed that the candidate who is well informed will make a

better policeman."[18] The typical test contains 100 multiple choice questions, 50 on general knowledge, 35 on current events, and 15 on analytical ability, usually reading comprehension. A score of 70 out of the 100 questions was needed to pass.

About 82 percent of the candidates who took the test passed it. This test, too, will be analyzed in detail in Chapter 5.

Physical Agility Test

The Physical Agility Test is revealed on the job announcement for the patrolman examination which is posted around the city and enumerates the other requirements. It consists of five exercise events to be completed in order with approximately three minutes rest between events. Candidates are scored on form as well as number completed. The events are:

Squat thrusts: 25 required in one minute's time
Sit-ups: 25 required
Push-ups: 22 required
Squat jumps: 27 required
Pull-ups: 6 required[19]

The Physical Agility Test, like the height and weight requirements, rests on the assumption that strength and physical skills may be needed on the job, and candidates who are insufficiently fit should be dropped. Between 1960 and 1970, 86 percent

of the candidates who took the Physical Agility Test passed it.

Oral Examination

Next, the candidate is scheduled for an oral examination, which only 54 percent passed between 1960 and 1970. The interview is conducted by two police officers and one representative of the Civil Service Office. The candidate is judged on appearance, bearing, and manner, ability to present ideas, social adaptability, alertness, judgment, emotional stability and interest. If he fails in any one area, he is judged clearly unacceptable. If he gets an overall rating of less than 70 percent, he does not pass.

The interviewers have the candidate's employment application in front of them and probe his personal history in depth. He will be asked about any problems suggested by the application, such as a divorce or separation, a complicated work or school history, reasons for job changes, etc. The honesty and attitudes revealed by his approach to the questions are as important as the answers themselves.

In the early 1960's, a great deal of emphasis was placed by oral boards on appearance and bearing, on command presence, on how impressive a man might look in uniform. Stress inter-

view techniques were also used. The candidate was placed in a hypothetical difficult situation and asked to respond to it; the interviewers would then seize his answers and try to box him into an even more difficult situation. They were seeking to evaluate his logical thought processes when making decisions, his moral fiber, and how well he "stood up to the heat."

Stress interview techniques and emphasis on command presence have been dropped in favor of attempting to find out what the candidate knows about Oakland and the police job. Attitudes toward the minority community and its problems are probed. The board wants to know why the candidate is applying for the job, what other jobs he has applied for, why he is interested in Oakland. It seeks to evaluate, as well, his reasonableness. Can he accept, for example, that there are things in the world that he cannot handle, that he is not going to save the world? The oral also serves to screen out the clearly maladjusted or psychologically disturbed.

We will have some more to say about the results of the oral in Chapter 5.

Medical Test

After passing the oral, a candidate is scheduled for an extensive medical and laboratory examination by the city

physician. Twenty percent of the candidates are eliminated by the doctor, whose decisions are final. The doctor evaluates the candidate's physical condition both from the point of view of his ability to perform a strenuous and stressful job successfully and of the city's financial interests. Because of the extensive health benefits enjoyed by policemen, the city is very careful to minimize its risks and to refuse employment to anyone with a potential medical problem. All doubts here are resolved by the physician in favor of the city.

Psychiatric Evaluation

The psychiatric evaluation consists of clinical paper-and-pencil tests, a Rorschach test, and a personal interview by the department's psychiatrist, which discusses such questions as the candidate's most memorable dream. It is most effective in revealing any extreme personality deviance that was not picked up in the oral. Designing good psychiatric tests is a subject all its own, which we will not begin to tackle here. The experience of the Oakland department psychiatrist has led him to believe that some potentially effective indicators of successful police performance are a non-defensive Rorschach and intense affect reported in dreams, indicative of ability to feel.[20] Also positive, he thinks, are such background factors as being a family man,

having a stable childhood with no step-father and an active father, and having a positive social attitude.[21] In any case, 96 percent of the candidates pass the psychiatric evaluation.

Background Investigation

The last hurdle is the background investigation. An Oakland police officer is assigned to check out the candidate thoroughly. He visits the candidate's neighborhood and makes inquiries of friends, neighbors, local businessmen; he interviews the candidate's wife and family; he visits schools attended and past employers. Criminal and credit records are checked. All leads are followed. Eighty-eight percent of the candidates between 1960 and 1970 passed the background investigation. All background rejections must be reviewed and approved by the chief of police. Rejected candidates have the right to appeal.

Barriers to Entry

Clearly, all these hiring standards and tests combine to restrict seriously the potential available labor supply. The Oakland Police Department itself did some rough calculations of their effects. The conclusion was that less than half of one percent of Oakland's population in 1969 would be eligible to commence the testing and approximately one-tenth of one percent of Oakland's population would pass successfully through

the selection process. If the male population 21 to 32 years of age is used as a base, still only slightly over 2 percent of that group would succeed in the tests.[22] It is no wonder that national recruiting campaigns were launched.

We turn now to the empirical analysis. We shall describe the economic characteristics of the applicants who are successful on the Mental Adaptability, the Civil Service Test, and the oral examination.

CHAPTER 4

FOOTNOTES

1. U. S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census, 1970 Census of Population, Detailed Characteristics, California, Section 1 (PC (1)-D6Calif.), pp. Calif. 6-1823 to 6-1828, Table 175.

2. U. S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census, 1970 Census of Population, Detailed Characteristics, California, Section 2 (PC (1)-D6Calif.), pp. Calif. 6-2336 to 6-2338, Table 197 and 1970 Census of Population, General Social and Economic Characteristics, California, Appendix B, pp. app. 25 to app. 27.

3. Estimates provided by the Oakland Civil Service Office

4 Taken from the City of Oakland announcement for Patrolman Examination, September, 1970.

5. Ibid.

6. Ibid.

7. Ibid.

8. See Raymond L. Bancroft, "Municipal Law Enforcement, 1966," Nation's Cities, February, 1966, pp. 15-17. "The Nation's police departments are encountering serious difficulty in maintaining their forces at authorized strength. A survey conducted by the National League of Cities in 1966 disclosed that over 65 percent of the departments surveyed were understaffed; that these departments were 5, 840 officers, or 5 percent, below authorized strength; and were 11, 864 officers, or 10 percent, below preferred strength... Since, on the average, police departments are currently 5 percent below authorized strength, since the authorized strength of police departments has increased at the rate of approximately 3 percent each year, and since an average of 5. 4 percent of existing personnel leave their departments

each year (due to resignation, dismissal, retirement, or death), 50,000 new police officers will be needed in 1967 alone."

9. State of California, Commission on Peace Officers Standards and Training, A Career in Law Enforcement, October, 1969.

10. See the arguments in defense of height and weight requirements in the recent local court cases: Veragene Hardy vs. William F. Stumpf, 1 Civ 32689, Court of Appeal, State of California, First Appellate District, Division 3, March 15, 1974; and Joan Hail vs. James S. White, U. S. District Court, Northern California, September 19, 1973. See also J. Stanley Pottinger, Brief for the United States as Amicus Curie, No. 74-1038, filed with U. S. Court of Appeals, Ninth Circuit, April 5, 1974, in the pending appeal of Hail vs. White, 29 pp.

11. See the testimony of Oakland Police Sergeant Anderson and International Association of Chiefs of Police research scientist Terry Eisenberg in Hail vs. White, op. cit.

12. State of California, Commission on Peace Officers Standards and Training, A Career in Law Enforcement, October, 1969.

13. City of Oakland, Employment Application.

14. Arthur S. Otis, Otis Self-Administering Tests of Mental Ability, Manual of Directions and Key (Revised) for Intermediate and Higher Examinations, New York: Harcourt, Brace and World, 1922.

15. Oakland Civil Service Office memorandum, "Oakland Police Department Recruitment and Patrolman Selection Process," December, 1964.

16. Arthur S. Ctis and Roger T. Lennon, Otis-Lennon Mental Ability Test, Manual for Administration, New York: Harcourt, Brace and World, 1967, p. 4.

17. Ibid., p. 23.

18. Oakland Civil Service Office memorandum, "Oakland Police Department Recruitment and Patrolman Selection Process," December, 1964.

19. City of Oakland announcement for Patrolman Examination, September, 1970.

20. Dr. Floyd O. Due, "History and Personality Characteristics Favoring Success as a Police Officer," 1972 unpublished paper.

21. Ibid.

22. Oakland Police Department, "Demographic Analysis," unpublished memorandum.

CHAPTER 5

THE EMPIRICAL ANALYSIS OF SELECTION TESTS

This chapter attempts to specify the characteristics for which the Oakland Police Department's selection process between 1965 and 1971 is testing. It is a beginning in observing and defining the elusive vector of hiring standards.

THE DATA

This study is based on information gathered from the employment applications of all applicants to the Oakland Police Department from 1965 to June, 1971. Only individuals for whom all relevant information was available were included. Therefore, the total number of applicants included in the study, 2,36 is less than the total actually tested. For example, all applicants for whom military service represented the only employment experience would be eliminated because no meaningful salary observation would be available for them, given the incomparability of military and civilian wages. Sufficient applicants for whom all information is available remain so there should be no serious inherent bias in the study arising from necessary elimination.

One critical variable is missing for the bulk of the study. We have no indication of minority status, because the Fair

Employment Practices laws in this time period prohibited any indication of race on employment applications or processes. Today, these laws insist on the collection and reporting of such data. Explicit data on minority status became available only in 1971. Therefore, a separate analysis of 213 applicants in the first part of 1971 will be made in order to pay particular attention to the minority data.

CENTRAL QUESTIONS

What characteristics would be expected to determine success or failure on the battery of selection tests used by the Oakland Police Department? Why would each characteristic be included? What independent effect would it be expected to have? How could it be measured?

We will be primarily concerned with explaining performance on the Mental Adaptability test, the Civil Service test, and the oral personal interview. We will consider both the determinants of the probability of success on each test and the determinants of the raw score. For each test, the following specific questions will be asked: 1) passing the test is a function of what significant variables? 2) a unit increase (decrease) in an independent variable will raise (lower) the probability of passing the test by how much? 3) test score is a function of what significant variables? 4) a

unit increase (decrease) in a particular variable will raise (lower) the test score by how much? We will consider the same set of independent variables for each test.

DEPENDENT VARIABLES

The dependent variables, therefore, are:

MA_1 = probability of passing Mental Adaptability test

MA_2 = score on Mental Adaptability test

CST_1 = probability of passing Civil Service test

CST_2 = score on Civil Service test

OR_1 = probability of passing Oral exam

OR_2 = score on Oral exam

We will also consider briefly the probability of passing the Physical Agility test, PA.

INDEPENDENT VARIABLES

Years of Education

We would expect that the probability of success on the tests would be greater for applicants with more education, i.e., someone with three to four years of college would be more likely to succeed than would a high school graduate. People with college experience are likely to be better test performers (or have higher measured I.Q.'s) than people without. Knowledge or

ability absorbed in college may help to pass tests. The debate in professional police circles about the desirability of requiring college education, and how much, if any, should be required, has not been resolved. Yet the belief that better educated people may be better able to deal well with the myriad challenges of police work is widespread, although it has been neither proved nor disproved. It is accompanied by the concern of police departments with professional image. Since education is a prerequisite to professionalism, better educated men are desirable to upgrade the department's image. Police departments also provide a considerable amount of on-the-job training (Oakland has a 20-week recruit school) and educational experience indicates trainability. (It is known from human capital literature that the better educated receive the most on-the-job training.) Also, the department can benefit from the general human capital already embodied in education. Therefore, it is hypothesized that both qualities inherent in the educated and policy decisions of police departments which are consciously or unconsciously incorporated into selection test design combine to increase the probability of passing as education increases. In order to determine just how sensitive the probability of passing is to differences in educational levels, and because of the policy interest of the results, education will be

measured in rather fine breakdowns. Junior college and college will be considered separately because their products may be quite different. The education variable is specified as follows:

J_0 = no junior college or college

J_1 = less than one year of junior college

J_2 = one year of junior college

J_3 = more than one to two years of junior college

J_4 = more than two years of junior college

J_5 = A. A. degree

C_0 = no college

C_1 = less than one year of college

C_2 = one but less than two years of college

C_3 = two but less than two years of college

C_4 = three to four years of college

C_5 = B. A. or B. S. degree

If an applicant reported both junior college and college experience, the junior college years were combined with the college years and reported in the college category. Overlapping was therefore avoided and the junior college category includes only individuals whose sole experience is with junior college.

Residence

The philosophy of residence requirements is also in flux.

Historically, rules requiring policemen and other city employees to live in their city were common. The movement of the middle class to suburbia and the rise of the concept of the professional policeman led to an elimination of residency requirements. Oakland, in the forefront of the trend, dropped its residency requirement in November, 1955, and launched a campaign of nation-wide recruitment of police which became increasingly extensive until 1969. Today, the pressures of unemployment and minority politics are leading some cities to consider re-adopting residence rules for city employment. Oakland, in fact, added a residence preference rule in the fall of 1971. It dropped its elaborate nation-wide recruiting campaigns in 1969 in response to the pressures mentioned above and to anti-police demonstrations encountered on some campuses.

Residence at the time of application will be classified into three groups:

R_0 = out-of-state residence

R_1 = Oakland area residence

R_2 = other California residence

On one hand, Oakland area residents might be expected to have a higher probability of success than others because of a greater degree of familiarity with Oakland and its problems and

police force. On the other hand, people from out of the area have invested considerably more time in search activity to discover the Oakland Police Department and become interested. Hence, they may be more committed, motivated or professional than an Oakland resident who needed only to come in off the street. Also, people from out of the area are more likely to have assessed their chances of success before applying; the higher cost of applying for them would lead to more self-selection. It seems unclear a priori whether the positive or negative effect of living in the Oakland area will prevail.

Minority Status

It is well known that members of minority groups are less likely to pass standardized written tests which are not "culture free" than majority members, at the same passing point. Therefore, we would expect, other things being equal, minority status per se would lower the probability of passing the tests. Unfortunately, except for the first six months of 1971, we do not have data to test directly this critical question. We will analyze the first few months of 1971 separately to cast the light of even a small amount of data on the matter. For that analysis

M_0 = majority member

M_1 = black, Spanish-speaking, Oriental, Filipino, and other minority.

Whereas it would be desirable to analyze each minority group separately, there is an insufficient amount of data to attempt to do so.

In an attempt to analyze the influence of minority status even indirectly, proxies were sought for the study as a whole. It is hoped that given the pattern of migration of blacks to Oakland, a disproportionate number of applicants who attended high school in the South would be black, and therefore a variable indicating region of high school attendance would pick up some of the influence of race. However, we also know that education in the South may be inferior even for whites, so the variable may be measuring only generally poor schools in the South. In either case, attending high school in the South would lower the probability of passing the test. The variable is probably measuring some combination of race and inferiority of schools.

H_0 = attended high school in West, North Central or Northeast

H_1 - attended high school in South

Specific Police Training or Experience

It could be hypothesized that specific police training or experience as manifested by studying police science in college or attending non-college police school or previous employment

as a policeman would increase an applicant's probability of success. The department could benefit from the specific human capital embodied in the person. Moreover, motivation, interest, sincerity, would be demonstrated by the individual's own investment in acquiring specific training. The effect of studying police science in college or attending non-college police school is expected to be weaker than that of actual experience as a policeman. Since the department has its own elaborate training program, the courses may be extraneous and bear the risk of having to reverse misconceptions. Experience as a policeman, however, implies at least some knowledge of the realities of the job, although perhaps in a very different setting, some concrete experience, and an application choice based on rational assessment. Also, the man is likely to have passed a similar body of tests elsewhere and the department can reap the benefit of another department's appraisal and performance evaluation.

PS_0 = did not study police science in college

PS_1 = studied police science in college

PSC_0 = did not study in non-college police school

PSC_1 = studied in non-college police school

P_0 = no previous employment experience as a policeman

P_1 = previous employment experience as a policeman

Previous Wage

It is hypothesized that applicants from higher wage groups will be more likely to succeed than applicants from lower wage groups, other things equal. Past wage or salary classification should be indicative of alternative worth, human capital accumulation, or marginal productivity. Other things equal, an individual from a higher salary group should be more valuable and desirable to the police department than an individual from a lower salary group. Also, higher salaries indicate past success and possession of such all-American virtues as ambition, motivation, productivity, etc. The interpretation here obviously has to be modified if some of the observations on the lower end of the scale represent people working part-time while in college or other non-standard departures from full-time entry into the world of work.

W_0 = earning less than $300 per month on last job

W_1 = $300-$499 per month on last job

W_2 = $500-$699 per month on last job

W_3 = $700 or above per month on last job

We have not corrected for the general rise in wages between 1965 and 1971. We assume our broad categories retain their validity.

