

ABSTRACT

BRUNET, JAMES R. Determinants of Drug Testing Policies in Law Enforcement Agencies: Building and Testing a Theory of Public Sector Drug Testing. (Under the direction of Michael L. Vasu.)

Drug testing has become an increasingly important part of our social lives, especially in the workplace. This is particularly the case in the public sector where military personnel, police officers, transportation workers, and those seeking government employ routinely submit to government mandated drug screens. The genesis of large-scale drug testing of public workers is often traced back to President Reagan's 1986 call for a "drug-free federal workplace" (Executive Order 12564). State and local governments, particularly law enforcement agencies, followed the federal example and rapidly implemented drug testing policies. A large majority of local law enforcement agencies (approximately 77 percent) now test all job applicants, up from 25 percent in 1990.

The purpose of this investigation is to identify the historical, political, and legal preconditions that led to the widespread adoption of workplace drug testing in the public sector. This knowledge provides the theoretical platform for an empirical study of the factors that lead police departments to adopt different drug testing policies.

For safety sensitive positions, courts have granted government employers wide discretion in selecting from a menu of employee drug testing strategies. Random and mandatory screening of current and prospective public safety workers is permissible as long as certain due process procedures are followed. With such a wide range of options available, what leads one agency to adopt a more rigorous approach such as universal testing while another agency abstains from testing workers altogether? An emerging literature that conceives of drug testing as a mechanism of social control provides the theoretical base for this inquiry. An analysis of a random sample of law enforcement agencies in the United States (n=1,988) finds evidence that social distance within police organizations

(size of the sworn workforce, racial diversity), the social status of officers (starting salary), and the influence of third parties (collective bargaining) play significant roles in shaping a department's drug testing policy. The policy, administrative, and research issues emerging from the analysis are also discussed.

**DETERMINANTS OF DRUG TESTING POLICIES
IN LAW ENFORCEMENT AGENCIES:
BUILDING AND TESTING A THEORY OF PUBLIC SECTOR DRUG TESTING**

by
JAMES R. BRUNET

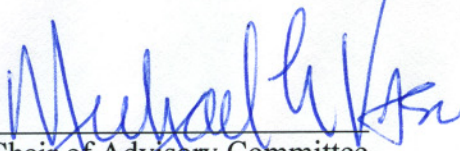
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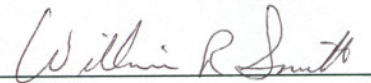
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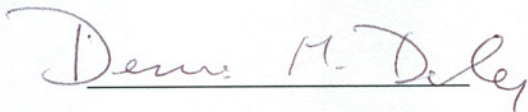
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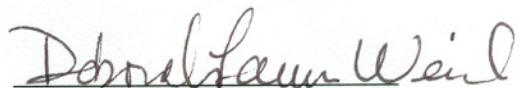
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DEDICATION

This manuscript is dedicated to my wonderful wife, parents, and brothers.

BIOGRAPHY

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CHAPTER 1: INTRODUCTION

Drug testing has moved into the mainstream of American life. The situations that trigger drug screens, as well as the justifications offered to defend their use, are varied and numerous. To protect the safety of the traveling public, commercial airline pilots and truck drivers are screened for substances that impair mental acuity and dull reflexes. Professional and amateur athletes are tested for performance enhancing drugs to ensure fair play and the integrity of results. High school students participating in extracurricular activities, persons under correctional supervision and those watching them, nuclear plant workers, life insurance applicants, military personnel, welfare recipients, police officers, college-loan recipients, and job seekers at most Fortune 500 companies routinely submit to drug tests. This is not meant to imply that drug testing has been adopted at every mere suggestion of its use. Calls for testing child-toting soccer moms and persons running for elected office have been met with disinterest or unsympathetic judicial rulings. Nevertheless, drug testing has become an increasingly important part of our social lives, especially in the workplace.

Workplace drug testing is a commonplace practice in many public and private sector organizations in the United States. The apparent ubiquity of drug testing, however, belies its rapid emergence over the last two decades. From the time of its introduction during the Vietnam-era until the mid-1980s, drug testing was largely limited to armed services personnel (Mulloy 1991). Large-scale drug testing of federal workers only began with President Reagan's 1986 call for a "drug-free federal workplace" (Executive Order 12564). The order required workers in "sensitive positions," approximately 17 percent of the federal workforce, to submit to drug screens (Jacobs and Zimmer 1991). The size and scope of the federal drug testing program expanded with time. Currently, 1.7 million federal workers in 111 agencies are tested (Koch 1998).