Number of Jobs Enumerated

More jobs enumerated indicate more experience which may be desirable and increase the probability of success. Alternatively, except for such jobs as carpenter, it may indicate instability or emotional problems, and therefore decrease the probability of success, particularly on the oral exam. It is not clear a priori which effect will predominate. Number of jobs is included here as a continuous variable.

E = number of jobs enumerated

Age

The older a person is at a given educational level, the less likely he is to pass a standardized test. Knowledge and test-taking ability depreciate. Therefore, we expect age, entered as a continuous variable, to have a negative effect on the probability of passing the first two tests. However, if the oral is testing for maturity, among other things, age may have a positive effect on the probability of passing the oral.

A = age (in years)

Physical Qualities

Physical qualities may have some effect on ability to pass the physical agility, which will be discussed briefly, so we will include:

B = height (in inches)

C = weight (in pounds)

METHODOLOGY

The effect of a unit increase (decrease) in an independent variable on the probability of passing each test and on the raw score will be explored through a multiple regression analysis. For the probability equations the dependent variables will take on the binary values 0 = failure, 1 = success. For the raw score equations the dependent variables will have the conventional continuous form. The problem with using regression analysis for the dichotomous case is that the Gauss-Markov assumption that V = I, i.e., that the disturbance variances are constant from observation to observation (homoscedastic) is untenable. It is also possible, since the model is linear, to obtain probabilities greater than one. A probit analysis model would correct these problems. A probit program was obtained and experimented with, but unfortunately proved to be inordinately expensive, at least three times the cost of the multiple regression program. Moreover, for those equations run on both programs, the probit and regression analyses yielded the same results. Some of the equations reported for the small sample separate analysis

of 1971 data do have the problem of probabilities greater than one. However, only multiple regression results will be reported.

The equations will contain two continuous variables, age (A) and number of jobs enumerated (E). All other independent variables will enter as sets of dummy variables as defined above and summarized here for convenience:

J_0 = no junior college or college

J_1 = less than one year of junior college

J_2 = one year of junior college

J_3 = more than one to two years of junior college

J_4 = more than two years of junior college

J_5 = A. A. degree

C_0 = no college

C_1 = less than one year of college

C_2 = one but less than two years of college

C_3 = two but less than three years of college

C_4 = three to four years of college

C_5 = B. A. or B. S. degree

R_0 = out-of-state residence

R_1 = Oakland area residence

R_2 = other California residence

M_0 = majority member

M_1 = minority member

H_0 = attended high school in West, North Central or Northwest

H_1 = attended high school in South

PS_0 = did not study police science in college

PS_1 = studied police science in college

PSC_0 = did not study in non-college police school

PSC_1 = studied in non-college police school

P_0 = no previous employment experience as a policeman

P_1 = previous employment experience as a policeman

W_0 = earning less than $300 per month on last job

W_1 = $300-$499 per month on last job

W_2 = $500-$699 per month on last job

W_3 = $700 or above per month on last job

E = number of jobs enumerated

A = age

K = constant

In each case, the X_0 category (J_0, C_0, R_0, H_0, PS_0, PSC_0, P_0, W_0) indicates the reference category which is omitted from the regression in order to avoid a perfect linear relationship among the dummy variables in each set.

The equations, therefore, take the following form:

1. $MA_1 = K + A + b_1J_1 + b_2J_2 + b_3J_3 + b_4J_4 + b_5J_5 + c_1C_1 + c_2C_2 + c_3C_3 + c_4C_4 + c_5C_5 + d_1R_1 + d_2R_2 + e_1H_1 + f_1PS_1 + g_1PSC_1 + h_1P_1 + i_1W_1 + i_2W_2 + i_3W_3$

where $b_1 \ldots . b_5$ represent the net (partial) regression coefficient

$c_1 \ldots . c_5$ of dummy variables $J_1 \ldots . J_5$, $C_1 \ldots . C_5$, etc.

etc.

Each regression coefficient is to be interpreted as an estimate of the net effect on the probability of an applicant being successful of his belonging to the particular category in question rather than to the reference category, all other variables remaining constant. For example, a coefficient of .33 on C_4 would mean that having three to four years of college would increase an applicant's chance of passing the MA by .33 probability points over his chance of passing if he had no college, other things equal. For example, suppose that if an applicant were in the reference group in all categories, he would have a .50 probability of passing; if he remained in the reference group in all categories but education, and now had three to four years of college, his probability of passing would now be .83, surely a significant increase.

The raw score equations (MA_2, CST_2, OR_2) are of

identical form but deal with actual raw scores. A coefficient of 9.71 on C_4 would mean that, other things equal, having three to four years of college rather than no college would raise the score on the MA 9.71 points, say from a reference group mean of 60 to 69.71.

A word of caution should be added in interpreting the raw score equations. Results will be reported based on the experience of all applicants from 1965 to 1971. The meaning of the score does not remain the same, but changes throughout the time period, particularly between test revision dates. As the test ages, items lose validity and may be eliminated and the raw score passing point may be lowered from, say, 55 when the test was designed to 48 eight months later. This is a problem particularly for the CST. Also, for the purpose of research and to determine if lowering pass points on test scores lowered the quality of manpower, the minimum passing point on the MA was lowered from 52 to 48 to 40, during the time period reported. These problems could be dealt with by analyzing each relevant period separately, but the results reported here will be aggregate and incorporate these difficulties.

If the probability equation results and the score equation results, each with their own technical difficulties, seem to

indicate the same conclusions, perhaps the technical difficulties are not critical for our purposes.

RESULTS

Mental Adaptability

The results for the Mental Adaptability test are based on the information contained in the employment applications of 2,366 individuals tested between 1965 and 1971. Table 5-1 summarizes the number applying in each category, the number successful in each category, and the percent successful in each category.

Of those who did not attend junior college or college, 25.7 percent were successful. We can see, therefore, by looking simply at the percent distribution that education makes a difference; 87.6 percent of those with a B.A. or B.S. degree and 83.9 percent of those with three to four years of college passed the test. Percentages are useful descriptive devices. Multiple regression analysis will enable us to say how much of the increased probability of passing the MA is due to the independent effect of having three to four years of college or to having a B.A. or B.S. rather than no college, holding all other variables constant.

The multiple regression results for the probabilities of

Table 5-1. Percent of applicants in each non-reference category successful on the Mental Adaptability

Category	Total Number Applicants	Total Number Successful	Percent of Applicants Successful
Total	2,366	1,375	58.1
J_1	422	251	59.5
J_2	148	95	64.2
J_3	232	154	66.4
J_4	244	187	76.6
J_5	44	31	70.5
C_1	156	112	71.8
C_2	110	90	81.8
C_3	38	29	76.3
C_4	87	73	83.9
C_5	194	170	87.6
R_1	1,315	710	54.0
R_2	713	447	62.7
H_1	302	109	36.1
PSC_1	91	59	64.8
PS_1	437	295	67.5
P_1	213	151	70.9
W_1	917	506	55.2
W_2	754	423	56.1
W_3	256	178	69.5

passing each test and the raw scores on each test are summarized in Table 5-2 on the following page. The results for the probability of an applicant passing the Mental Adaptability test are found in column 1 of that table. Each coefficient represents the increase or decrease in the probability of passing resulting from being in the specified category, rather than in the reference group. For example, the probability of a person in category C_4 passing the

Table 5-2. Regression coefficients, all applicants, 1965 to June 1971

	(1) MA_1	(2) CST_1	(3) OR_1	(4) MA_2	(5) CST_2	(6) OR_2
K	.799**	.811**	.507**	55.30**	54.02**	60.69**
	(.094)	(.071)	(.145)	(2.33)	(2.84)	(4.02)
A	-.015**	.002	.008	-.36**	.16	.45**
	(.004)	(.003)	(.006)	(.09)	(.12)	(.16)
J_1	.083**	.013	-.063	2.36**	1.43	-.69
	(.027)	(.021)	(.043)	(.67)	(.83)	(1.19)
J_2	.121**	.041	.055	3.55**	1.94	3.04
	(.041)	(.030)	(.060)	(1.01)	(1.20)	(1.67)
J_3	.124**	.049	.023	3.83**	1.08	2.04
	(.036)	(.026)	(.052)	(.88)	(1.03)	(1.44)
J_4	.134**	.064**	-.053	3.29**	.20	-.60
	(.036)	(.024)	(.048)	(.88)	(.97)	(1.33)
J_5	.116	.015	.097	2.85	1.36	5.70
	(.073)	(.051)	(.111)	(1.79)	(2.03)	(3.09)
C_1	.180**	.045	.041	3.50**	2.72*	.81
	(.039)	(.027)	(.054)	(.96)	(1.09)	(1.50)
C_2	.294**	.038	.060	8.13**	1.30	3.66*
	(.046)	(.030)	(.061)	(1.13)	(1.20)	(1.70)
C_3	.252**	.071	.035	8.00**	7.15**	.87
	(.076)	(.051)	(.108)	(1.88)	(2.03)	(3.02)
C_4	.334**	.102**	.143*	9.71**	7.38**	3.05
	(.052)	(.033)	(.069)	(1.28)	(1.34)	(1.91)
C_5	.347**	.081**	.008	9.93**	7.24**	1.45
	(.037)	(.024)	(.049)	(.91)	(.96)	(1.35)
R_1	-.025	.022	-.124*	-2.74**	-3.41**	-.99
	(.031)	(.023)	(.053)	(.77)	(.92)	(1.47)
R_2	-.003	.010	-.172**	-1.34	-2.95**	-.24
	(.033)	(.024)	(.054)	(.81)	(.96)	(1.51)
H_1	-.191**	.058*	.054	-7.35**	.59	1.51
	(.029)	(.027)	(.058)	(.73)	(1.10)	(1.62)
PSC_1	.045	-.008	.100	1.40	-.23	2.27
	(.051)	(.037)	(.073)	(1.24)	(1.47)	(2.03)
PS_1	-.012	.026	.061	-2.00*	-.10	1.64
	(.028)	(.020)	(.040)	(.69)	(.80)	(1.12)
E	.005*	.0007	.0001	.02	-.10	.04
	(.003)	(.007)	(.005)	(.06)	(.10)	(.13)
P_1	.078*	.028	.179**	2.30*	2.40*	5.07**
	(.036)	(.026)	(.054)	(.90)	(1.03)	(1.49)

Table 5-2, continued

W_1	.002	-.012	-.095*	.66	-1.43	-2.76**
	(.028)	(.021)	(.043)	(.68)	(.84)	(1.20)
W_2	.029	-.011	-.048	.64	-1.51	-2.03
	(.030)	(.023)	(.047)	(.74)	(.91)	(1.29)
W_3	.155**	.042	-.086	2.95**	-2.62*	-3.86*
	(.040)	(.029)	(.057)	(.97)	(1.15)	(1.59)

* = .05 level of significance
** = .01 level of significance

test is .334 points greater than that of a person falling into category C_0, other things equal: the probability of a person in category H_1 passing the test is .191 points less than that of a person the same in all other ways but falling in category H_0. The numbers in parentheses under each estimate give the standard error of the estimate. The * or ** indicates that the estimate is statistically significant at the .05 and .01 levels respectively.

Education. - We see that attending junior college has a positive effect over not attending junior college (or college) on the probability of passing the MA, ranging in magnitude from .083 (J_1) to .134 (J_4). All the coefficients except J_5 are statistically significant at the 1 percent level of confidence and increase in magnitude as years of education increase. Suppose that the probability of success for a person in the reference group in all categories (i.e., J_0, C_0, R_0, H_0, PSC_0, P_0, W_0) was .255; if he remained in the reference group in all other categories but moved to J_4, his probability of success would jump by .134 to .389.

All the coefficients of the college variable are positive, statistically significant at the 1 percent level, and higher than any of the junior college coefficients, ranging in magnitude from

. 180 to . 347. If the probability of success for a person in all the reference groups was . 255, if he remained in the reference category everywhere else but moved from C_0 (no college) to C_5 (B. A. or B. S.), his probability of passing would increase to . 602.

Thus, while college is not required for Oakland Police Department applicants, it significantly increases the probability of passing the MA by large magnitudes.

MA_2, in column 4 of Table 5-2, translates these effects into absolute increases in score. All education coefficients but J_5 are statistically significant at the 1 percent level; junior college attendance would increase the raw score between 2. 36 and 3. 83 points more than it would be without attending junior college; senior college attendance would increase the raw score from 3. 50 (C_1) to 9. 93 (C_5) points over what it would be without attending college.

Residence. - Living in the Oakland area or elsewhere in California rather than out of the state has a weak (i. e., not statistically significant) negative effect on the probability of passing the MA; living in the Oakland area has a significant effect, however, on the score, decreasing it by 2. 74 points. These results may represent an interaction between positive and negative effects of local residence discussed above. The

differences between the probability and score effects may be partially explained by the fact that sometimes favorable administrative decisions may be made in favor of an occasional Oakland resident, particularly of a minority group, allowed to proceed through the testing process at a lower score than normally considered passing.

Attending high school in the South. - Attending high school in the South is significantly different at the 1 percent level from attending high school in any other U.S. region. It lowers the probability of success by .191 and the score by 7.35 points. It is probably measuring the combined effects of a high relative number of blacks in the category and generally inferior southern high schools.

Specific police training or experience. - Having attended non-college police school has a small, positive, not statistically significant effect on the probability of success and the score.

Having studied police science in college has a negative but not statistically significant effect on the probability of success and a negative statistically significant effect on the score, decreasing it by two points. The negative sign is explained by the fact that almost 90 percent of the police science students come from junior college rather than college.

Job experience as a policeman has, as predicted, a positive statistically significant effect on both the probability of passing (.078) and the score (2.30).

Previous wage. - Only the highest wage category, $700 or more per month, is significantly different from $0-$300 per month; it increases probability of success by .155 and score by 2.95 points. A salary of $700 a month or above in the period 1965 to 1971 indicates a professional or managerial job or success as a salesman, insurance agent, independent proprietor, or skilled craftsman. It is not surprising, therefore, that it is indicative of greater ability in passing the MA than a lower salary. It is interesting that salary becomes important as an explanatory variable only at such a relatively high threshold rather than in continuous gradations. This may partially reflect an imperfectly defined reference group which may include within it part-time workers who are college students, for example. It may also be an interesting reflection of the imperfect nature of the American wage and salary structure.

Age. - Age, a continuous variable, has the predicted negative effect; an increase of one year of age would decrease the probability of passing by .015 and the score by .36. The coefficients are statistically significant and small in magnitude. The mean age of the applicants is 23 years, 10 months.

Number of jobs enumerated. - Number of jobs enumerated, also a continuous variable, has a statistically significant, very small (.005) positive effect on the probability of passing and a statistically insignificant effect on the score. The mean number of jobs enumerated is 3.77.

Civil Service Test

One thousand 375 applicants successful on the MA took the Civil Service test; 1,266 or 92.1% of them passed it. Therefore, there is not much variance in performance to explain and we would expect few statistically significant coefficients. Only three of the education variables now stand out from their reference groups: having more than two years of junior college increases the probability of passing by .064 over no junior college; having three to four years of college increases the probability of passing by .102 over no college; and having a B.A. or B.S. increases the probability of passing by .081 over no college. In the score equations, none of the junior college variables are significantly different from no junior college. All the college variables except C_2 have significant effects on the score, with C_3, C_4 and C_5 all increasing the score more than 7 points above C_0. C_4 and C_5, so important to MA performance, are still differentially important here.

The residence variables have no significant effect on the probability, but decrease the score by 3.41 (R_1) and 2.95 (R_2) respectively.

Attending high school in the South is no longer significant, having already weeded out those it would. Age, number of jobs enumerated, PSC_1 and PS_1 are also not significant. P_1 and W_1 are not significant for probability but add more than two significant points apiece to score.

Oral Exam

Between the Civil Service test and the Oral is the Physical Agility, which will be discussed briefly later. Of 1,093 people taking the oral exam, 607 or 55.5 percent passed. Their categorical distribution is summarized in Table 5-3.

The oral exam is conducted by a board of three: two police officers, one Civil Service representative. Its philosophy has been changing from an emphasis on selection for command presence, verbal ability, logical thought processes, moral feelings and social awareness to include knowledge about Oakland, its problems and its minority population. The oral has not changed in its attempt to screen as well for responsibility, stability, reasonableness and some understanding of the function of the job. Since the exam is set up to test for qualities more

Table 5-3 Percent of applicants in each category successful on the oral exam

Category	Total Number Examined	Total Number Successful	Percent of Examined Successful
Total	1,093	607	55.5
J_1	202	102	50.5
J_2	79	48	60.8
J_3	130	76	58.5
J_4	164	85	51.8
J_5	21	15	71.4
C_1	96	56	58.3
C_2	72	43	59.7
C_3	21	12	57.1
C_4	58	43	74.1
C_5	136	78	57.4
R_1	597	320	53.6
R_2	367	189	51.5
H_1	80	51	63.8
PSC_1	49	35	71.4
PS_1	248	153	61.7
P_1	114	87	70.2
W_1	390	195	50.0
W_2	334	195	58.4
W_3	159	88	55.3

amorphous than economic variables can define, we would expect our variables to have less explanatory power for oral exam performance than for the original written screening.