State and local governments, particularly law enforcement agencies, quickly followed the federal example. A number of larger police departments experimented with a limited form of employee drug testing prior to the release of the Executive Order (McEwen, Manili, and Connors 1986). As the decade neared its end, however, the pace of implementation increased significantly. By 1990, over half of all state police required job applicants to submit to mandatory drug tests (U.S. Department of Justice 1995, 15). Mandatory testing of sworn officers was very rare (only 4 percent of departments). At present, 82 percent of state police departments test all new applicants and 10 percent test all field officers (Reaves and Goldberg 1999). A large majority of local law enforcement agencies (approximately 77 percent) now test all job seekers, up from 25 percent in 1990. The experience of Florida illustrates the swift embrace of drug testing. The number of Florida municipalities with a drug testing program or policy jumped from 59.0 percent in 1988 to 94.2 percent two years later. The change was largely due to a new state mandate that directed all law enforcement agencies to test applicants (Daly 1993, 208). Over this same period, private sector employers rapidly implemented drug detection procedures. By 1996, 81 percent of corporations reported testing employees for illicit substances, a threefold increase since 1987 (American Management Association 1998).

As the rhetoric surrounding employee drug testing has cooled and the legal questions about its constitutionality have been settled, it is an opportune time to critically examine the implementation of this uniquely American phenomenon. Plying the tools of the social scientist, it is possible to identify the historical, political, and legal preconditions that led to the widespread adoption of workplace drug testing in the public sector. This knowledge may serve as a theoretical and empirical platform for studying other types of technology-driven employee monitoring policies (e.g., CCTV, internet usage, genetic testing).

The chapter begins with an overview of key concepts related to drug testing in the workplace. A definition of drug testing opens the drug testing primer. This is followed by a technical discussion of the mechanics of drug testing including the biological specimens most commonly used and methods of laboratory analysis. The introductory material also covers the six personnel actions that may require a drug test. Alternatives to drug testing are then discussed. The political and legal landscape that facilitated the implementation of public sector drug testing is revealed. The final section specifies the purposes of this investigation.

A Drug Testing Primer

Before proceeding further, it is important to introduce important concepts and terminology associated with drug testing. These terms will appear frequently throughout the remaining discussion. To begin, a definition of workplace drug testing is offered. This is followed by a description of the mechanics of testing including the biological specimens used in testing, methods for detecting drugs, and types of drugs included in drug screens. The employment situations that trigger a test are then introduced. The section concludes with a brief overview of alternatives to employee drug testing.

Defining the Concept

Workplace drug testing and employee drug testing are terms used interchangeably to describe the same practice. Drug testing is “(t)he analysis of urine specimens and other body fluids to determine if particular individuals have used various drugs” (Normand, Lempert, and O’Brien 1994, 178). Workplace drug testing takes place within an employment context. That is, the testing is conducted by an organization for a predetermined set of personnel actions. For example, job applicants may be required to pass a drug screen before receiving a final job offer. Drug tests

involving individuals outside a job situation, e.g., Olympic athletes, school children, and prisoners, are not the subject of inquiry here. For the purposes of this paper, drug testing includes all biological specimens that are permitted under federal testing guidelines including urine (the most popular), hair, blood, saliva, and sweat. In addition, the focus on this investigation is on the detection of illegal substances such as marijuana and cocaine. Testing policies that involve the abuse of alcohol, a legal drug, are not considered since they involve a substantially different set of detection procedures and legal questions.

Drug Testing Specimens and Methods

Several biological specimens may be used in the drug screening process including urine, blood, hair, sweat and oral fluid. The most popular substance for testing is urine (Normand, Lempert, and O'Brien 1994, 183).¹ It is preferred over blood samples because it requires a less invasive procedure, contains the metabolite (drug byproducts that remain in the body after the effects of the drug have worn off), and is available in greater quantities (Kapur 1994). Proponents of hair testing claim that it is a less invasive way to collect a sample and more accurate than urinalysis. The drug detection period is substantially longer for hair (90 days) compared to urine (up to 30 days in some cases). Critics contend that hair tests are more likely to detect higher concentrations of drugs in persons with coarse dark hair including African-Americans, Asians, and Hispanics (Koch 1998). Besides the potential for racial/ethnic bias, hair tests may not be able to distinguish between environmental drug exposure (e.g., drug residue picked up at a rock concert) and drug absorption initiated by ingestion or intravenous injection. The use of certain detergents and hair treatments may also confound test results (Kapur 1994). The use of sweat patches and saliva are mentioned in the literature, but they do not seem to be used frequently. All tests, no matter the biological specimen used, are limited in that they cannot indicate the level of impairment at the time the test was

administered. They can only show the existence of the drug or its metabolite in the body without giving a clear indication of when or how it got there. In addition, analytical results cannot tell the dosage of the drug taken and whether the person is a chronic abuser or a first-time user (Normand, Lempert, and O'Brien 1994, 193).