There is no particular reason to expect, for example, that education would be correlated with the above qualities, particularly since that would imply an effect over and above the one already exercised in allowing the applicant to reach the oral stage. None

of the junior college categories are significant; C_4 has a significant positive effect of .143 on the probability of passing; C_2 has a significant positive effect of 3.66 on the score.

Oakland area residence has a significant negative effect of .124, other California residence a significant negative effect of .172, on the probability of passing. Neither has a significant effect on the score. The considerably increased investment required of an out-of-state resident to get to the oral stage is in itself an indication of some of the qualities sought by the oral and helps to explain the results. This may be offset in the 1970's by a shifting emphasis to knowledge of Oakland and its problems.

Also, as would be expected, previous employment experience as a policeman has a significant positive influence on both success and score, increasing the probability of success by .179 and the score by 5.07 points, the largest significant coefficients found on any explanatory oral variables. Experienced policemen may have already been screened for similar qualities to obtain their previous jobs; they would have had oral exam experience; they certainly could be expected to be more likely to exhibit command presence, verbal ability, social awareness, responsibility, stability, reasonableness and a superior understanding of the job.

The salary variables behave erratically, with negative coefficients in relation to the reference group significant for W_1 on both the probability and the score and for W_3 for the score. The W_1 effect is reasonable given the fact that oral boards are suspicious of people who would experience a large jumb in salary by becoming policemen, and the reference group, particularly at this point, may contain some college students or others earning part-time salaries. The W_3 score coefficient is strange, particularly since its probability coefficient is positive but not significant.

There is an interesting change in the sign of the age variable, negative for the standardized written test, now becoming positive and significant for the oral score. This offers confirmation to the desire of the oral board to screen for some evidence of maturity.

Physical Agility

For curiosity, and because the data were available, we ran the probability of passing the physical agility test against the same explanatory variables plus height and weight. Out of 1, 270 taking the exam, 1, 093, or 86 percent, passed it. Age had a negative effect of .011 on the probability of passing, statistically significant at 1 percent. Height had a negative

effect of .007 on the probability of passing, statistically significant at 5 percent. None of the education variables were significantly different from high school graduation except possession of the A.A. degree, which had a negative effect of .133. Most interesting is that residence in the Oakland area had a positive effect of .253 (significant at 1 percent) and residence elsewhere in California a positive effect of .227 (significant at 1 percent) over out-of-state residence. Oakland and California residents may be more familiar with the requirements of the test, which are publicized in the announcement; they may have access to gymnasium facilities in which to practice; and it is significantly easier for them to return and re-take the test should they fail it the first time.

The only other significant variable was W_3, positive, .095, perhaps indicative of higher drive and motivation to succeed in higher income earners.

1971 Equations, Including a Minority Status Variable

The 213 applicants in the first few months of 1971 for whom minority-majority status data were available were distributed among the categories as shown in Table 5-4.

It is immediately apparent that minority group members have a much lower percent passing the Mental Adaptability,

Table 5-4. Percent of 1971 applicants in each non-reference category successful on the Mental Adaptability

Category	Total Number Applicants	Total Number Successful	Percent of Applicants Successful
Total	213	162	76.1
J_1	37	26	70.3
J_2	13	10	76.9
J_3	32	25	78.1
J_4	41	37	90.2
J_5	11	7	63.6
C_1	16	15	93.8
C_2	16	15	93.8
C_3	1	1	100.0
C_4	6	5	83.3
C_5	25	23	92.0
R_1	131	92	70.2
R_2	73	63	86.3
H_1	24	8	33.3
PSC_1	9	8	88.9
PS_1	48	38	79.2
P_1	12	11	91.7
W_1	62	48	77.4
W_2	63	47	74.6
W_3	51	39	76.5
M_1	44	21	47.7

47.7, than average, 76.1, and than any non-reference category except attended high school in the South, which picks up some of the same effects.

It is of interest also to compare the percent of total applicants in each category for whites and minority members (Table 5-5).

Table 5-5. Percent of white and minority members in each non-reference category

Category	White		Minority	
	Number	Percent	Number	Percent
Total	169	100.0	44	100.0
J_1	30	17.8	7	15.9
J_2	10	5.9	3	6.8
J_3	26	15.4	6	13.6
J_4	33	19.5	8	18.2
J_5	8	4.7	3	6.8
C_1	14	8.3	2	4.5
C_2	15	8.9	1	2.3
C_3	1	0.6	0	0.0
C_4	3	1.8	3	6.8
C_5	20	11.8	5	11.4
R_1	94	55.6	37	84.1
R_2	67	39.6	6	13.6
H_1	10	5.9	14	31.8
PSC_1	8	4.7	1	0.2
PS_1	37	21.9	11	25.0
P_1	9	5.3	3	6.8
W_1	52	30.8	10	22.7
W_2	49	29.0	14	31.8
W_3	41	24.3	10	22.7

White applicants are 80 percent, minority applicants are 20 percent of the total number of applicants. Of the white applicants, 5.3 percent, and 13.7 percent of the minority applicants had no higher education beyond high school graduation, a difference less than one might expect from their differential performance. Otherwise, particularly at the highest levels, C_4 and C_5, the educational distributions are surprisingly similar. A higher

percentage of minority applicants (84.1) than majority applicants (55.6) come from the local area. It is most interesting, from the point of view of our 1965 to 1971 analysis, that 31.8 percent of the minority applicants and only 5.9 percent of the majority applicants attended high school in the South. This creates a presumption in favor of our assumption that H_1 was behaving partly as a proxy for minority status.

We ran the same multiple regression equations for the 213 1971 applicants as we did for the 2,366 1965 to 1971 applicants, adding M_1 = member of a minority group. With such a small number of observations and so many cells, it is difficult to get statistically significant coefficients, but for those which are significant, the interpretation can be very strong. The results are reported in Table 5-6.

The most significant observations are in regard to the behavior of the minority variable, M_1. Being a member of a minority group, other things equal, lowers the probability of success on the Mental Adaptability by .229 (statistically significant at the 1 percent level) and lowers the score by 11.70 points (statistically significant at the 1 percent level). This is a decisive and disturbing conclusion. H_1, which we believe is co-linear with M_1, also lowers the probability of success on the

Table 5-6. Regression coefficients: January to June, 1971, applicants

	(1) MA_1	(2) CST_1	(3) OR_1	(4) MA_2	(5) CST_2	(6) OR_2
K	1.056**	1.14**	.772**	62.78**	36.69**	68.31**
	(.283)	(.235)	(.384)	(8.36)	(4.74)	(11.15)
A	-.021*	-.008	.049	-.57	-.07	-.05
	(.010)	(.009)	(.014)	(.30)	(.17)	(.42)
J_1	-.054	.081	.018	1.55	2.44	.34
	(.079)	(.064)	(.107)	(2.33)	(1.30)	(3.10)
J_2	-.018	.010	.312*	1.31	2.01	9.23*
	(.117)	(.093)	(.156)	(3.46)	(1.88)	(4.54)
J_3	.001	.044	.134	2.53	1.59	5.39
	(.083)	(.065)	(.111)	(2.46)	(1.32)	(3.22)
J_4	.089	.105	.187	5.07*	2.64*	6.59*
	(.079)	(.059)	(.097)	(2.34)	(1.20)	(2.81)
J_5	-.192	-.050	.562**	-2.20	1.45	10.53
	(.130)	(.075)	(.205)	(3.84)	(2.32)	(5.95)
C_1	.130	-.015	-.125	4.39	.55	-1.16
	(.105)	(.075)	(.124)	(3.10)	(1.51)	(3.61)
C_2	.196	.016	-.169	9.96**	-.82	-2.68
	(.108)	(.079)	(.128)	(3.18)	(1.60)	(3.73)
C_3	.322	.073	.091	12.58	1.30	8.66
	(.413)	(.288)	(.455)	(12.18)	(5.80)	(13.22)
C_4	.139	.107	-.130	12.92**	.77	-4.08
	(.166)	(.128)	(.252)	(4.91)	(2.59)	(7.32)
C_5	.202*	.083	.126	7.54**	1.08	2.47
	(.090)	(.066)	(.108)	(2.65)	(1.34)	(3.14)
R_1	.081	-.071	-.666**	-3.70	-3.82	-10.36
	(.149)	(.119)	(.191)	(4.39)	(2.40)	(5.53)
R_2	.129	-.057	-.744**	-1.65	-4.08	-13.98*
	(.155)	(.123)	(.196)	(4.57)	(2.47)	(5.69)
H_1	-.314**	-.035	-.020	-8.16**	-1.13	-.25
	(.092)	(.102)	(.174)	(2.71)	(2.05)	(5.06)
PSC_1	.094	-.041	.302	6.12	-.33	4.68
	(.139)	(.101)	(.173)	(4.08)	(2.03)	(5.04)
PS_1	-.034	-.030	.060	-1.70	-.66	1.95
	(.072)	(.057)	(.094)	(2.13)	(1.15)	(2.73)
E	026	-.004	-.0002	1.03	.62*	.57
	(.020)	(.015)	(.026)	(.58)	(.31)	(.74)
P_1	.208	.096	.354*	3.02	2.13	7.08
	(.127)	(.092)	(.151)	(3.74)	(1.86)	(4.38)

Table 5-6, continued

W_1	. 046	. 024	-. 116	. 04	-. 50	2. 81
	(. 083)	(. 065)	(. 106)	(2. 46)	(1. 30)	(3. 08)
W_2	. 051	. 005	. 020	4. 35	-. 04	4. 64
	(. 084)	(. 065)	(. 109)	(2. 47)	(1. 32)	(3. 15)
W_3	. 075	. 046	-. 053	1. 45	. 09	4. 06
	(. 099)	(. 079)	(. 128)	(2. 93)	(1. 59)	(3. 72)
M_1	-. 229**	-. 029	. 515**	-11. 70**	-3. 78**	10. 76**
	(. 073)	(. 067)	(. 115)	(2. 14)	(1. 35)	(3. 35)

* = . 05 level of significance
** = . 01 level of significance

MA by .314 points (significant statistically at 1 percent) and the score by 8.16 points (significant statistically at 1 percent). The probability equation for the Civil Service test has no statistically significant results; on the score equation minority status lowers the probability of success by 3.78 points (statistically significant at 1 percent).

On the oral, the effect of minority status is reversed, however, becoming positive and raising the probability of passing by .515 and the score by 10.76 points (both statistically significant at 1 percent). This is an explicit reflection of a policy attempt to hire more minority members, but the attempt begins only after successful performance on the written. On the oral, the inclusion of knowledge of Oakland, its minority community, and its problems, appears to assist in the performance of the minority candidates. These results, however, underscore the critical importance of careful evaluation and interpretation of the use of standardized written exams and their results for selective purposes, particularly where it is essential and desired to increase minority representation.

The behavior of all other variables simply bears out, in much weaker fashion because of the small number of observations, the conclusions already discussed in the more general analysis, and therefore won't be belabored here.

CHAPTER 6

THE CHALLENGES OF THE 1970's

This chapter will discuss the extremely significant policy changes, particularly in the minority composition of the force, between 1971 and August, 1974. It will raise, as well, some further economic policy questions for the Oakland Police Department to consider, particularly about options that may be open to revise economic incentives to attract and retain the type of labor force it desires.

MINORITY REPRESENTATION

According to the 1970 Census, the City of Oakland is over one-half minority. The population is 34.5 percent black, 9.8 percent Spanish surnamed, and 6.5 percent other minorities.[1] Yet, in 1966, just 3 percent of the Oakland police force was minority; by the end of 1970, the percent minority had increased to 6.5.[2] The relationship between the under-representation of the minority communities on the force and the apparently discriminatory selection instruments discussed in Chapter 5 was clear to the minority communities.

The Legal Environment

On October 27, 1969, a suit was filed in the United States

District Court, Northern District of California, the case of Clarence Penn vs. William Stumpf, Civil Action No. C-69-239 OJC, "seeking equitable relief to remedy an alleged pattern and practice of discrimination in hiring for the Oakland Police Department" violating civil rights.[3] The complaint, which was more than 20 pages long, generally alleged that the processes of selecting applicants for appointment for positions with the Oakland Police Department unlawfully discriminate against the plaintiff and other minority, i.e., black and Spanish surnamed persons, in the following ways:

1. By the use of a written examination which:
   a. is not practical in nature,
   b. does not fairly test the fitness of the person examined to discharge the duties of a police officer,
   c. measures skills substantially unrelated to that position,
   d. requires linguistic, verbal and other facilities unrelated to the position,
   e. discriminates against Negro and Spanish surnamed minority group males solely on account of their race, education and racial

and cultural backgrounds,

f. has never been subjected to an impartial professional validity study,

g. lacks predictability of success,

h. has kept worthwhile qualified minority males out of the Department.

2. By using a background investigation as a screening method which investigation:

a. uses as screeners persons who are themselves unfamiliar with minority life styles and cultures,

b. uses Caucasian officers to screen who have not been educated or trained for that purpose,

c. uses Caucasian officers who themselves are unscreened as to the existence of racial prejudice on their part. From the screening process information is obtained about applicants and used to bar them from the position despite the fact that such information is completely unrelated to the question of whether the applicant is capable of performing the duties of an officer in the Oakland Police Department

and therefore serves to keep out minority members.

3. By using recruitment policies which:
   a. utilize white personnel who have little or no contact with potential minority group police officer applicants,
   b. recruit at schools and other institutions where the vast majority of potential applicants are Caucasian, and thereby
   c. prevent minority group males who might be potential applicants from learning of openings.
4. By the use of a psychiatric and oral examinations which:
   a. are conducted by persons unfamiliar with the culture and life styles of black and Spanish surnamed societies,
   b. are conducted by persons who use medical and mental frames of reference appropriate to white middle class culture as a result of which the plaintiff and other minority members are discriminated against.
5. With respect to the oral interview, it is alleged

> that this interview is conducted by Caucasians who are unscreened for their familiarity with minority groups and who either harbor feelings of race prejudice or are ignorant of the history, culture and background of minority group persons so that they are unable to make valid judgments as to qualifications of individuals from those groups.[4]

On February 2, 1970, the court denied a motion to dismiss filed by the city and held that the plaintiffs' complaint stated a cause of action.[5] The City of Oakland filed an answer on February 11, 1970, which denied all material allegations.

On March 8, 1971, it became apparent that changes in selection devices or results would have to be made. On that date, the United States Supreme Court rendered its unanimous decision in the landmark case of Willie S. Griggs v. Duke Power Company, 28 L ed 2d 158, brought under Title VII of the Civil Rights Act of 1964 (42 U.S.C. 2000e, et. seg.). The Supreme Court ruled that if the use of certain tests and educational requirements for screening job applicants results in a higher rejection rate for blacks than for whites, the employer must demonstrate that passing such tests is significantly related to successful performance on the job. "If an employment practice

which operates to exclude Negroes cannot be shown to be related to job performance, the practice is prohibited."[6]

The Equal Employment Opportunity Commission's Guidelines on Employee Selection Procedures[7] underscores the requirements more clearly:

> For the purpose of the guidelines in this part, the term "test" is defined as any paper-and-pencil or performance measure used as a basis for any employment decision. The guidelines in this part apply, for example, to ability tests which are designed to measure eligibility for hire, transfer, promotion, membership, training, referral or retention. This definition includes, but is not restricted to, measures of general intelligence, mental ability and learning ability; specific intellectual abilities; mechanical, clerical and other aptitudes; dexterity and coordination; knowledge and proficiency; occupational and other interests; and attitudes personality or temperament. The term "test" includes all formal, scored, quantified or standardized techniques of assessing job suitability including, in addition to the above, specific qualifying or disqualifying personal history or background requirements, specific educational

or work history requirements, scored interviews, biographical information, blanks interviewers' rating scales, scored application forms, etc.[8]

Discrimination is defined as "the use of any test which adversely affects hiring, promotion, transfer, or any other employment or membership opportunity of classes protected by title VII"[9] unless "the test has been validated and evidences a high degree of utility."[10] The protected classes are defined by "race, color, religion, sex, or national origin."[11] "Evidence of a test's validity should consist of empirical data demonstrating that the test is predictive of or significantly correlated with important elements of work behavior which comprise or are relevant to the job or jobs for which candidates are being evaluated."[12]

Moreover, empirical evidence to support a test's validity must be based on generally accepted procedures, approved by the American Psychological Association,[13] for determining criterion-related validity. Where criterion-related validity is not feasible, evidence of content or construct validity may be acceptable, if "accompanied by sufficient information from job analyses to demonstrate the relevance of the content (in the case of job knowledge or proficiency tests) or the construct (in the

case of trait measures). Evidence of content validity alone may be acceptable for well-developed tests that consist of suitable samples of the essential knowledge, skills or behaviors composing the job in question," not including "those which can be acquired in a brief orientation to the job."[14]

It became amply clear from the developing case law and from the Equal Employment Opportunity Act of 1972 (P. L. 92-261, 86 Stat. 103) which extended the Civil Rights Act of 1964 to public employers that the City of Oakland could be forced by the courts to answer two questions: 1) does any selection device have a discriminatory adverse effect on the hiring of minorities?, and 2) if so, can that selection device be shown to be job related? If a selection device does have adverse effect, even if it is job related, the employer must also show that he knows of no alternative technique that would have less of an adverse effect on protected groups and is equally valid.[16]

Minority Composition of the Oakland Police Department

Adverse effect, somewhere in the Oakland recruitment and selection process, seemed clear, particularly until 1971, from the statistics on the percent of new appointees to the Police Department that were minority group members. Table 6-1 presents the statistics on the percent of new appointees that were

minority group members from 1961 to 1973. Note that the percentages doubled in 1971 over 1970, and doubled again in 1973 over 1972 to a dramatic 61 percent of new appointees from minority groups. Policy changes had to be at work!

Table 6-1. Percent of new appointees from minority groups, Oakland Police Department, 1961 to 1973.

Year	Number of New Appointees	Number from Minority Groups	Percent of New Appointees from Minority Groups
1961	24	1	4.1
1962	44	5	11.3
1963	49	3	6.1
1964	43	0	0.0
1965	61	3	4.9
1966	81	6	7.4
1967	49	7	14.2
1968	91	16	17.6
1969	69	14	20.3
1970	73	11	15.1
1971	85	30	35.3
1972	94	28	29.7
1973	72	44	61.0

Source: Oakland Civil Service Office

The changes in the total number of Police Department positions filled, over all ranks, by members of the various minority groups, is shown from December, 1966, to December, 1973, in Table 6-2. At the end of 1966, just 3 percent of the total

Table 6-2. Total number and percent of Oakland Police Department positions filled by each minority group, December, 1966, to December, 1973

Date	Total Filled Positions	Blacks		Spanish Surname		Asian American		Native American		Total Minority	
		Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
December, 1966	661	15	2.27	4	0.60	1	0.15	0	0.00	20	3.02
December, 1967	648	18	2.77	4	0.61	1	0.15	0	0.00	23	3.55
December, 1968	658	20	3.03	4	0.60	1	0.15	1	0.15	26	3.95
December, 1969	682	28	4.10	7	1.02	0	0.00	1	0.15	36	5.27
December, 1970	705	34	4.82	10	1.41	1	0.15	1	0.15	46	6.53
December, 1971	714	38	5.32	11	1.54	4	0.56	3	0.43	56	7.85
December, 1972	700	55	7.86	15	2.14	13	1.85	2	0.30	85	12.15
December, 1973	695	71	10.21	22	3.17	16	2.30	3	0.43	112	16.11

Source: Oakland Civil Service Office

force was minority; by the end of 1973, 16 percent of the force was minority.

Of the men on the force in October, 1973, 19.2 percent of the Caucasians were hired after 1971; 56.3 percent of the blacks, 57.1 percent of the Spanish surnamed, and 70.6 percent of the other minorities represented (Asian-Americans, Filipinos, Hawaiians and Native Americans) were hired after 1971. For a detailed breakdown of the force, by ethnic groups and year of hire, see Table 6-3.

Partly because the minority group members have come on the force in numbers only since 1971, there are only four minority officers, all blacks, above the rank of patrolman. Two are sergeants, one is a lieutenant, one a deputy chief.

Administrative Attitudes

What was going on in 1971, 1972 and 1973 to produce such dramatic changes? It should be clear that Oakland's Police Chief, Charles Gain, and Personnel Director, James M. Newman, both superior professionals, recognized the urgency of drawing in more minorities and actively supported research and analysis of existing procedures and possible changes therein. The legal developments, in fact, seemed almost to provide them with the necessary political leverage, against more obstructionist groups

Table 6-3. Oakland Police Department members, by date of appointment and ethnicity, October 30, 1973

Year of Appointment	Number Caucasian	Number Black	Number Spanish Surnamed	Number Other Minority	Total
1940	1				1
1941					0
1942	2				2
1943	2				2
1944	1				1
1945	6	1			7
1946	5				5
1947	25	1			26
1948	4				4
1949	28	2			30
1950	4				4
1951	27	1			28
1952	3	1	1		5
1953	16		1		17
1954	10				10
1955	9				9
1956	13				13
1957	19				19
1958	9				9
1959	9				9
1960	1				1
1961	3				3
1962	9		2		11
1963	8	1			9
1964	17				17
1965	24	1			25
1966	37	2		1	40
1967	28	1	1		30
1968	48	7	2		57
1969	58	6	2	1	67
1970	50	7		3	60
1971	44	10	4	2	60
1972	44	10	2	7	63
1973	25	20	6	3	54
Total	589	71	21	17	698
Percent of force	84.4	10.2	3.0	2.4	

Source: Oakland Civil Service Office

on the police force and in the community, to institute policies which would work in the right direction. They knew, and could argue persuasively, that if they could not voluntarily design ways to hire more minorities and improve the statistics, they would soon be under much less palatable court orders.

Both men were extremely sensitive, as well, to the need to preserve high quality standards. Admitting inferior candidates would pose unacceptable risks both to the quality of the police force and to the effort to bring in more minorities. They were sophisticated, however, about the difficulties of choosing appropriate selection instruments to measure quality. Throughout the 1960's they had encouraged interested researchers to use departmental data to try to relate selection devices to job performance. The results were inconclusive. If adverse effect were demonstrated in court, it would be very difficult to prove that selection devices, particularly the written tests, were job related. It might be easier to remove the adverse effect.

Research Efforts

There are several important barriers to demonstrating conclusively through empirical research that a test discriminates well between good and bad job performers. Foremost among these difficulties is that selection test failures are not given an

opportunity to show whether or not they can perform on the job. Therefore, there can be no observations about the job performance of failures. Supervisors' evaluations show very little variance; paired comparisons are time-consuming and often unreliable; turnover data tells little about performance; and, particularly in a force the size of Oakland's, there may be too few performers at either extreme to yield statistically significant conclusions.

William K. Hunter and Thomas J. Culligan, for example, in an attempt to identify which factors could be used to predict police performance, asked police supervisory personnel to compare and evaluate prior subordinates who had subsequently left the department, on a forced-choice paired comparison basis.[17] They used people who had left the department in an attempt to reduce many potential biases from work unit associations and active friendships. From an original group of 146 policemen who had left the department, 120 were chosen who had sufficient time on the force and sufficient experience with supervisors. Then, the sample to be studied was confined to the top 28 and bottom 28 individuals as ranked.[18]

The result of most interest to us here is that as a group, they don't do significantly differently on the written test. The average score of the top 28 on the Otis Self-Administering Test

of Mental Ability was 54.5. The average score of the bottom 28 was 53.2. An F-test shows that the difference is not statistically significant.[19] On the other hand, the high scorers were definitely more capable of handling the Civil Service oral examination. The average oral score of the top 28 was 84.75, of the bottom 80.0. An F-test shows a statistically significant difference at a better than 1 percent level of confidence.[20]

In William K. Muir's in-depth, but small, study of 27 Oakland policemen, we find that the intelligence tests, particularly the Army General Classification Test, do appear to be usefully related to the best professional performance.[21] Muir argues that this is because they test verbal experience, and "the professionals' enhanced verbal experience eases the task of coping with the social cross pressures of the job, of resolving the dilemmas of power, of developing a philosophy, and of being a leader within the department."[22]

Muir also finds that the Civil Service general knowledge test is useful. Muir's "impression is that the narrower the experience and the less diverse the social groups with which the candidate has warm familiarity, the worse he scores"[23] and that "a poor performer on the CSW ought to be marked as a candidate with real inadequacies in his familiarity with the world."[24] He

believes that a preannounced current affairs test should be included in the testing battery, particularly as an opportunity for a candidate to excel "if he has the motivation and minimal learning skill to do so."[25]

High value is also placed by Muir on the oral interview, which "assesses motivation and maturity in a way no written test can and is critical in the evaluating process."[26] Muir would be the first to stress, however, that his findings are suggestive and not statistically significant. They seem to caution against a too hasty abandonment of traditional selection methods under court attack.

Personnel Director James M. Newman summarizes the research attempts as indicating that the Mental Adaptability and Civil Service tests had no real predictive validity corresponding to success on the street. The strongest demonstration that could be made was that test scores were correlated with performance in the police academy and that performance in the police academy was correlated with later performance evaluations.[27] But no direct correlation could ever be demonstrated between the test scores themselves and performance.[28]

A "Content Valid" Written Exam

By November, 1970, the beleaguered Civil Service test of

general knowledge and current events was replaced by a written test basically of reading comprehension. The test has 50 questions; 30 must be answered correctly to pass. The first section consists of 25 multiple choice questions related to six pages of crime reports, to be answered in 40 minutes. The second section consists of 25 multiple choice questions related to eight pieces of narrative material, to be answered in 40 minutes. By the middle of 1971, this test replaced the Mental Adaptability tests as well. Therefore, neither the Mental Adaptability tests nor the Civil Service test which we analyzed in Chapter 5 is currently being used. The written reading comprehension test replaces them.

The new written test has not been validated technically as related to job performance. However, high scores have been shown to correlate positively with high performance in the recruit academy. It is argued, therefore, that the test is constructed only to predict success in the recruit academy, in which an applicant will deal with similar material. Therefore, it is reasonable on its face and content valid.

The Affirmative Action Survey by the California FEPC still is critical of the test as indicating "only one skill: the ability to analyze, under pressure, difficult reading material."[30]

According to the Fog Readability Index, the second part of the examination is beyond high school reading level.[31]

However, in the Consent Decree in the Penn v. Stumpf case, signed December 20, 1973, it is agreed that: "The Civil Service Board will continue its efforts to develop or obtain a demonstrably job-related written test for the selection of police officers. The present examination may continue to be used on a pass-fail basis pending those efforts."[32]

College seniors or college graduates with majors in Administration of Justice, Law Enforcement, Police Science, Criminology, Sociology, Psychology, Public Administration, or related fields, are now able to request a waiver of the written examination by submitting their transcripts for review.

The revision of the written exam has not removed the adverse effect on minorities. As Table 6-4 shows, 84.7 percent of the Caucasians taking the test between January, 1972, and September, 1973, passed, compared to 41.6 percent of the blacks, 66.7 percent of the Spanish surnamed, and 73.0 percent of the Asian Americans. Of all waivers granted, 72.4 percent were to Caucasians, 20.7 percent to blacks.

Yet, the exam now does have content validity and will be retained provisionally until something better can be developed,

Table 6-4. Experience of ethnic groups on patrolman examination, January, 1972, to September, 1973

Patrolman Applicants	Caucasian	Black	Spanish Surname	Asian American	Native American	Total
Total entering testing program	884	502	61	45	8	1,500
Percent of total	58.9	33.5	4.1	3.0	0.5	100.0
Number taking written	727	457	57	37	5	1,283
Number passing written	616	190	38	27	5	876
Percent passing written	84.7	41.6	66.7	73.0	100.0	68.3
Number of exams waived	157	45	4	8	3	217
Percent of ethnic group waived	17.8	9.0	6.6	17.8	37.5	14.5
Percent of all exams waived	72.4	20.7	1.8	3.7	1.4	100.0
Total remaining after written	773	235	42	35	8	1,093
Total hired	74	41	7	6	1	129
Percent hired	9.6	17.4	16.7	17.1	12.5	11.8

Source: Oakland Civil Service Office

if possible. Recruits, we should note, must pass successfully through a 22-week training academy after they are hired. The academy emphasizes academic as well as practical knowledge; for example, constitutional and criminal law, criminal evidence, criminal investigation, community awareness, report writing, and patrol procedures. Many of these subjects are taught by college level textbooks. Basic verbal and reading comprehension skills are essential for successful academic performance in the academy, and, one might argue, might well be necessary on the job.

Therefore, the Police Chief and Personnel Director are very anxious to retain a written test as a quality screening device. They would prefer to concentrate on attracting a sufficient number of qualified minority candidates to enter the selection process so that acceptably large numbers will survive the written exam. It would be interesting, as the data accumulate, to test empirically whether the qualities needed to pass the revised written exam are the same as or different from the qualities needed to pass the Mental Adaptability and Civil Service tests. Scope for future research is clearly indicated.

Other Changes in the Selection Process

Our study of the 1965 to 1971 period showed that minority

group status was no longer a disadvantage once a candidate reached the oral exam. In fact, in the first half of 1971, minority status raised the probability of passing by .515 points and the score by 10.76 points (both statistically significant at 1 percent). The positive effect of minority status on the oral continued through 1971, 1972 and 1973. In the January, 1972, to September, 1973, period, 66.2 percent of the Caucasian candidates failed the oral; 44.3 percent of the blacks, 47.6 percent of the Spanish surnamed, 54.3 percent of the Asian Americans, and 50.0 percent of the Native Americans failed the oral.[33]

Indeed, the Affirmative Action Survey by the California FEPC states that "the adverse effect of the written is totally dissipated by the oral."[34] Since the written examination is now only qualifying, it is the oral score that determines a candidate's position on the eligibility list. The oral board consists of three members, an Anglo police captain who is the Police Department Personnel Officer, a black sergeant, and a Civil Service representative, also Anglo. The team remains consistent and constant and has developed a high caliber interviewing technique, which carefully probes a candidate's attitudes toward minority and low-income groups.[35]

According to the FEPC's assessment, the Physical Agility,

the Medical Examination, the Psychiatric Examination, and the Background Check do not yield any significant evidence of adverse effect on minorities. The background investigation has been improved recently by attempting to eliminate the use of police officers on overtime. All investigations would then be conducted by the two officers, representative of minorities, assigned full-time to do background checks. All rejects must be approved by the Police Chief and there is an appeal process.

As Table 6-4 shows, between January, 1972, and September, 1973, 9.6 percent of the Caucasians who passed the written were actually hired; 17.4 percent of the blacks, 16.7 percent of the Spanish surnamed, 17.1 percent of the Asian Americans and 12.5 percent of the Native Americans who passed the written were actually hired. In actual numbers, this meant 74 Caucasians, 41 blacks, 7 Spanish surnamed, 6 Asian Americans, and 1 Native American were hired in this period.

Active Recruitment of Minority Candidates

One way of hiring more minorities, even without making changes in the selection procedures, is to attract more qualified minority candidates to apply. The City of Oakland had always devoted a great deal of attention to attracting qualified police candidates. Indeed, it pioneered ambitious, nationwide, college

police recruiting efforts and visited a wide range of college campuses in the 1960's. National recruiting campaigns were ended in late 1969 as the result of a few unpleasant campus demonstrations, mounting political pressure to intensify local recruitment efforts, and indications that nationally recruited candidates were more likely to leave the force. In Table 2-7 we showed, for example, that between August 1, 1962, and August 1, 1971, 43.6 percent of the out-of-state residents resigned from the force, compared to 20.2 percent of local residents and 19.3 percent of other California residents.

On July 20, 1971, the pendulum had swung full cycle. The residence requirement, which had been removed by Oakland voters in 1956, was reinstituted. Open competitive examinations for civil service appointments were restricted to city residents, "to the extent that resident applicants are available."[36] In practice, non-residents are allowed to take the police exams, but they cannot be appointed until all residents on the list have been appointed. If appointed, a declaration of intention to move into Oakland within nine months after appointment is required. Enforcement has been somewhat ambiguous, partly because of some doubt about the constitutionality of residence requirements,[37] but a preference for residents is clear.

On October 26, 1971, the Oakland City Council adopted a much heralded and publicized Affirmative Action resolution which "sets a goal for eliminating any disparity between the minority composition of City employment and total City population, and calls for parity to be achieved in all City departments at all salary levels and in all job classifications."[38] The specific implementation of the Affirmative Action program for the Oakland Police Department has been incorporated in the Penn v. Stumpf Consent Decree and requires that:

A. For all minority persons whose employment with the Oakland Police Department terminated for any reason during each year, minority persons on the eligibility list shall be hired to fill the vacancies created within the same year period.

B. For all new hires other than those covered by subsection A, the percentage of minority persons hired each year from the Oakland Police Department's eligibility list shall at least equal the current percentage of minority persons in the population of the City of Oakland. In carrying out this procedure the Oakland Police Department shall hire minorities from each ethnic group in general

> proportion to the City's ethnic composition, assuming an adequate representation of minorities of each ethnic group on the eligibility list.[39]

The Consent Decree specifies further that these are goals, not quotas, and that no employees shall be dismissed to achieve the goals. The hiring of unqualified persons who have not passed the examinations and hiring requirements, or of persons within the lowest 10 percent of the candidates on the eligible list, is not required to achieve the goals.