From the outset of the drug testing controversy, critics voiced serious concerns about the accuracy of existing testing methods and the quality of testing laboratories (Hansen, Caudill, and Boone 1985; Lundberg 1986). Using the best science available, the federal government responded with draft guidelines meant to standardize specimen collection, chain of custody, and laboratory procedures. Now in its fourth iteration, the *Mandatory Guidelines for Federal Workplace Drug Testing Programs* (U.S. Department of Health and Human Services 2001) detail the testing methods used in the federal government's drug testing program. The Guidelines require laboratories to conduct two basic types of drug tests – initial tests and confirmatory tests. The initial test is meant to separate negative specimens from those that need further testing. Typically, an immunoassay test such as the Enzyme Multiplied Immunoassay Technique (EMIT), is used as the initial detection method. Immunoassays have several advantages. They are relatively inexpensive, can be done quickly, and do not require specialized laboratory equipment. However, they can generate a fair number of false-positive readings (Kapur 1994). To mitigate the harm that may result from a single false reading, the Guidelines require a confirmatory test when an initial screen is positive. The follow-up test must use a different and more sophisticated technology compared to the first. Experts describe Gas Chromatography/Mass Spectrometry (GC/MS) in laudatory terms. GC/MS is the “most conclusive method” of confirming the presence of drugs (Hawks and Chang 1986, 35). A panel of scientists called it the “gold standard” of confirmatory drug tests (Hoyt et al. 1987, 509). GC/MS involves a two-step process that can accurately detect small amounts of specific drugs/metabolites.

Policies that require positive initial screens to be confirmed by more sensitive tests (e.g., an EMIT-GC/MS combination) are judged to be the most legally defensible approach to employee drug testing (Hoyt et al. 1987).

The Guidelines specify the types of drugs to be included in a drug screen and the cutoff concentrations for each drug. At a minimum, all specimens are screened for five types of substances (commonly referred to as a “five panel screen”). The drugs include marijuana, cocaine, opiates, amphetamines, and phencyclidine (PCP or angel dust). Agencies may expand the panel to include other controlled substances. For example, the military recently improved its ability to test for club drugs such as Ecstasy, a drug favored by younger personnel (Gilmore 2002). The cutoff concentrations for each drug are also included in the Guidelines. The cutoff concentrations are much lower for confirmatory tests. The initial test cutoff concentration for marijuana metabolites in a urine specimen is 50 ng/mL compared to 15 ng/mL in a confirmatory test.

Employment Circumstances

Six agency personnel actions may trigger a drug test. One legal scholar ranked these tests from least intrusive to most intrusive using the judicial tests developed in important drug testing cases (Dorancy-Williams 1998).² The level of “intrusiveness is based on several factors from the manner in which the employee is chosen to the amount of notice given to the employee” (468-469). In short, intrusion is a measure of government intervention into the privacy rights of workers. What follows is a brief description of each drug testing situation presented in ascending order of intrusiveness.

- *Preemployment.* At the point of hiring, applicants may be required to pass a drug test before receiving a final job offer. Courts have generally placed few restrictions on an employer’s

ability to conduct preemployment drug screens. The courts have permitted preemployment testing on the grounds that: a) applicants have a diminished expectation of privacy compared to existing workers; b) applicants voluntarily submit to the test; and, c) the applicant has reasonable notice of the drug test (Dorancy-Williams 1998). A variant of this type of testing may occur during an employee's probationary period where a successful drug test is required to achieve permanent job status.

- *Post-accident.* Drug tests may be administered after an accident, or in some law enforcement agencies, after an officer discharges a weapon. These applications also fall on the less intrusive side of the continuum. Persons who are subject to post-accident tests are typically employed in jobs that involve the protection of public safety (e.g., truck drivers, police officers). The U.S. Supreme Court ruled in *Skinner v. Railway Labor Executives Association*, 489 U.S. 602, that post-accident tests were reasonable because determining the cause of accidents and deterring future ones are legitimate governmental interests. The invasion of worker privacy created by a mandatory drug test is acceptable when considering the risk to public safety.
- *Universal/Routine.* Universal or routine tests are usually offered during an annual physical examination. Workers have a diminished expectation of privacy since they have advance notice of the test and are already engaged in an intrusive procedure (i.e., a medical exam) (Dorancy-Williams 1998). Other types of personnel actions that provide significant advance notice and apply to all workers in predesignated positions (e.g., workers accepting a transfer or promotion to a new job) may also require a drug test.

- *Return-to-duty.* This type of test is given to an employee before he/she is reinstated to a testing designated position (U.S. Department of Health and Human Services 2001). Those who have tested positive in the past or completed a drug treatment program may be required to submit to a drug test before returning to work. These tests are rarely challenged in court since the worker has a lower expectation of privacy due to the evidence of prior drug use (Dorancy-Williams 1998).
- *Reasonable suspicion.* A worker may present observable behaviors that lead a supervisor to suspect that he/she is drug impaired. Erratic behavior, observed drug use, or a reliable tip are usually enough to meet the court's "reasonable suspicion" standard for testing. While the term is difficult to define, one legal analyst notes, "It is clearly less than the probable cause needed to arrest, but it is still more than a mere intuition" (Wefing 2000, 822). Thus, a manager needs some reliable evidence that an individual is impaired while at work in order to conduct a legally defensible test.
- *Random.* Random testing of current employees is perhaps the most controversial of all testing applications. The process begins with a random selection of workers in predesignated positions (usually done by a computer). It is the most intrusive test because there is little advance warning of the test and workers are selected without particularized suspicion of drug use. For these reasons, several states prohibit the use of random drug testing (Wefing 2000). Federal courts have ruled that random testing may be used only for workers in "safety sensitive" jobs where an employee's drug impairment could cause serious harm to others (Dorancy-Williams 1998).