If, at any time, the Oakland Police Department cannot hire minority persons according to the goals because an insufficient number of minorities have passed the initial hiring requirements, then the department is required to proceed with continuous testing procedures, make special efforts at recruiting minorities, and notify the attorneys for the plaintiffs of the insufficiency and try to explain the reasons.[41]

Active recruiting is viewed as a primary prerequisite of success in achieving minority hiring goals and maintaining quality standards. Job opportunities are publicized through local organizations, high schools, junior colleges and colleges with substantial minority enrollments. Since December, 1972, local college placement centers are visited and contacts are

made with faculty personnel and minority student counselors for referrals of qualified prospects. After an applicant is referred, the "one-on-one" approach is used--that is, an appointment is made to meet him personally and provide individual attention and information about the selection process. This approach is viewed as more successful than meeting groups of potential applicants, because the departmental representatives do not have to be on the defensive against possibly hostile individuals or negative peer group pressure.

In 1973, a media saturation program was launched, funded by the Law Enforcement Assistance Administration through the California Council of Criminal Justice. Four Bay Area departments, Oakland, San Francisco, Berkeley and Richmond, cooperated in mass media advertising aimed at the minority populace and designed by Anrich, Inc. of Oakland, a minority-owned advertising agency. The campaign consisted of 30 and 60 second spot commercials on television and radio, using real minority police officers, billboards, posters on transit vehicles, etc. Interested people were invited to call in to a telephone center, manned by Oakland, for further information. Callers were considered eligible for recruitment only by the police agency in their city of residence for 48 hours, after which he could be considered

by the other cities as well. Oakland tried to schedule an interview with all interested callers to discuss in depth the advantages and disadvantages of police employment, the selection process, and the employment application and to arrange for interested applicants to tour the police facility or to "ride along" with a patrol officer. This continued the "one-on-one" approach to recruiting.

Between April 24 and October 11, 1973, the telephone center processed 2,102 calls. Twenty percent of the callers were apparently ineligible because of citizenship, age, height, weight, or some other requirement: 76 percent of the eligible callers lived in Berkeley, Richmond or San Francisco. Oakland received 490 calls from apparently eligible Oakland residents. Two hundred and 34 individuals took the initial written test; 93, or 39.7 percent, passed the written test. Fifty-three people (57 percent of those who passed the written) passed the oral. Fifteen blacks and four Mexican Americans were hired by the department as a result of the Minority Recruitment program; it is projected that a total of 36 minority persons will have been hired by Oakland by the project's end. As for the other participating departments, Berkeley received inquiries from 83 eligible candidates, Richmond from 68 and San Francisco from 591, but what happened to these candidates is not known.[42]

The cost to Oakland, exclusive of $28,368.27 in Federal funds, as of October 1, 1973, was $44,524.11, or $2,120.19 per minority person recruited. The Oakland Civil Service Office estimates that in past years approximately $1,000 per recruit has been spent for each minority officer. If the projections of 36 minority persons hired are correct, the 1973 project will have cost the Federal government $30,618 and Oakland $68,054, or $1,890.41 per recruited person for Oakland.[43]

Most importantly, through all these public relations and recruitment efforts, the public image of the department has changed. It is now amply clear that the department wants minority candidates to apply. Moreover, minorities are seen on the force in ever-increasing numbers, visible proof that they can succeed in the selection process and be accepted as members of the force. The minorities hired in the past few years can refer interested friends and relatives. In short, to quote Personnel Director James M. Newman, "The more you have, the more you get."[44] Sixty-one percent of the new appointees in 1973 were from minority groups. All passed through the selection process and were deemed qualified. If this success can continue for the next few years, and there is every indication so far in 1974 that it can, the Oakland Police Department's worries

about minority representation will be over. So will Oakland's legal troubles on that front, since if the statistics do not bear out adverse effect, individual selection devices do not have to be validated as job related. Oakland's experience in 1973 demonstrates clearly what can be accomplished with motivation and effort.

WOMEN

Challenges have come, however, from another protected class as well: women. Patrolman and policewoman had always been two distinct categories of police officer. There were seven policewoman positions in the department. The women were assigned not to patrol duties but to the juvenile division, the women's prison, rape cases, etc. Requirements were different for policewomen and patrolmen. The women could be shorter and lighter: 5'4" and 120 pounds, minimum height and weight. They were also required to have either a college degree or four years of relevant work experience. They were given the same written examinations as the men but a different Physical Agility designed especially for women. The rest of the hiring process was the same. Whereas there was continuous recruiting and testing of male applicants, policewoman positions came up infrequently.

Two lawsuits were brought, one by an applicant seeking a patrolman's position, one by a policewoman seeing a promotion to sergeant. Under legal pressure, on February 1, 1974, the Oakland City Council merged the patrolman and policewoman classifications into one new classification, police officer.[45] They set a standard height and weight requirement, 5'7", 135 pounds, minimum height and weight. The differences in educational requirements were dropped.

A class suit was brought against the height and weight minima, arguing that they impermissibly discriminated against women as a class. On March 15, 1974, the California Court of Appeals struck down the city's height and weight requirements in the case of Veragene Haidy vs. William F. Stumpf.[46] The Court argues that over 80 percent of all American women are excluded by such a size limitation. The trial court's finding that the size requirements are reasonable and necessary to the normal operation of the police patrolman's duties is unsupported by the type of evidence needed to justify discriminatory treatment. The Court did not dispute that physical strength may be related to performance, only that a person must be 5'7", 135 pounds to possess the necessary strength. In fact, Justice Brown added this statement:

> The police arm functions not only to protect the public, but to instill in that public confidence that it is being protect d--an increasingly difficult task in these days of rising crime rates. Some non-discriminatory minimum size requirement is entirely in order, and to the extent that the opinion in this case may be deemed to strike down all such limitation as a matter of law, we cannot agree.[47]

The Court invited the city to reexamine the evidence that the requirement is discriminatory, based on local and recent data, or to demonstrate conclusively that it is required. On May 10, 1974, the California Supreme Court denied a hearing in the case. The decision of the Court of Appeals, abolishing minimum height and weight requirements, became final on April 15, 1974.

The city feels that without the height and weight requirements, the Physical Agility test is of doubtful use as a screening device, because it was designed assuming the minimum height and weight of candidates. Testing was suspended and applications held in abeyance during the summer of 1974 to allow for the development of a new Physical Agility test applicable to the new circumstances.

In the promotion case, Joan Hail vs. James S. White, a policewoman alleges that she has been denied an opportunity to become a sergeant, for which she was otherwise qualified, solely because of sex discrimination.[48] An officer must have had three years of experience as a patrolman to be eligible to take the sergeant's examination. On this basis, Joan Hail was refused permission to take the exam. Finally, under pressure, the city allowed her to take the written examination, which she passed, and the oral, the results of which are sealed, until the legal issues are settled. On August 2, 1973, the Federal District Court upheld the city's requirements, arguing that they are neither unreasonable nor non-job related, that Ms. Hail's inability to meet the conditions for promotion is a product of her personal inability to meet the reasonable requirements of patrol service.[49]

The case is still in the Court of Appeals, and the appeal looks like it may well be successful. An Amicus Curiae brief submitted by U. S. Assistant Attorney General J. Stanley Pottinger argues that the District Court erred in employing a standard of reasonableness rather than a standard of business necessity for employment practices which have a discriminatory impact.[50] Pottinger argues that Hail is concededly qualified to

be a police sergeant, except for her lack of experience as a patrolman, her height and weight, and the fact that she never took the Physical Agility test required of patrolmen. Requiring that she have three years of experience as a patrolman needlessly perpetuates the effect of past discrimination, since she was denied that experience on the basis of her sex. Moreover, the Oakland Police Department made no showing that three years as a patrolman are necessary to do the work of police sergeant. Not all sergeants have had patrol experience and most are not assigned to patrol duties. Moreover, Ms. Hail had experience similar to that of a patrolman, including patrol duties as a policewoman. There are no height, weight or Physical Agility requirements for promotion to sergeant, and the height and weight requirements for patrolmen were struck down by Hardy vs. Stumpf. The height, weight, and Physical Agility have not been demonstrated to be a business necessity. Therefore, it is considered very likely that the Court of Appeals will rule in favor of allowing Ms. Hail to compete for promotion.

The support for admitting women to the force on an equal basis with men is far less than that for admitting ethnic minorities. The image of the strong, male policeman dies hard. The strength and agility issues have not been resolved. The rank-and-file

patrolman fears that he might have to rely on a "weaker and more fragile woman" in a life and death situation. There is no hard evidence that women either can or cannot perform as well physically as men, but lots of strongly held beliefs. There is also a powerful, culturally derived reluctance among policemen to work intimately with women. If a man and a woman were partners, they would be riding together in a patrol car for long hours, day after day. Sexually compromising situations are feared. Policemen's wives are unhappy. The issues are deep and powerful. Their resolution remains to be seen. The substantive changes that a fully integrated and representative police force might bring to police work are fascinating to contemplate.

LESSONS FROM TURNOVER EXPERIENCE

The other side of recruiting and selecting people is retaining them as members in good standing of the police force. In our brief discussion of turnover experience in Chapter 2, we found that of the officers appointed between August, 1962, and August, 1971, 25, or 4.25 percent, were fired and 144, or 24.48 percent, resigned (see Table 2-6). Of the Oakland residents, 20.2 percent resigned; of the other California residents, 19.3 percent resigned; of the out-of-state residents, 43.6 percent resigned (see Table 2-7). The residence require-

ment and shift in emphasis to local recruiting should certainly decrease the number of resignations.

Broken down by educational level, 16.51 percent of the high school graduates, 25.56 percent of those with less than two years of college, 19.38 percent of those with more than two years of college, and 45.83 percent of college graduates resigned (see Table 2-8). This is consistent with our finding in Chapter 4 that police salaries are 122 percent of the mean income of high school graduates and only 79 percent of the mean income of men with four years of college (see Table 4-9). Yet Chapter 5 showed that applicants with more education were more likely to be selected, at least with the old written tests.

The implication here is that if the Oakland Police Department wishes to attract and retain college graduates, perhaps some system of differential rewards for higher education should be offered. Similarly, if the department wants to encourage recruits to go back to college and continue their education, perhaps more than incentives during schooling is needed. Increased rewards after the schooling is completed may be necessary as well.

It is true that college graduates have a better chance of being promoted than others. Promotional examinations are

written tests similar to those discussed in Chapter 5. People with higher levels of education should have a better chance of passing them than others. Promotional opportunities, however, are limited.

The more difficult question is whether educational differentials should be built into the salary structure at a given rank. Should patrolmen with more education get paid more? Would this help to retain those who might be apt to resign? Even if so, would there be overriding disadvantages to a system of differential pay as well?

We seek some evidence on these questions from a detailed analysis of the 163 departmental resignations between July, 1966, and June, 1971. The individuals who resigned are grouped by years of education in Table 6-5.

Table 6-6 shows the category of position they took after resigning, by years of education. Of the total group, 47 individuals, or 28.7 percent, went to another state or local police agency: another 11 individuals, or 6.8 percent, went to the Federal Bureau of Investigation or the Federal Bureau of Narcotics. Over one-third of the total individuals resigning, therefore, remained in the law enforcement field. Of the 34 officers with B.A. degrees, 18, or 52.8 percent, remained in law en-

Table 6-5. Educational level of individuals who resigned from the Oakland Police Department, July, 1966, to June, 1971

Education	Number	Percent
Less than high school*	5	3.1
High school graduate	36	22.1
Less than 2 years junior college	25	15.3
More than 2 years junior college	11	6.7
A.A. degree	3	1.8
Less than 2 years college	18	11.0
2 to 4 years college	31	19.0
B.A. or B.S. degree	34	20.9
Total	163	100.0

Source: Oakland Civil Service Office

Note: *Before the end of World War II, some people were admitted with less than a high school education.

forcement; of 18 officers with less than two years of college, eight, or 44.6 percent, remained in law enforcement; of 11 officers with more than two years of junior college, 6, or 54.5 percent, remained in law enforcement. On the contrary, of the 36 high school graduates, eight, or 22.3 percent, remained in law enforcement; and of the 25 with less than two years of junior college, four, or 16 percent, remained in law enforcement.

Over half the college graduates, therefore, went to more attractive opportunities within the field of law enforcement. None had been promoted in Oakland. Seven of these went to the

Table 6-6. Type of job taken by individuals who resigned from the Oakland Police Department, July, 1966, to June, 1971, by educational level

Type of Job or Reason for Resigning	Total		Less than High School		High School Graduate		Less than 2 Years Junior College		More than 2 Years Junior College		A. A. Degree		Less than 2 Years College		More than 2 Years College		B. A. or B. S. Degree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Total	163	100.0	5	100.0	36	100.0	25	100.0	11	100.0	3	100.0	18	100.0	31	100.0	34	100.0
Bay Area local p. d.	22	13.5	2	40.0	4	11.1	1	4.0	5	45.4			5	27.8	2	6.5	3	8.8
Other Calif. local p. d.	9	5.5	1	20.0	2	5.6	1	4.0	1	9.1					3	9.6	1	2.9
California Highway Patrol	3	1.8					1	4.0					1	5.6	1	3.2		
Out-of-state local p. d.	2	1.2											2	11.2				
Out-of-state state p. d.	10	6.1			2	5.6	1	4.0							1	3.2	6	17.6
Campus p. d.	1	.6															1	2.9
Cumulative total, state and local police agencies	47	28.7	3	60.0	8	22.3	4	16.0	6	54.5			8	44.6	7	22.5	11	32.2
FBI	5	3.1															5	14.7
Federal Bureau of Narcotics	6	3.7													4	12.9	2	5.9

Table 6-6, continued

Type of Job or Reason for Resigning	Total		Less than High School		High School Graduate		Less than 2 Years Junior College		More than 2 Years Junior College		A. A. Degree		Less than 2 Years College		More than 2 Years College		B. A. or B. S. Degree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cumulative total, all law enforcement agencies	58	35.5	3	60.0	8	22.3	4	16.0	6	54.5			8	44.6	11	35.4	18	52.8
Bay Area local fire d.	4	2.5			2	5.6					1	33.3			1	3.2		
Other Federal agencies	4	2.5									1	33.3			3	9.7		
Teaching	2	1.2											1	5.6			1	2.9
Cumulative total, all public employment	68	41.7	3	60.0	10	27.9	4	16.0	6	54.5	2	66.6	9	50.2	15	48.3	19	55.7
Private business	35	21.5			4	11.1	10	40.0	2	18.2			6	33.3	6	19.4	7	20.6
Attend school	9	5.5			2	5.6	1	4.0	1	9.1					2	6.5	3	8.8
Military	6	3.7					1	4.0							3	9.7	2	5.9
Personal	28	17.2	1	20.0	12	33.3	6	24.0	1	9.1	1	33.3	1	5.6	5	16.1	1	2.9
Asked to resign	12	7.4			5	13.9	3	12.0	1	9.1			1	5.6			2	5.9
Retired	5	3.1	1	20.0	3	8.3							1	5.6				

Source: Oakland Civil Service Office

prestigious Federal agencies, the FBI and the Bureau of Narcotics. Of the seven, one had six years on the force, two had five years experience, three had four years, one had three years. Of the seven, four were from out-of-state, two from elsewhere in California, only one from Oakland. This is clear evidence of the risk of trying to be part of a national, professional labor market. For people whose primary loyalties are to a national law enforcement professional career, it would be difficult for Oakland to compete with the FBI.

This conclusion is reinforced if we look further behind the statistics. Six more of the 18 college graduates who remained in law enforcement went to out-of-state police agencies; five of these, all originally from Florida (two with five years of service, two with four, one with three) went to the Florida Bureau of Law Enforcement. The other, originally from Berkeley, became Director of Law Enforcement for the State of Illinois, after three years of service in the Oakland Police Department. We have now accounted for 13, over two-thirds, of the college graduates who resigned from the Oakland Police Department and remained in law enforcement.

What about the other five? One became an Assistant Chief of Police with the Northern Arizona University Campus Police

Department, after six years of experience in Oakland. One, originally from Fresno, joined the Bakersfield Police Department after five years of Oakland service. Oakland's top patrolman salary was $932 a month in 1968; Bakersfield's top salary was $874 a month.[51] But he was not promoted in Oakland; perhaps he was promoted in Bakersfield.