Alternatives to Drug Testing

A number of human resource practitioners and scholars, concerned with the privacy, legal, and morale issues associated with drug testing, have proposed alternative ways of dealing with employee drug problems. Four alternatives have been suggested in the literature including drug education and awareness programs, supervisor training to detect impairment, Employee Assistance Programs (EAP), and performance/fitness-for-duty (FFD) testing. As a first alternative, organizations are encouraged to develop a drug education program for all employees (Vodanovich and Reyna 1988; Jardine-Tweedie and Wright 1998). The training would include information about the organization's substance abuse policy, the types of drugs that individuals are likely to abuse, the causes and symptoms of drug abuse, and the assistance available to employees. Another substitute for drug testing is training supervisors on how to recognize drug impairment in employees (Abbasi, Hollman, and Murrey 1988; Vodanovich and Reyna 1988; Jardine-Tweedie and Wright 1998). Supervisors would learn the behaviors associated with drug abuse (e.g., missed deadlines, disorientation, mood swings, and other indicators of impaired performance) and ways to encourage employees to seek treatment. Rothman (1988) notes that this type of training should be required of all employees, not just supervisors.

A third, and perhaps most widely used alternative to workplace drug testing, is the Employee Assistance Program (EAP) (Rosen 1987; Vodanovich and Reyna 1988; Wrich 1988; Rothman 1988; Jardine-Tweedie and Wright 1998). EAPs provide substance abuse counseling and treatment services to employees. Workers may gain access to EAP services on their own or through a referral from a supervisor. Even though the organization pays for EAP services, a strict level of patient-provider confidentiality is maintained. This is meant to encourage self-referrals with the assurance that no punitive measures (e.g., termination, suspension) will be taken against the employee. Studies indicate

that EAPs help improve worker productivity and reduce absenteeism (Wrich 1988). In the federal government, the EAP is used in concert with drug testing. Individuals who test positive are referred to treatment services offered through the EAP. Research indicates that workers who have access to EAP in the workplace are less likely to report recent drug use (U.S. Department of Health and Human Services 1999b). The final alternative to drug testing involves the use of new, noninvasive technologies to measure worker impairment (Vodanovich and Reyna 1988; Comer 1993; Comer 1994). These tests, sometimes referred to as performance tests or fitness-for-duty (FFD) tests, are not meant to detect drug use, but to identify performance impairment that may be caused by drug use (Jardine-Tweedie and Wright 1998). Computer-based tests that measure psychomotor skills, reaction time, visual acuity, and decision processes are most common (e.g., flight simulator). Proponents hail these tests as a less intrusive and costly alternative to drug tests while providing managers with immediate test results (Comer 1994). The latest research has tempered the enthusiasm for such tests. Comer (2000) found that employees questioned the ability of FFD tests to measure impairment for work and to improve workplace safety. The test-takers also seemed to find the test more invasive than expected and viewed the testing experience somewhat negatively. Performance testing is rarely used in practice. In a survey of drug testing practices in large U.S. cities, none of the responding cities reported the use of performance tests (Fine, Reeves, and Harney 1996).

The Evolution of Public Sector Drug Testing – A Political and Legal History

To fully understand the current state of drug testing today, it is important to revisit the larger political and legal environment in which drug testing emerged. A number of writers have put forth detailed historical accounts of drug policy and testing in the United States (Ackerman 1991; Walsh and Trumble 1991; Koch 1998). The goal of this historical overview is to uncover the policy

justifications that facilitated the expansion of drug testing in government workplaces. These rationalizations will be used later to construct a public sector theory of drug testing (Chapter 3).

There is no better place to learn about the rationales for drug testing than the written records left by the political institutions and courts that wrestled with the issue. The legal outputs which resulted from the debate, i.e., official actions of the executive, court rulings, and legislation, are especially useful reservoirs of information. Inherent in this form of analysis is an assumption that laws reflect changes in the cultural and social needs of society (Chambliss 1964). That is, judicial renderings and legislative acts are reflections, at some level, of the public will. These policy preferences, however, may result from a politically constructed social problem. For example, Reinerman, Waldorf, and Murphy (1988, 49) link the construction of the “drug scare” problem of the 1980s to political, economic, racial, class, and cultural matters. The challenge is to disentangle the altruistic rationales from the politically driven ones.

The history of drug testing in the public sector is largely a history of drug testing in the federal government. There is surprisingly little written about the development of worker drug testing at the subnational level of government. Several exceptions do exist. Atwood (1992) described the implementation of employee drug testing in California state government. The drug testing experiences of Florida municipalities have also been chronicled (Daly 1993). Since there is a dearth of information at the state and local levels, the following discussion necessarily focuses on the evolution of employee drug testing policies in the federal workplace.

Early Applications

Job-related drug testing began in the United States military. The first mass screening program applied to personnel returning home from Vietnam. Urine screens were used to identify veterans who had recently used heroin (Ackerman 1991). The policy did not call for continuous testing, but required a single administration that was triggered by a person's leave orders. Widespread, routinized drug testing of defense department employees did not commence until the 1980s. The convergence of two historical events facilitated the military's adoption of drug testing. First, a survey of young enlisted personnel found that large numbers (20 to 47 percent depending on the service) reported use of marijuana within the last 30 days (Mulloy 1991). Second, a nighttime accident aboard an aircraft carrier resulted in fourteen deaths and forty-two wounded. Autopsies of nine crew deck members revealed traces of cannabis (Mulloy 1991). In response to the perceived drug problem within the service, the United States Navy implemented a rigorous random testing program covering all personnel. Specimens were collected at the rate of three per year for every member of the Navy and Marine Corps (Willette 1986). By mid-decade, the Navy was conducting 1.5 million drug tests annually. In 1986 alone, all four branches of the military collectively spent over \$52 million on drug testing (Mulloy 1991).

The military's aggressive adoption of drug testing was justified in several ways. First, drug use within the service was perceived as a threat to national security. Drug testing would improve the combat readiness of soldiers and sailors. Second, since military personnel were engaged in dangerous work, any form of impairment could result in harm to the individual or others. Third, random testing would serve "as a constant deterrent to drug use" (Willette 1986, 5). There seemed to be some support for the deterrence rationale. Initial studies noted sharp declines in the number of positive screens and individuals reporting drug use over the first four years of testing. Navy personnel

surveyed in 1987 indicated that the random drug testing program was a strong deterrent to drug abuse (Koch 1998).

Other federal agencies, especially those employing uniformed personnel, experimented with drug testing programs during this time (Willette 1986). The Secret Service Uniformed Division was an early adopter of drug testing. Drug screening was included as part of the annual physical examination for job applicants and probationary employees in 1984. The Drug Enforcement Administration and FBI began testing trainees in 1986. The Department of Justice authorized drug testing even though there was no evidence of drug abuse in the workforce. The Department wanted to “set an example for other government agencies and private employers” (8). Agencies responsible for regulating the transportation and power industries (Federal Aviation Administration, Federal Railroad Administration, and Nuclear Regulatory Commission) also required specific employees to submit to drug screens. Other drug testing agencies included National Aeronautics and Space Administration, Panama Canal Commission, U.S. Postal Service, Tennessee Valley Authority, and the Veterans Administration. The result of a positive screen varied from agency to agency. Some policies required treatment or counseling for those who tested positive (Federal Aviation Administration), while others led to immediate dismissal (Drug Enforcement Administration).

The rationales behind drug testing in the public sector are best understood within a broader debate over drug policy. To be sure, a political environment favorable to drug testing had been developing for some time in America. Some trace the beginnings of a “get tough” approach to drugs back to the early 1900s (Walker 2001; Ackerman 1991). At that time, the federal government and several states began to regulate the sale and use of narcotics and opium. Others saw a discernable shift in drug policy during the 1970s and 1980s. In 1971, President Nixon was the first to employ a

war analogy to characterize the nation's fight against drugs (Koch 1998). He offered the following call to arms, "Drug traffic is public enemy number one domestically in the United States today and we must wage a total offensive, worldwide, nationwide, government-wide, and, if I might say so, media-wide" (Nixon 1971).³ The "law and order" approach was more forcefully applied during President Reagan's tenure in office. Reuter (1992) identified a punitive philosophy dominating drug policy during the 1980s. At all levels of government, huge investments were made in new prison construction and drug enforcement activities. Tough mandatory penalties for drug crimes were introduced. In addition, drug testing "with an emphasis on penalty rather than treatment for those who test positive" became the norm in many workplaces (21). For him, the "Hawks" were dictating drug policy. The fortunes of workplace drug testing were now inextricably linked to President Reagan's ability to implement his hawkish drug agenda.

In his first term, President Reagan created a commission to detail the illegal operations of organized crime in America and to recommend ways to combat it (Executive Order 12435 1983). The commission's original mandate was only marginally related to drugs. There was no doubt that organized crime was heavily involved in the trafficking of drugs. So, the commission would have to dedicate some attention to the issue. In a somewhat surprising turn, the bulk of the commission's final report released in the spring of 1986 was devoted to reducing the supply and demand for drugs (President's Commission on Organized Crime 1986). The commission boldly called for drug testing in all workplaces:

"The President should direct the heads of all Federal agencies to formulate immediately clear policy statements, with implementing guidelines, including suitable drug testing programs, expressing the utter unacceptability of drug abuse by Federal employees. State and local governments and leaders in the private sector should support unequivocally a similar policy that any and all use of drugs is unacceptable. Government contracts should not be awarded to

companies that fail to implement drug programs, including suitable drug testing” (450).

Some interpreted the recommendation as a call for mandatory testing of all federal workers. On this suggestion, a Washington Post editorialist wrote, “It is a terrible, intrusive idea and should be junked” (Anonymous 1986b, A18). Others lauded the tough stance taken against drugs in the workplace (see Chapter 2 discussion of politicians who supported drug testing). Either way, the commission’s statement about drug testing was marinated in political symbolism. The President was going to lead on the drug testing issue, and all others, including subnational governments and the private sector, were strongly encouraged to join the cause.