The remaining three joined the Walnut Creek Police Department, two (from out-of-state) after five years of Oakland service, one (from Oakland) after four years. Walnut Creek is essentially a quiet Bay Area suburb of 33,850 people. It has a 62-man police force and requires 60 units of college credit. Although its 1968 starting salary, $801 a month, was lower than Oakland's $874 a month, its top patrolman salary was $974, higher than Oakland's $932.[52] Even at the same salary, Walnut Creek is a far easier place in which to work than Oakland, with all the problems of an urban core city. The men may have been promoted as well.

We have explained, therefore, why 18 college graduates resigned from the Oakland Police Department but remained in law enforcement work. They went to prestigious Federal agencies, to home state agencies, to possible promotions and to quieter jobs. Could we argue convincingly that if the incentives

of more money or of promotion had been available they would have remained? Not unambiguously, because we cannot separate out taste factors and pecuniary ones to determine at what price the apparent distaste for Oakland could have been bought off. Returning to a home agency or leaving a core city may be quite powerful emotions. Perhaps those who followed their call would not have continued to be good Oakland patrolmen and should not have been encouraged to stay.

What about the 16 college graduates who left the law enforcement field after they resigned? Seven went into private business, about which we have no further information. Three left to attend school and one to teach. Two left to join the military, two were asked to leave, and one left for personal reasons. Again, we have no evidence about the relative power of tastes and money and no evidence that these men should have been encouraged to stay for Oakland's benefit.

Of the 45 men with over two years of junior college or college or an A.A. degree, 17 resigned and remained in law enforcement occupations. Four of these joined the Federal Bureau of Narcotics, only one went out of state, to the Alaska State Police. The remaining 12 men, all with one to six years of service, joined California police departments. The departments

chosen and their 1968 top monthly patrolman salary are listed here (the Oakland salary was $932 per month): San Jose Police Department ($944); Contra Costa Sheriff's Department ($927); Concord Police Department ($927); Fremont Police Department ($927--2 men); California Highway Patrol ($893); Fresno County Sheriff's Department ($855); Pleasanton Police Department ($841); South Lake Tahoe Police Department ($841); Modesto Police Department ($819); and the Pleasant Hills and Livermore Police Departments (no salaries available).[53]

For this group of observations, one can make a stronger case that greater economic incentives or promotional opportunities in Oakland may have compensated for the disadvantages of central city service. San Jose, with a 60 units of college credit requirement, was the only department that actually paid more than Oakland, but Contra Costa, Concord and Fremont came within $5 a month and are far easier and more pleasant to police. We have no information, moreover, about whether promotions were involved in any of these changes, particularly likely in the smaller, lower paying departments mentioned. The potential for pecuniary and promotional incentives to have made a difference seems better for this group than for the college graduates. The men remained closer to home and seemed to be

motivated primarily by a desire to leave Oakland, rather than to pursue a more prestigious opportunity. How much of a differential might have been necessary to overcome the taste for suburban or rural departments is, of course, unknown.

Of the 18 men with less than two years of college who resigned, eight remained in the law enforcement field, a percentage of 44.6. Two went out of state to small town departments in Minnesota and Washington. Two joined the San Francisco Police Department, then paying a top salary of $983, $50 a month higher than Oakland. The others went to Concord, Fremont, Hayward ($862), and the California Highway Patrol.[54] Again, for this group, it appears that improved economic opportunities within Oakland might have made a difference.

Only 12 of the 61 men with less than two years of junior college or a high school degree remained in law enforcement occupations, a lower percentage than in the more educated groups. Three went out of state, nine remained in California departments: Fremont; San Leandro ($927): the California Highway Patrol; three to the Marin County Sheriff's Department ($870) with substantial promotions; South Lake Tahoe; and the Ventura and Sierra County Sheriff's Departments (no salary information available).[55] There were a greater number of

resignations for personal reasons and men asked to resign in this group than in the groups with more education. Economic opportunities may well have convinced those who joined other local departments to remain.

Does following up the futures of the Oakland resignees yield any revealing patterns? For the more than one-third who remained in the law enforcement field, one must ask why Oakland lost men to competing agencies and whether or not changes in the economic incentives or promotional opportunities open to Oakland patrolmen might have retained them. There seem to be several overlapping types of labor markets here. One is a national, professional labor market of college educated law enforcement men, mobile, seeking the best available professional opportunities, like college professors or young business school graduates. Because of Oakland's elaborate national recruiting campaigns at colleges in the 1960's and because of its excellent reputation as a professional department, the city could compete in this market. It offered initial on-the-job training and patrol experience. However, for this group of professionals, if more prestigious opportunities appeared, on they moved. To retain them, the city would have had to provide equivalent upward mobility channels, either through establishing more higher

level positions which could be attained more quickly by college graduates, or through significant pay differentials for education.

Educational pay differentials, however, would have serious costs, not merely budgetary. Comraderie, team loyalty, equality play a vital role in the functioning of police departments. Accentuating divisions among men by differential incentives based on education may undermine the principles upon which the organization functions. Local school systems and major universities have faced a similar problem. Should teachers of subjects with more attractive alternative opportunities get paid more than others? Should teachers of more difficult or more prestigious subjects get paid more than others? The educational field seems to accept higher pay for graduate school credits or Master's degrees, but resists further differentiation on economic grounds. A fine economic case can be made for differential incentives for teachers in shortages fields to obtain them without raising the pay of teachers who can be attracted at lower salaries.[56] The trend in school systems, on the contrary, is towards equalizing salary schedules and employee organizations prod further in this direction. Differentiation among teachers on economic grounds is repugnant to the very values upon which school systems are based, in a way very similar to that in which differ-

entiation among policemen on educational or economic grounds would be viewed by police organizations. The institutional requirements of harmonious and equal working relationships among colleagues may far outweigh economic rationality. It is not even clear that economic incentives would work or that Oakland could hope to compete with the FBI.

If an unambiguous case cannot be made for offering law enforcement professionals incentives to stay, should they be hired at all? Here again, a clear judgment is difficult. Perhaps the intangible benefits to the department, in high level performance and professional tone, outweigh the investment lost when the men leave. With the abandonment of national recruiting and the establishment of residence preference, fewer men will be hired from a national market and these questions are likely to become moot. It will be interesting to observe the turnover experience with the local college graduates that are hired.

There are two local labor markets, majority group and minority group, each with a range of educational experience. Caucasians who resign and remain in law enforcement are most likely to leave the core city for quieter local positions, often with better promotional opportunities. The relevant economic incentive to retain this group would be larger pay differentials

over suburban or rural cities to compensate for the battle scars and anxiety of big city duty, as well as more promotional opportunities for experienced patrolmen. Increased vacation opportunities or sabbatical leaves to provide the refreshment of distance from tension are often suggested as well. These latter proposals may have independent merit for all policemen, but not for the city treasury. The men who leave for more peaceful departments, however, may be just the men who should be encouraged to leave, because they have lost their desire to cope with Oakland, its problems, and the nonpecuniary stresses of the job. This cannot always be predicted in advance, and turnover costs here may be well worthwhile.

There has been too little experience with the local minority community labor market to be able to evaluate its turnover. Minority group members would be less likely to be lured by the attractions of small enclaves and more likely to be committed to core city problems. Increasing the minority composition of the force may well have significant side benefits in reducing overall turnover, particularly if the general hostility between the police and minority communities can be reduced.

What about the almost two-thirds of the resignees who leave the law enforcement field? The largest group, 35 indi-

viduals, 21.5 percent of all resignations, left to enter private business; the next largest group, 28 individuals, 17.2 percent of resignations, left for personal reasons. We have no more detailed information about the jobs they took. We can only infer that a more attractive combination of pecuniary and nonpecuniary incentives emerged for these people outside of law enforcement; we can say nothing about the relative pushes and pulls of money and tastes. It is interesting to note that the less educated groups were more likely to leave for personal reasons and less likely to remain in law enforcement work than others, suggesting perhaps that college exposure enables people to make more informed and better career choices. Included in the group who left for personal reasons are those unhappy with the demands of the lifestyle of a policeman--night work, marital and family pressures, and general tensions. Again we can argue that such turnover should not be discouraged; indeed the unhappy or unsuited should be encouraged to leave.

Our speculations about resignations have led us to conclude that educational pay differentials would not be a desirable means of reducing turnover. Some of this turnover will be taken care of by recruiting Oakland residents and minorities. The possible effectiveness of differentials in retaining highly

educated men would be swamped by the morale effects on the police organization. Given the nature of the police job, some turnover has its value, particularly in so far as people with distaste for the city or the work leave. Perhaps we should be more concerned about people who remain on the force, despite dissatisfaction, because of a lack of attractive alternative opportunities or motivation. In any case, educational differentials are likely to create more problems than they solve.

Substantive restructuring of the job, however, to make it more flexible and to better match duties with individual skills and interests, may well be called for. More promotional opportunities may well be provided in the context of a general restructuring of the job. Perhaps the changing composition of the force, adding women as well as minorities, will provoke such changes. To do justice to the rich possibilities here, an additional study would be required.

The monopsony hypothesis is contradicted once more by the evidence gleaned from our study of resignations. Indeed, there is competition among police departments. Big city status seems to yield not monopsony power to offer low wages, but the need for higher wages than surrounding departments to compensate for the disutilities involved in big city duty. Roger W.

Schmenner's empirical work, discussed in Chapter 3, gave him the suspicion that this might be true.[57] Our discoveries offer some confirmation. Police departments do not seem to wield monopsony power.

CHAPTER 6

FOOTNOTES

1. U. S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census, 1970 Census of Population, General Social and Economic Characteristics, California.

2. Oakland Civil Service Office.

3. United States District Court, Northern District of California, Clarence Penn et al. vs. William Stumpf, et al., Civil Action No. C-69-239 OJC.

4. City of Oakland, "Inter-office Letter from City Attorney Edward A. Goggin and Deputy City Attorney William C. Sharp to James M. Newman, subject Penn v. Stumpf," April 10, 1972.

5. Clarence Penn vs. William Stumpf (1970) 308 Fed. Supp. 1238.

6. Chief Justice Warren Burger, Willie S. Griggs v. Duke Power Company, 28 L. ed 2d 158, paragraph 12.

7. Equal Employment Opportunity Commission, Guidelines on Employee Selection Procedures, Federal Register, Volume 35, Number 149, August 1, 1970, Washington, D. C., pp. 12333-1 to 12333-3.

8. Ibid., pp. 12333-1.

9. Ibid.

10. Ibid.

11. Civil Rights Act of 1964 (42 U.S.C., 2000e, et. seq.), Section 703 (a) (2).

12. Equal Employment Opportunity Commission, Guidelines on Employee Selection Procedures, op. cit., p. 12333-1.

13. American Psychological Association, "Standards for Educational and Psychological Tests and Manuals," (Washington, D.C.: American Psychological Association).

14. Equal Employment Opportunity Commission, Guidelines on Employee Selection Procedures, op. cit., pp. 12333-2.

15. For an excellent summary discussion of the case law, see Richard F. Biddle, Discrimination: What Does It Mean? (Chicago: International Personnel Management Association),
16 16 pp. Also see State of California, Fair Employment Practices Commission, Guidelines on Employee Selection Procedures, October, 1972: and Betty R. Anderson and Martha P. Rogers, Personnel Testing and Equal Employment Opportunity (Washington, D. C.: U. S. Government Printing Office, December, 1970).

16. Richard E. Biddle, Discrimination: What Does It Mean?, op. cit., p. 7 referring to Moody v. Albermarle, Fourth Circuit Court of Appeals.

17. William K. Hunter and Thomas J. Culligan, "An Analysis of Factors to Predict Work Performance of Oakland Police Officers," James M. Newman, Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection (Berkeley, California: Education/Research, Inc., February, 1972).

18. The middle individuals were eliminated because their inclusion would cloud the process of discriminating between top and bottom performers and because the differences in the raw scores on which the rankings are based was not nearly as distinctive for the middle 60 as for the top and bottom 30. Two more were eliminated due to lack of test scores and background information. See William K. Hunter and Thomas J. Culligan, ibid., pp. vi-3.

19. Ibid., Table 1, pp. vi-10.

20. Ibid.

21. William K. Muir, "Personal Characteristics that Contribute to Good Police Work, James M. Newman, Assessment of

Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection, op. cit.

22. Ibid., pp. vii-33.

23. Ibid., pp. vii-37.

24. Ibid., pp. vii-38.

25. Ibid., pp. vii-42.

26. Ibid., pp. vii-43.

27. Dr. Floyd O. Due, "History and Personality Characteristics Favoring Success as a Police Officer," unpublished paper, 1972.

28. Talk with James M. Newman, Personnel Director, City of Oakland, July 17, 1974.

29. State of California, Fair Employment Practices Commission, Affirmative Action Survey By California FEPC, May, 1974, 58 pp., unpublished paper.

30. Ibid.

31. Ibid.

32. United States District Court, Northern District of California, Clarence Penn et al. vs. William Stumpf et al., Civil Action No. C-69-239 OJC, Consent Decree, December 20, 1973, p. 5.

33. Oakland Civil Service Office.

34. State of California, Fair Employment Practices Commission, Affirmative Action Survey by California FEPC, op. cit.

35. Ibid.

36. Oakland Civil Service Rule 4:03, July 20, 1971.

37. See Silas Fctor v. City of Torrance, 2 Civil No. 39769, California Court of Appeals.

38. Oakland City Council Resolution No. 51836, October 26, 1971.

39. United States District Court, Northern District of California, Clarence Penn et al. vs. William Stumpf, et al., Civil Action No. C-69-239 OJC, Consent Decree, December 20, 1973, p. 3.

40. Ibid.

41. Ibid.

42. Oakland Civil Service Office, "Interim Progress Report on Minority Recruiting Program for the Bay Area," unpublished paper.

43. Ibid.

44. James M. Newman, July 17, 1974.

45. Cakland City Council Resolution No. 41933, OCCB, and Ordinance No. 8850 C.M.S., February 1, 1974.

46. State of California, Court of Appeals, First Appellate District, Division Three, Veragene Hardy vs. William F. Stumpf, 1 Civ. 32689, March 15, 1974.

47. Ibid.

48. Federal District Court, Joan Hail vs. James S. White, August 2, 1973.

49. Ibid.

50. J. Stanley Pottinger, Assistant Attorney General, "Brief for the United States as Amicus Curiae, in case of Joan Hail vs. James S. White," No. 74-1038, U. S. Court of Appeals, Ninth Circuit, April 5, 1974, 29 pp.

51. State of California, Commission on Peace Officers Standards and Training, A Career in Law Enforcement, October, 1969.

52. Ibid.

53. Ibid.

54. Ibid.

55. Ibid.

56. Joseph A. Kershaw and Roland N. McKean, Teacher Shortages and Salaries (New York: McGraw Hill, 1962).

57. Roger W. Schmenner, "The Determination of Municipal Employee Wages," Review of Economics and Statistics, Vol. LV, No. 1, February, 1973, pp. 83-91.

CHAPTER 7

SUMMARY AND CONCLUSIONS

Our search for an explanation of and a solution to the alleged shortages of police manpower in the 1960's has led us to three distinct theoretical models.

First, the simplest economic solution to the problem is to raise relative wages of policemen sufficiently to eliminate the shortage. The slightly richer Arrow and Capron conception of dynamic shortages adds that information gaps must be filled and institutional decisions made, so the wage adjustments might take some time. If demand continues to increase faster than supply, moreover, a shortage could be sustained indefinitely; the adjustment process would be an ongoing one.

Secondly, it is argued, most persuasively by Eugene J. Devine, that local governments are monopsonistic employers of certain categories of labor, including policemen. Therefore, shortages in these categories arise because a monopsonist will experience job vacancies in equilibrium, at a monopsony wage, and will neither raise wages nor recruitment costs sufficiently to eliminate them. The shortage, then, is a function of market power and an equilibrium result.

Thirdly, in the most rigorous treatment, Ronald Ehrenberg stresses the complex interaction between wages, hiring standards, authorized employment levels, and vacancy rates. He combines them in a utility maximizing model and emerges with a set of formal relationships among them, which are spelled out clearly but are too complex to yield simple conclusions. He explores, as well, the problem of selecting employees from heterogeneous applicants, given authorized employment and wage levels, by choosing a minimum acceptable quality level, defined perhaps by a vector of hiring standards. He specifies theoretically how to choose this minimum acceptable quality level in order to maximize the expected value of the net gain to society. He presents in detail the effect of changes in wages, number of applicants, authorized employment level, or value of the public service on the minimum acceptable quality level and on the expected vacancy rate.

How useful are these models in understanding the experience of the City of Oakland in the 1960's and 1970's? Particularly high vacancy rates of 6.3 percent in 1966 and 6.1 percent in 1968 existed (see Table 4-12). Complaints of shortages of qualified applicants were loud and persistent, in spite of well developed national recruiting campaigns and starting salaries

equal to 113 percent in 1966 and 117 percent in 1968 of the average earnings of San Francisco-Oakland area production workers in manufacturing (see Table 4-7). Did the apparent shortages reflect a disequilibrium situation which would be resolved by relative wage increases? Did they reflect a monopsonistic equilibrium? Did they emerge from the definition of quality inherent in the selection process? Can we choose one explanation, or a combination of explanations, or none?