Public opinion played an important role during this critical period in the history of drug testing. By mid-decade, citizens began to identify drug abuse as one of the most serious problems facing the country. In August 1986, concern about drugs reached its highest level in over four decades (Gallup 1987, 179-180). Drug abuse was the third most important domestic policy issue behind unemployment and the budget deficit. Two other surveys charted a similar trend. A Gallup/Phi Delta Kappa survey of attitudes toward public school found that, for the first time, an issue other than discipline was seen as the most important problem. Drugs were identified by almost 30 percent of respondents as the biggest concern, a 10-point increase in one year. Student respondents to a Gallup Youth Survey also identified drug abuse as the leading problem faced by teenagers (Gallup 1987, 180).

The Drug War Comes to the Federal Workplace

Seizing upon a popular issue in an election year, President Reagan offered a series of legislative recommendations for combating this “new epidemic” (Reagan and Reagan 1986, 2227).

The leading initiative in the President's "War on Drugs" was the creation of "a drug-free work place – at all levels of government and in the private sector" (2228). In September 1986, President Reagan fired the first salvo in the war when he signed Executive Order 12564. The order identified employee drug testing as the primary method for ensuring a drug-free workplace. This order provided the legal authority for drug testing federal workers and set the standard for workplace drug testing in other public and private sector organizations (Normand, Lempert, and O'Brien 1994, 285). It required all federal agencies to develop plans for testing employees in "sensitive" positions such as those involved in public health and safety or national security areas. It also cleared the way for testing federal employees in other positions under the following circumstances: a) if there is reasonable suspicion that an employee uses drugs, b) if an employee has been involved in an accident or unsafe practice, or c) as a follow-up to prior treatment for drug use. The order requires agencies to refer all workers who test positive to agency-sponsored employee assistance programs for assessment, counseling, and referral for treatment or rehabilitation. Employees must successfully complete a treatment regimen before returning to work. The order specifically prohibits the use of drug test information for criminal prosecution. It is important to note that the Executive Order did not adopt the more rigorous testing proposal contained in the President's Commission on Organized Crime report. The Executive Order was a compromise of sorts, requiring testing of some workers and treatment (not termination) for those who failed the drug screen.

The order provides four different justifications or anticipated results for the new drug testing policy (1986, 1183-1184). First, the policy will improve worker productivity and absenteeism rates. Second, the policy will create a national model for others to follow --"show the way towards achieving drug-free workplaces." It also protects the "special trust" placed in employees as servants of the public. In this regard, drug free federal workplaces and workers serve a symbolic function, an

aspirational standard for other public and private sector organizations and citizens. The atmosphere surrounding the release of the order was also pregnant with symbolism. In a show of support for his testing initiative, President Reagan and his senior advisors submitted urine specimens for testing (Koch 1998). Third, the threat of detection via drug testing will deter future drug use. The policy demonstrates “to drug users and potential drug users that drugs will not be tolerated in the Federal workplace.” Fourth, the policy will protect the health and safety of the general public as well as the well-being of federal workers.

The drug testing initiative was vigorously opposed by public sector employee unions and by several members of Congress. To illustrate, the day after the executive order was signed by President Reagan (September 16), the National Treasury Employees Union sued in federal court to prevent its implementation (Rovner 1986, 2192). The union argued that drug testing without reasonable suspicion is an unlawful search, a violation of the Fourth Amendment. In addition, several bills were introduced in the House of Representatives to either limit drug testing or prohibit it altogether (2192). Others rose in support of the President’s proposal. Speaking from the floor of the U.S. Senate, Paula Hawkins (R-Florida) said, “I do not think it is unreasonable to expect Federal employees in sensitive positions to be drug-free. I would take it a step further: I think all Federal employees should be subjected to drug tests” (cited in Anonymous 1987, 138).

Legal scholars wrestled with the constitutional issues raised by the President’s new testing proposal (Bookspan 1987; Bookspan 1988; Stern 1986; Kaplan and Williams 1988). Federal, state and military courts had adjudicated many drug testing claims prior to the promulgation of the executive order (see Simpson 1989). However, the order’s extension of drug testing to a greater number of workers and employment situations (random) elevated the constitutional debate to a new

level. The U.S. Constitution places limits on the types of actions that government may take vis-à-vis citizens. Several constitutional provisions apply directly to government imposed drug testing including the prohibition against unreasonable searches and seizures (Fourth Amendment), protection from self-incrimination (Fifth Amendment) and due process and equal protection of the laws (Fourteenth Amendment). The majority of urinalysis cases dealt with the privacy rights created under the Fourth Amendment (Stern 1986). Challenges to the drug testing provisions of the executive order were eventually adjudicated in the federal court system. From 1987 to 1990, federal courts at all levels (district, appeals, Supreme) decided 39 cases involving federal employee drug testing (Thompson, Riccucci, and Ban 1991, 516-517).⁴

In 1989, the U.S. Supreme Court addressed these constitutional issues when it ruled on two challenges to federal drug testing regulations. The precedent-setting cases, *Skinner v. Railway Labor Executives' Association*, 1989, 489 U.S. 602 and *National Treasury Employees Union v. Von Raab*, 1989, 489 U.S. 656, set forth the Court's legal reasoning in support of drug testing programs. These cases are briefly summarized below. Of primary importance is the Court's justification for extending the state's control over workers.