Our evidence is consistent with a dynamic shortage explanation, in which the lags in market adjustment were ultimately corrected. In 1968, patrolmen's starting salaries were increased twice, 8.7 percent in July and 6.5 percent in August. The starting salary relative to production workers' wages rose from 117 percent in July, 1968, to 125 percent in July, 1969, to 135 percent in July, 1970, and back to 125 percent thereafter. Simultaneously, general economic conditions worsened, political turmoil lessened, departmental image improved, and attempts to attract more minorities to the force were launched. The vacancy rate declined from 6.1 percent of authorized positions in July, 1968, to zero in June, 1969, and remains very small. The complaints have shifted from general shortages of qualified applicants to shortages only of qualified minority applicants.

The implications of conventional economic postulates are supported as well by the removal of 20 authorized patrolman positions in July, 1974, a classic employment response to continued salary increases brought about by the pressures of inflation. The demand for public employees may well be responsive to wage increases.

We reject the monopsony explanation that the shortages of the 1960's were equilibrium positions at a monopsony wage. There is no evidence of the exercise of monopsony power. Police departments compete for ambiguously defined qualities like trainability and good character with a wide range of private employers. Policemen do not possess specific, unique skills or licenses which can only be sold to police departments. Moreover, core city police departments compete with surrounding suburban and rural departments. Their status does not yield monopsony power to offer lower wages, but demands compensating differentials for the greater difficulties and tensions involved.

We believe, however, in greater complexity than the simplest economic explanation allows. We support Ehrenberg's emphasis on the interactions among wages, hiring standards, authorized employment levels and vacancy rates. We would

add recruitment and training as well. Ehrenberg stresses the theoretical importance of the minimum acceptable quality level chosen, but dismisses its substance as "not directly observable." We have concentrated on observing and defining the vector of hiring standards of the Oakland Police Department, and the changes therein, between 196[illegible] and 1974. We have found that the particular recruitment sources, hiring standards and selection processes used determine directly the available labor supply and the substantive composition of the police force.

The policing job does not lend itself to clear economic analysis by specifying a production function, determining derived demand functions, and stating the qualities required of the labor supply. It is not only a public service, with all the attendant difficulties of defining prices and outputs, but it is a politically sensitive public service with inherently contradictory elements. The ambiguities of the job, and, therefore, of the qualities necessary for its successful performance, are discussed in Chapter 2.

Nevertheless, prevailing ideas about the minimum acceptable characteristics of policemen were translated into detailed requirements about age, height, weight, vision, and education, and screened further by Mental Adaptability, Civil Service,

Physical Agility, and Oral selection examinations, all of which seriously restricted the available labor supply. The Oakland Police Department's Personnel Division estimated that less than half of one percent of Oakland's total population in 1969 was eligible to apply and approximately one-tenth of one percent would pass successfully through the selection process. If the male population 21 to 32 years old is used as a base, still only slightly over 2 percent of that age group would succeed in the tests. Clearly the qualifications and selection devices chosen were partly responsible for the shortage complaints.

What characteristics were sought by the Mental Adaptability tests, the Civil Service test, the Physical Agility test, and the Oral examination? Using data from 2,366 employment applications submitted between 1965 and June, 1971, and multiple regression techniques, we investigated the determinants of success in the selection process. We find, for example, that while high school graduation or its equivalent is the only formal educational requirement, the probability of success in the Mental Adaptability is increased by large magnitudes as years of higher education increase from some years of junior college through three to four years of senior college or a college degree. Senior college education still has a significant effect, moreover, on the ability to pass the Civil Service test.

Local residence appears on balance to have a negative effect on the probability of selection in these years of national recruiting. Out-of-state candidates, particularly those found on college campuses, would be functioning in a national, professional labor market for law enforcement personnel, seeking out the best career opportunities. They would be likely to have invested in more search and more self-selection before applying, and, therefore, to be more motivated or interested than the average local resident. Turnover figures show, however, that out-of-state residents would also be more likely to resign than California residents (see Table 2-7) to take better professional opportunities elsewhere.

Minority status, whether measured directly or indirectly by the proxy of high school attendance in the South, had a large and significant negative effect on the probability of passing the written tests. In 1966, only 3 percent of the Oakland police force was minority; by the end of 1970, the percent minority had increased to 6.5 (see Table 6-2). The small minority representation seemed to be a direct result of recruitment and selection policies which reinforced the suspicious attitude of the minority community towards the police, an alien organization.

The pressures of the 1970's have produced policy changes which have significantly increased minority representation on the force to 16 percent of the whole force and 61.0 percent of the new hires in 1973. Moreover, the Oakland experience has demonstrated that minority representation can be improved without sacrificing standards of quality. Widely publicized changes in recruitment emphasis, rendered concrete and credible by a residence requirement, an Affirmative Action program, mass media advertising, and demonstrable results, have clearly changed the composition and the public image of the department. The Mental Adaptability and Civil Service general knowledge tests have been replaced by a more content valid written test, primarily of reading comprehension. Minority group members are still substantially more likely to fail the written test than others (see Table 6-4). It would be interesting, in future research, to compare the determinants of success on the new written test with the determinants of success on the Mental Adaptability and Civil Service tests between 1965 and 1971. Yet, in spite of the continued use of a written test, Oakland, through concentrated efforts on other fronts, seems well on its way to eliminating the adverse effect of its selection process on the minority composition of the

police force. Even in 1971, those minority members who passed the written had a higher probability of passing the Oral than other candidates: this continues to be true. No other device in the selection process has an adverse effect on minority candidates, and today's aggressive minority recruiting has clearly brought positive results.

As for other characteristics sought by the selection process, specific investment by applicants in police science courses is unimportant, but previous experience as a policeman does have a significant, positive effect on the probability of success at all stages of the process. The role of previous salary as an indicator to the department of an applicant's potential performance is clouded by the difficulties of filtering out part-time from full-time work. The highest previous salary category, $700 a month or more, does have a consistent, significant positive effect on the probability of a man being accepted. Other salary groups were inconclusive. If, however, we minimize the distorting effects of part-time work by looking separately at the group with no college experience, higher salaries do indicate progressively greater probabilities of being selected, as economic theory would predict. The number of previous jobs enumerated on the application is unimportant. Age has a small,

negative effect on passing the Mental Adaptability, resulting from the well-known attrition of test-taking ability with age, holding education constant. Age, however, has a positive effect on passing the Oral, reflecting a concern with the candidate's maturity.

The legal insistence in the 1970's that if a selection device has an adverse effect on the employment of groups protected by the Civil Rights Act of 1964, it must be demonstrably job-related, and the empirical difficulties inherent in proving job-relatedness, have led women to challenge other standards hallowed by tradition. The distinction between patrolman and policewoman has been removed by Oakland through the establishment of the combined category, police officer. Height and weight standards which would exclude the majority of women from the police officer job have been abolished by court order. Another substantial change in the composition of the Oakland Police Department seems imminent. All hiring has currently been suspended while a job-related Physical Agility exam which will adequately screen the strength and physical abilities of women is developed. How many women will succeed in being selected and how well women will be able to perform as police officers remains to be seen. Far reaching cultural adaptations

may well be required of the police organization. Perhaps they will lead to a long overdue substantive restructuring of the job based on a more careful appraisal of matching particular police functions and individual skills.

Thoughtful analysis and restructuring of the job may well yield a conception of a professional police officer based not on qualities like college graduation, which have only an ambiguous relationship to job requirements and performance, but on a clear understanding of the dimensions and demands of the job. We rejected differential economic incentives to retain more educated police officers because, in the existing structure, its threats to morale, equality, comraderies, and organizational effectiveness seemed to far outweigh any possible gain. Far better use could be made of economic incentives in the context of a clear understanding of the performance requirements of the job.

We have concluded, therefore, that economic incentives, recruitment and selection must be viewed together. More attempts must be made to understand their interaction, both in theory and in practice. Techniques must be developed to observe, analyze and understand vectors of hiring standards and their economic functions. In the police case, the vector of

hiring standards used defines not only the potential labor supply, but the nature of the job itself. It will be fascinating to watch the substantive effects of changes in the vector of hiring standards on the police job of the future.

BIBLIOGRAPHY

BOOKS

Becker, Gary S., Human Capital. New York: Columbia University Press, 1964.

Berkeley, George E., The Democratic Policeman. Boston: Beacon Press, 1961.

Blank, David H., and Stigler, George, The Demand and Supply of Scientific Personnel. New York: NBER, 1957.

Blaug, Mark, editor, Economics of Education, 1. Baltimore: Penguin, 1968.

Boudua, David J., The Police. New York: Wiley, 1967.

Bowen, William G., and Finegan, T. Aldrich, The Economics of Labor Force Participation. Princeton, N. J.: Princeton University Press, 1969.

Chevigny, Paul, Police Power. New York: Vintage Books, 1969.

Devine, Eugene J., Analysis of Manpower Shortages in Local Government. New York: Praeger, 1969.

Durkheim, Emile, Professional Ethics and Civic Morals. Glencoe: The Free Press, 1958.

Ehrenberg, Ronald G., The Demand for State and Local Government Employees. Lexington, Mass.: D. C. Heath, 1972.

Franke, Walter, and Sobel, Irvin, The Shortage of Skilled and Technical Workers. Lexington, Mass.: D. C. Heath, 1970.

Friedman, Milton, Price Theory: A Provisional Text. Chicago: Aldine, 1962.

International City Managers' Association, Municipal Yearbook, 1965-1973. Chicago: International City Managers' Association, 1970.

Johnston, J. Econometric Methods, 2nd edition. New York: McGraw Hill, 1972.

Juris, Hervey A., and Feuille, Peter, Police Unionism. Lexington, Mass.: D. C. Heath, 1973.

Kershaw, Joseph A., and McKean, Roland N., Teachers Shortages and Salaries. New York: McGraw Hill, 1962.

Lecht, Leonard A., Manpower Needs for National Goals in the 1970's. New York: Frederick A. Praeger, 1969.

Niederhoffer, Arthur, Behind the Shield. Garden City, N. Y.: Doubleday, 1967.

Phelps, Edmund S., editor, Microeconomic Foundations of Employment and Inflation Theory. New York: W. W. Norton, 1970.

Radano, Gene, Walking the Beat. Toronto: Collier Books, 1969.

Rees, Albert, and Schultz, George P., Workers and Wages in an Urban Labor Market. Chicago: University of Chicago Press, 1970.

Reiss, Albert J., Jr., The Police and the Public. New Haven: Yale University Press, 1971.

Rheinstein, Max., Max Weber on Law in Economy and Society. Cambridge, Mass.: Harvard University Press, 1954.

Rubinstein, Jonathan, City Police. New York: Farrar, Straus and Giroux, 1973.

Skolnick, Jerome, Justice without Trial. New York: Wiley, 1967.

Vollmer, Howard, and Mills, Donald L., Professionalization. Englewood Cliffs, N. J.: Prentice Hall, 1966.

Wellington, Harry H., and Winter, Ralph K., Jr., The Unions and the Cities. Washington, D. C.: Brookings Institution, 1971.

Westley, William A., Violence and the Police. Cambridge, Mass.: MIT Press, 1970.

Whittemore, L. H., Cop! New York: Holt, Rinehart and Winston, 1969.

Wilson, James Q., Varieties of Police Behavior. Cambridge, Mass.: Harvard University Press, 1968.

ARTICLES

Alchian, Armen A., "Information Costs, Pricing and Resource Unemployment," in Phelps, Edmund S., Microeconomic Foundations of Employment and Inflation Theory. New York: W. W. Norton, 1970, pp. 27-52.

Altman, Stuart H., "Earnings, Unemployment, and the Supply of Enlisted Volunteers," Journal of Human Resources IV (Winter, 1969), pp. 38-59.

———— ————, "The Structure of Nursing Education and Its Impact on Supply," in Klarman, Herbert E., editor, Empirical Studies in Health Economics. Baltimore: The Johns Hopkins Press, 1970, pp. 335-352.

Archibald, George, "The Factor Gap and the Level of Wages," Economic Record XXX (November, 1954), pp. 187-199.

Arrow, K. J., and Capron, W. M., "Dynamic Shortages and Price Rises: The Engineer Scientist Case," Quarterly Journal of Economics LXXIII(2) (May, 1959), pp. 292-308.

Ashenfelter, Orley, "The Effects of Unionization on Wages in the Public Sector: The Case of Fire Fighters," Industrial and Labor Relations Review 24(2) (January, 1971), pp. 191-202.

Balch, Robert W., "The Police Personality: Fact or Fiction," Journal of Criminal Law, Criminology and Police Science 63 (1972), p. 106-112.

Bancroft, Raymond L., "Municipal Law Enforcement, 1966," Nations' Cities 4 (February, 1966), pp. 15-17.

Barbour, George P., Jr., "Measuring Local Government Productivity," International City Managers' Association, The Municipal Yearbook 1973, pp. 38-44.

Bronfenbrenner, Martin, "Potential Monopsony in Labor Markets," Industrial and Labor Relations Review 9(4) (July, 1956), pp. 577-588.

Carlsson, Robert J., and Robinson, James W., "Criticism and Comment: Compensation Decisions in Public Organizations," Industrial Relations 9(1) (October, 1969), pp. 111-113.

———————, "Toward a Public Employment Wage Theory," Industrial and Labor Relations Review 22(2) (January, 1969), pp. 243-248.

Carte, Gene E., "Police Representation and the Dilemma of Recruitment," Issues in Criminology 6(1) (Winter, 1971), pp. 85-95.

Chow, Gregory C., "Tests of Equality between Subsets of Coefficients in Two Linear Regressions," Econometrica 28 (1960), pp. 591-605.

Colarelli, Nick J., and Siegel, Saul M., "A Method of Police Personnel Selection," The Journal of Criminal Law, Criminology and Police Science 55 (1964), pp. 287-289.

Craft, James A., "Toward a Public Employee Wage Theory: Comment," Industrial and Labor Relations Review 23(1) (October, 1969), pp. 89-95.

Ehrenberg, Ronald G., "Municipal Government Structure, Unionization, and the Wages of Fire Fighters," Industrial and Labor Relations Review 27(1) (October, 1973), pp. 36-48.

Fisher, A. C., "The Cost of the Draft and the Cost of Ending the Draft," American Economic Review LIX (June, 1969), pp. 239-254.

Fisher, Franklin M., "Tests of Equality between Sets of Coefficients in Two Linear Regressions, An Expository Note," Econometrica 38(2) (March, 1970), pp. 361-366.

Flynn, J. T., and Peterson, M., "The Use of Regression Analysis in Police Patrolman Selection," Journal of Criminal Law, Criminology and Police Science 63(4) (1972), pp. 564-569.

Fogel, Walter, and Lewin, David, "Wages Determination in the Public Sector," Industrial and Labor Relations Review 27(3) (April, 1974), p. 410-431.

Frankel, Laurie, and Allard, Mary Ann, "Personnel Practice of Municipal Police Departments," ICMA Urban Data Service Reports 4 (August,1972), pp. 1-17.

Freund, James L., "Market and Union Influence on Municipal Employee Wages," Industrial and Labor Relations Review 27(3) (April.1974), pp. 391-404.

Garbarino, Joseph W., "Professional Negotiations in Education," Industrial Relations 7(2) (February, 1968), pp. 93-101.

Geller, Irving B., "Higher Education and Policemen," Journal of Criminal Law, Criminology and Police Science 63 (1972), pp. 396-401.

Gerwin, Donald, "Compensation Decisions in Public Organizations," Industrial Relations 9(2) (February, 1969), pp. 175-184.

Gordon, Donald F., and Hynes, Allan, "On the Theory of Price Dynamics," in Phelps, Edmund S., Microeconomic Foundations of Employment and Inflation Theory. New York: W. W. Norton, 1970, pp. 369-393.

Greenwood, Ernest, "Attributes of a Profession," in Nosow, Sigmund, and Form, William H., Man, World and Society. New York: Basic Books, 1962, pp. 207-218.

Harman, B. Douglas, "Expenditures for Police and Fire Departments," International City Managers' Association Urban Data Service Reports 2 (September, 1970), pp. 1 25.

Hogan, Robert, "Successful Oakland Police: A Personological Profile," in Newman, James M., and Rogin, William E., Assessment of Police Recruitment, Selection and Training:

An Interdisciplinary Approach, Final Report: Recruitment and Selection. Berkeley, Calif.: Education/Research, Inc. February, 1972, pp. III-1 - III-13.

Hoobler, Raymond L., and McQueeney, J. A., "A Question of Height," The Police Chief XL (November, 1973), pp. 42-49.

Howe, George F., "Trends in Salaries of Policemen and Firemen," International City Managers' Association Urban Data Service Reports 1(7) (July, 1969), pp. 1-18.

Hunter, William K., and Culligan, Thomas J., "An Analysis of Factors to Predict Work Performance of Oakland Police Officers," in Newman, James M., and Rogin, William E., Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection, Berkeley, Calif.: Education/Research, Inc., February, 1972, pp. VI-1 - VI-37.

Hurd, Richard W., "Equilibrium Vacancies in a Labor Market Dominated by Non-profit Firms: The 'Shortage' of Nurses," Review of Economics and Statistics LV(2) (May, 1973), pp. pp. 234-240.

Jensen, Ollie, "Cultural Bias in Selection," in Golembiewski, Robert T., and Cohen, Michael, editors, People in Public Service. Itasca, Ill.: F. E. Peacock Publishers, 1970, pp. 287-295.

Kane, Walter C., and Neuhart, Lynn A., "Police Educational Incentive Pay Plans," International City Managers' Association Management Information Service 2(L-5) (May, 1970), pp. 1-11.

Lawer, Neil, "Developing New Employment Tests for Minorities," Public Administration Review XXXI (July-August, 1971), pp. 459-461.

Levy, Ruth J., "Investigation of a Method for the Identification of the High-Risk Police Applicant," Can High Risk Police Applicants be Identified?, Institute for Local Self Government, Berkeley, California, July, 1971, pp. 1-58.

———————, "Predicting Police Failures," Journal of Criminal Law, Criminology and Police Science 58(2) (1967), pp. 265-277.

Lewin, David, "Wage Parity and the Supply of Police and Firemen," Industrial Relations 12(1) (February, 1973), pp. 77-85.

Manson, Don., and Howe, George, "Recent Trends in Police Community Relations," International City Managers' Association Urban Data Service Reports 2(3) (March, 1970), pp. 1-19.

Matarazzo, J. D., "Characteristics of Successful Policeman and Fireman Applicants," Journal of Applied Psychology 48 (1964), pp. 123-133.

McAllister, John A., "A Study of Prediction of Measurement of Police Performance," Police 14 (1970), pp. 58-64.

McCall, John, and Wallace, Neil, "A Supply Function of First-term Re-enlistees to the Air Force," Journal of Human Resources IV(3) (Summer, 1969), pp. 293-310.

McDevit, Robert J., "Situational Tests in Metropolitan Police Selection," Journal of Criminal Law, Criminology and Police Science 57 (1966), pp. 99-106.

McNamara, John H., "Uncertainties in Police Work: The Relevance of Police Recruits' Backgrounds and Training," in Boudua, David J., editor, The Police: Six Sociological Essays. New York: John Wiley and Sons, 1967, pp. 163-250.

Miller, Christine M., "A Study of the MMPI as a Selection Device for the Oakland Police Department," in Newman, James M., and Rogin, William E., Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection. Berkeley, Calif.: Education/Research, Inc., February, 1972, pp. IV-1 - IV-21.

Mills, Robert B., McDevitt, Robert J., and Tonkin, Sandra, "Situational Tests in Metropolitan Police Recruit Selection," Journal of Criminal Law, Criminology and Police Science 57 (1966), pp. 99-104.

Mortensen, Dale T., "A Theory of Wage and Employment Dynamics," in Phelps, Edmund S., Microeconomic Foundations of Employment and Inflation Theory. New York: W. W. Norton, 1970, pp. 167-211.

———————, "Job Search, the Duration of Unemployment, and the Phillips Curve," American Economic Review 60 (December, 1970), pp. 847-861.

Muir, William K., "Personal Characteristics that Contribute to Good Police Work," in Newman, James M., and Rogin, William E., Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection. Berkeley, Calif.: Education/Research, Inc., February, 1972, pp. VII-1 - VII-124.

Mullineaux, Jewel E., "An Evaluation of Predictors Used to Select Patrolmen," Public Personnel Review 16, pp. 84-86.

Newman, James M., Rogin, William E., Hunter, William K., and Vora, Shanti, "Investigation of a Method for Identification of the High-Risk Police Applicant: An Analysis and Interpretation Based on Available Data," Can High Risk Police Applicants Be Identified?, Institute for Local Self Government, Berkeley, California, July, 1971.

Oi, Walter, "Labor as a Quasi-Fixed Factor," Journal of Political Economy LXX (December, 1962), pp. 538-555.

Sanders, Eric P., "Oakland Police Sample: A Descriptive Psychographic Study," in Newman, James M., and Rogin, William E., Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection. Berkeley, Calif.: Education/Research, Inc., February, 1972, pp. V-1 - V-33.

Schmenner, Roger W., "The Determination of Municipal Employee Wages," Review of Economics and Statistics LV(1) (February, 1973), pp. 83-91.

Spencer, Gilmore, and Nichols, Robert, "A Study of Chicago Police Recruits: Validation of Selection Procedures," The Police Chief 38(6) (June, 1971), pp. 50-55.

Tent, Deborah Ann, and Eisenberg, Terry, "The Selection and Promotion of Police Officers: A Selected Review of Recent Literature," The Police Chief 39(2) (February, 1972), pp. 20-29.

Vaughn, Lamar M., and Tenenbaum, Allen, "Oakland's Recruitment and Selection Methods: A Historical Overview," in Newman, James M., and Rogin, William E., Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection. Berkeley, Calif.: Education/Research, Inc., February, 1972, pp. I-1 - I-79.

Wentworth, Kenneth L., "Development and Use of Written Tests," in Donovan, J. J., editor, Recruitment and Selection in the Public Service. Chicago: Public Personnel Association, 1968, pp. 112-122.

Westley, William A., "Violence and the Police," American Journal of Sociology LIX (July, 1953), pp. 34-41.

Whalen, Charles, and Zannini, Susan, "Trends in Police and Fire Salaries," International City Managers' Association Urban Data Service Reports 3 (October, 1971), pp. 1-16.

Wilensky, Harold L., "Varieties of Work Experience," in Borow, Henry, Man in a World at Work. Boston: Houghton Mifflin, 1964, pp. 125-154.

Wilson, James Q., "Generational and Ethnic Differences among Career Police Officers," American Journal of Sociology LXIX(5) (March, 1964), pp. 522-528.

Yett, Donald E., "Causes and Consequences of Salary Differentials in Nursing," Inquiry VII (March, 1970), pp. 78-99.

_____, "The Chronic 'Shortage' of Nurses: A Public Policy Dilemma," in Klarman, Herbert E., editor, Empirical Studies in Health Economics. Baltimore: The Johns Hopkins Press, 1970, pp. 357-389.

PUBLIC DOCUMENTS

Anderson, Betty R., and Rogers, Martha P., Personnel Testing and Equal Employment Opportunity. Washington, D. C.: U. S. Government Printing Office, December, 1970.

Baehr, Melaney E., Furcon, John E., and Froemel, Ernest C., Psychological Assessment of Patrolman Qualifications in Relation to Field Performance. Washington, D. C.: U. S. Government Printing Office, November 5, 1968.

City of Oakland, California, City Planning Department, Options for Oakland: A Summary Report on the Oakland 701 Project. December, 1969.

Civil Rights Act of 1964 (42 U.S.C., 2000e, et seq.), Section 703 (a) (2).

Cohen, Malcolm S., Rea, Samuel A., Jr., and Terman, Robert I., "A Micro Model of Labor Supply," U. S. Department of Labor, Bureau of Labor Statistics Staff Paper No. 4. Washington, D. C.: U. S. Government Printing Office, 1970.

Danielson, William F., Police Compensation, a report submitted to the President's Commission on Law Enforcement and Administration of Justice, 1967.

Equal Employment Opportunity Commission, Guidelines on Employee Selection Procedures, Federal Register, 35(149) (August 1, 1970). Washington, D. C.

Germann, A. C., "Recruitment, Selection, Promotion and Civil Service," President's Commission on Law Enforcement and the Administration of Justice. Washington, D. C.: U. S. Government Printing Office, 1967.

National Commission on Law Observance and Enforcement, "Report on the Police." Washington, D. C.: U. S. Government Printing Office, 1931.

National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U. S. Department

of Justice, "Predicting Patrolman Performance" (a summary blurb of the Baehr, et al. study).

"Omnibus Crime Control and Safe Streets Act of 1968," Public Law 90-351, 90th Congress, HR 5037, June 19, 1968.

President's Commission on Law Enforcement and Administration of Justice, Task Force Report: The Police. Washington, D. C.: U. S. Government Printing Office, 1967.

President's Commission on Law Enforcement and Administration of Justice, The Challenge of Crime in a Free Society. Washington, D. C.: U. S. Government Printing Office, February, 1967.

State of California, Commission on Peace Officers Standards and Training, A Career in Law Enforcement. October, 1969.

State of California, Commission on Peace Officers Standards and Training, California Law Enforcement Recruitment Program. Law Enforcement Assist. Proj. 232, August 31, 1968.

State of California, Department of Human Resources Development, California Labor Market Bulletin. July, 1971, to July, 1973.

State of California, Department of Industrial Relations, Division of Labor Statistics and Research, California Labor Statistics Bulletin. July, 1962. to July, 1973.

State of California, Fair Employment Practices Commission, Guidelines on Employee Selection Procedures. October, 1972.

U. S. Advisory Commission on Civil Disorders, Report on the National Advisory Commission on Civil Disorders. New York: Bantam, 1968.

U. S. Bureau of Employment Security, Dictionary of Occupational Titles, 3rd edition. Washington, D. C.: U. S. Government Printing Office, 1965.

U. S. Bureau of the Census, Census of Population: 1970 Detailed Characteristics, Final Report PC(1)-D6 California, Section

1 and Section 2. Washington, D. C.: U. S. Government Printing Office, 1972.

U. S. Bureau of the Census, 1970 General Social and Economic Characteristics, Final Report PC (1)-C6 California. Washington, D. C.: U. S. Government Printing Office, 1972.

U. S. Department of Justice, Federal Bureau of Investigation National Academy, The FBI Pledge for Law Enforcement Officers. Washington, D. C.: Federal Bureau of Investigation National Academy, 1959.

OTHER SOURCES

American Psychological Association, "Standards for Educational and Psychological Tests and Manuals." Washington, D. C.: American Psychological Association.

American Trial Lawyers Association, "Crime and Its Cause in Los Angeles." Lancaster, Calif." Golden West Publishing Company, 1966.

Aussieker, M. W., Jr., "Police Collective Bargaining." Chicago, Ill.: Public Personnel Association, 1969.

Bay Counties Peace Officers Association and State of California, Commission on Peace Officers Standards and Training, "Symposium: Professional Police: Fact or Fantasy." April 3, 1968.

Berman, Louise, "An Empirical Study of Economic Determinants of Public Employee Salary Schedules: City Policemen, Firemen, Typists and Stenographers," unpublished paper, University of California, Berkeley, 1968.

Biddle, Richard E., Discrimination: What Does it Mean? Chicago: International Personnel Management Association.

City of Oakland, City Council, Oakland City Council Resolution No. 41933, OCCB, and Ordinance No. 8850 C.M.S., February 1, 1974.

City of Oakland, City Council, Oakland City Council Resolution No. 51836, October 26, 1971.

City of Oakland, Civil Service Office, Announcement for Patrolman Examination, September, 1970.

City of Oakland, Civil Service Office, Files.

City of Oakland, Civil Service Office, "Interim Progress Report on Minority Recruiting Program for the Bay Area," unpublished paper, 1973.

City of Oakland, Civil Service Office, "Oakland Police Department Recruitment and Patrolman Selection Process," December, 1964, unpublished memorandum.

City of Oakland, Civil Service Office, Oakland Civil Service Rule 4:03, July 20, 1971.

City of Oakland, Civil Service Office, Employment Application.

City of Oakland, Civil Service Office, "Inter-Office Letter from City Attorney Edward A. Goggin and Deputy City Attorney William C. Sharp to James M. Newman subject Penn v. Stumpf," April 10, 1972.

City of Oakland, Police Department, "Demographic Analysis," unpublished paper, 1973.

City of Oakland, Police Department, Personnel Division, Memo from Lieutenant J. McArthur, unpublished, 1973.

City of Oakland, "The City of Oakland's Affirmative Action Program," unpublished paper, 1973.

Cohen, Bernard, and Chaiken, Jan M., Police Background Characteristics and Performance. New York: New York City Rand Institute, August, 1972.

Deane, R. T., "Simulating an Econometric Model of the Market for Nurses," unpublished Ph. D. dissertation, University of California, Los Angeles, 1971.

Devine, Eugene J., "Manpower Shortages in Local Government Employment," unpublished Ph. D. dissertation, University of California, Los Angeles, 1969.

Due, Floyd O., "History and Personality Characteristics Favoring Success as a Police Officer," unpublished paper, 1972.

_____, "Psychiatric and Psychological Screening of Police Applicants to an Urban Department: Computer Analysis of 113 Cases," paper delivered to meetings of American Psychiatric Association, May 13, 1970.

Encyclopedia of Careers and Vocational Guidance, revised edition, II. Chicago: J. G. Ferguson.

Hogan, Robert, "A Study of Police Effectiveness." Washington, D. C.: Experimental Publication System, American Psychological Association, June, 1970.

Hoover, J. Edgar, "Should You Go into Law Enforcement?" New York: New York Life Insurance, 1961.

Lewin, David, "Wage Determination in Local Government Employment," unpublished Ph. D. dissertation, University of California, Los Angeles, 1971.

Mayall, Donald, Human Resources Development for Oakland: Problems and Policies, SRI Project ID-5638. Menlo Park, Calif.: Stanford Research Institute, December, 1968.

Newman, James M., and Rogin, William E., Assessment of Police Recruitment, Selection and Training: An Interdisciplinary Approach, Final Report: Recruitment and Selection, CCCJ Grant No. 0156. Berkeley, Calif.: Education/Research, Inc., February, 1972.

Newman, James M., and Rogin, William E., Assessment of Police Recruitment, Selection and Training, Interim Report on Training, CCCJ Grant No. 0156. Berkeley, Calif.: Education/Research, Inc., March, 1971.

New York Times, Wednesday, August 15, 1973.

New York Times, Sunday, December 3, 1973.

O'Connor, George W., "Survey of Selection Methods." Washington, D. C.: International Association of Chiefs of Police, 1962.

Otis, Arthur S., Otis Self-Administering Tests of Mental Ability, Manual of Directions and Key (Revised) for Intermediate and Higher Examinations. New York: Harcourt, Brace and World, 1922.

Otis, Arthur S., and Lennon, Roger T., Otis-Lennon Mental Ability Test, Manual for Administration. New York: Harcourt, Brace and World, 1967.

State of California, Fair Employment Practices Commission, Affirmative Action Survey by California FEPC, unpublished paper, May, 1974.

Thompson, Frank J, "The Politics of Public Personnel Policy in a Core City," unpublished Ph. D. dissertation, University of California. Berkeley, 1973.

Tobin, James, "The Application of Multivariate Probit Analysis to Economic Survey Data," unpublished Cowles Foundation Discussion Paper No. 1, July 14, 1955, as revised December 1, 1955.

Watts, Harold W., "An Introduction to the Theory of Binary Variables (or All About Dummies)," unpublished Systems Formulation and Methodology Workshop Paper 6404, Social Systems Research Institute, University of Wisconsin, April 23, 1964.

Yett, Donald, "An Economic Analysis of the Hospital Nursing Shortage," unpublished Ph. D. dissertation, University of California, Berkeley, 1968.

COURT CASES

State of California, Court of Appeals, Silas Ector v. City of Torrance, 2 Civil No. 39769.

State of California, Court of Appeals, Veragene Hardy vs. William F. Stumpf, 1 Civil No. 32689, March 15, 1974.

U. S Court of Appeals, Ninth Circuit, Joan Hail vs. James S. White, "Brief for the United States vs. Amicus Curiae," No. 74-1038 J Stanley Pottinger, April 5, 1974, case pending.

U S District Court for Eastern District of Virginia, Richmond Division, United States of America v Virginia Electric and Power Company et al., Civ. A. No. 638-70-R, May 4, 1971

U S District Court, Massachusetts, Julius Arrington et al v. Massachusetts Bay Transportation Authority, Civ. A. No. 69-681, December 22, 1969

U S District Court, Minnesota, Fourth Division, Carter et al. vs Hugh Gallagher et al March 9, 1971

U. S District Court, Northern District of California, Clarence Penn et al. vs William Stumpf et al. (1970) 308, Fed Supp. 1238

U. S District Court, Northern District of California, Clarence Penn et al vs William Stumpf et al , Civil Action No. C-69-239 OJC, Consent Decree, December 20, 1973

U. S Supreme Court, Willie S Griggs v Duke Power Company, 28 L ed 2d 158, March 8, 1971.