In *Skinner v. Railway Labor Executives' Association*, the Federal Railroad Administration (FRA), a federal government agency responsible for adopting safety standards for the railroad industry, promulgated rules that required the drug testing of railway employees involved in accidents resulting in fatalities or property damage. The FRA claimed that there was a long-standing problem of alcohol and drug use among railroad employees. The respondents, including a number of railway labor unions, brought suit to enjoin the regulations alleging that drug testing was an unlawful search under the Fourth Amendment.

In a 7-2 vote, the Court upheld the regulations. The Court concluded that a private railroad company, when complying with mandatory regulations from a federal agency, acts as an instrument of the state. Therefore, the collection of bodily fluids by a private railroad (or any governmental entity) constitutes a search for Fourth Amendment purposes. When the state imposes drug testing on workers, certain Fourth Amendment protections against unlawful searches are activated. The Court also addressed the reasonableness of drug testing in terms of competing individual and governmental interests. It reasoned that the “Government’s interest in regulating the conduct of railroad employees to ensure safety...may justify departures from the usual warrant and probable cause requirements” (489 U.S. 620). Thus, the Court adopted a less stringent reasonableness standard (an administrative as opposed to a criminal standard) to weigh governmental interests versus employees’ privacy concerns. It found that the intrusions on worker privacy are limited in light of the compelling state interest in preventing injuries caused by impaired railway workers. In weighing the interests of both parties, the Court looked favorably on the potential deterrent value of drug testing: “the FRA regulations supply an effective means of deterring employees engaged in safety-sensitive tasks from using controlled substances or alcohol in the first place” (489 U.S. 629).

In a strongly worded dissent, Justice Marshall criticized the majority’s “balancing” argument and reliance on deterrence as justification for government drug testing. On the balancing issue, he chided the Court for trivializing the privacy and dignity interests of employees while inflating the likely efficacy of FRA’s testing program. For him, “the benefits of suspicionless blood and urine testing are far outstripped by the costs imposed on personal liberty by such sweeping searches” (489 U.S. 650). He also lamented the Court’s acceptance of a deterrence rationale without “*any* (his emphasis) studies explaining or supporting its theory of accident deterrence” (489 U.S. 653).

In the companion case of *National Treasury Employees Union v. Von Raab*, a divided Court (5-4) upheld the Customs Service's drug testing regulations. The United States Customs Service implemented a drug-screening program of Service employees seeking transfer or promotion to positions having a direct involvement with drug interdiction or requiring the employee to carry a firearm or have access to "classified" material. The labor union representing Service employees sued claiming that drug testing violates the Fourth Amendment prohibition against unlawful government searches and seizures. It concluded that probable cause and reasonable suspicion requirements (ordinary protections afforded to criminal defendants) are not necessary when testing workers in "sensitive" positions. Instead, the Court identified the government's compelling interest in minimizing safety and national security hazards as the controlling factor. The public safety interests of the state outweigh the privacy rights of those individuals who carry guns or are involved in drug interdiction activities. Justice Kennedy, writing for the Court, offered both symbolic and deterrence justifications for the Court's opinion. He noted that drug use by employees "casts substantial doubt on their ability to discharge their duties honestly and vigorously, undermining public confidence in the integrity of the Service" (489 U.S. 664). For the Court, it is important for the Service to have the confidence of the American people. In this respect, the Service is held up as a kind of model or symbol of integrity. The Court also ruled that the "Service's policy of deterring drug users from seeking promotions cannot be deemed unreasonable" (489 U.S. 674).

The core of Justice Scalia's dissent in *Von Raab* mirrors Justice Marshall's earlier protestations in *Skinner*. Scalia disagrees with the majority because, in his view, the government has not provided "even a single instance (his emphasis) in which any of the speculated horrors actually occurred: an instance, that is, in which the cause of bribetaking, or of poor aim, or of unsympathetic law enforcement, or of compromise of classified information, was drug use" (489 U.S. 683). Absent

these legitimate public safety considerations, Scalia concludes that the Service's drug testing policy is nothing more than "symbolic opposition to drug use" (681).

As a result of the *Skinner* and *Von Raab* cases, a consensus appears to be developing among the federal courts about what makes a governmentally mandated drug testing program reasonable under the Fourth Amendment (Normand, Lempert, and O'Brien 1994, 292-294).⁵ First, drug-testing programs that target a narrow set of employees whose drug use poses an actual or symbolic threat to fellow workers, the public, or the agency's mission are generally constitutional. Second, the random testing of all employees within a specific job category (that is, those in "safety sensitive" roles) is likely to pass constitutional muster if the testing is justified as a deterrent to future employee drug use.

Drug Testing Today

The drug war's drumbeat echoed long past the *Skinner* and *Von Raab* decisions. These cases provided momentum for the further expansion of drug testing in the workplace and elsewhere. Over the last decade, a succession of presidents and congresses has offered numerous testing proposals. President George H. Bush extended drug testing to all White House personnel during his term in office (Koch 1998).⁶ During the Clinton presidency, the amount of legislative activity dealing with drugs reached a crescendo. The Clinton White House proposed mandatory testing of all teenagers applying for a driver's license. Lawmakers also got into the act introducing over 60 drug testing measures over a two-year period in the mid-1990s (Koch 1998). Congress denied student loans to individuals convicted of drug related crimes in 1998. Even today, drug testing is still an actionable issue in Congress. A proposal in the first session of the 106th Congress would have mandated drug tests for all members and employees of the House of Representatives (H.R. 331). This legislation was

introduced even though there was no evidence of drug abuse in Congress. The Federal Employment Applicant Drug Testing Act (H.R. 17), a bill requiring the testing of all federal job applicants, was reintroduced in the first session of the 107th Congress. It seems that symbolism has become a favorite rationale for most testing proposals today.

The U.S. Supreme Court continues to refine its jurisprudence in this area. The most recent drug testing cases taken up by the Court involve parties other than workers and managers. Even though the facts are different in these cases, the Court's legal reasoning does apply to aspects of workplace drug testing. As such, it is important to briefly highlight the most relevant rulings here. Drug testing proponents experienced a minor setback in *Chandler v. Miller* 520 U.S. 305 (1997). The Court rejected a Georgia law requiring elected officials (including the governor and state legislators) to certify that they had tested negative for drugs. The Court found no "special need" akin to public safety or drug interdiction that would allow the state to override the individual's protected privacy interests. The Court was not swayed by the state's argument that drug testing would improve the public's trust in elected officials. Nor could the state convince the Court that deterring drug users from gaining political office was a legitimate reason to sustain the law.

Student testing has been the subject of two other Supreme Court rulings. In the latest drug test case, a closely divided U.S. Supreme Court allowed the use of random drug testing for middle and high school students participating in *all* competitive extracurricular activities, see *Board of Education of Independent School District N. 92 of Pottawatomie County et al. v. Earls et al.*, 122 S. Ct. 2559 (2002). Deterring schoolchildren from using drugs was an acceptable reason for random testing as was protecting them from personal injury. Prior to this ruling, only student athletes fell

within the scope of testing (*Veronia School District v. Acton*, 515 U.S. 646 1995). Excepting *Chandler*, the Court has shown a proclivity towards testing under a diversity of justifications.

In both tone and content, the current literature stands in stark contrast to the drug testing commentary of two decades ago. Contemporary writers no longer challenge the acceptability of drug testing. Instead they raise practical questions about the potential conflict between drug testing policies and other federal/state workplace laws. West and Ackerman (1993) note that the Civil Rights Act of 1991 limits workplace drug testing. Drug testing may be challenged under the Act if it is used to intentionally discriminate against workers on the basis of race, sex, religion, or disability. Grievants may be eligible for increased damages and jury trials if discrimination is shown. The Americans With Disabilities Act (ADA) presents other concerns for organizations with drug testing programs (Mazzei and Sena 1998; Bahls 1998). An organization can fire or refuse to hire an individual with a history of drug abuse if it can be shown that the person poses a “direct threat” to others (Bahls 1998, 115-116). The ADA also allows the testing of persons who are rehabilitated to ensure that they remain drug free. It is important to note that current illegal drug users are not protected by ADA provisions. However, persons who have undergone drug treatment and those wrongly perceived to be drug users may have recourse under the ADA. Under some circumstances, the ADA may consider a person who has successfully completed a drug rehabilitation program and remains clean to have a disability. Persons who are falsely accused of drug use may also sue for unlawful discrimination under the ADA. State statutes and case law also afford rights to workers that may limit drug testing. Laws relating to workers’ compensation, state family and medical leave, and disability may come into play as well as protections found in common law (privacy, negligence, and defamation) (see Denenberg and Denenberg 1996, 16-19).

In conclusion, the review of the political and legal context of employee drug testing reveals a variety of justifications offered in support of drug testing policies including worker productivity and safety, deterrence, rehabilitation, and symbolism. When combined with other rationales put forth by academicians (e.g., technology and conflict), a very complex understanding of drug testing emerges. After critically evaluating the empirical basis for each justification, these rationales will provide the foundation for a new understanding of public sector drug testing (see Chapter 3).

Purpose of Research

With the historical and political landscape now framed and basic terminology introduced, it is possible to specify the purposes of this investigation. The purpose of this research is a) to construct a new theoretical framework that spans the divisions in the current drug testing literature, b) to test aspects of the theory on a national sample of local police departments, and c) to explore the policy, administrative, and research implications. This macro-level approach synthesizes several major streams of thinking about employee drug testing into a new theory of public sector drug testing. The competing views of drug testing supporters and opponents are also incorporated into the theory-building process. The proposed construct reflects the true complexity of drug testing in its operation as a mechanism of social control. It is argued later that this complexity may, in part, be responsible for the general appeal of employee drug testing today. The framework presented here relies heavily on social control theory for its organization (Black 1976; Black 1984). A more detailed discussion of the theory supporting this analysis is provided in the Chapter 3.

The empirical part of the research builds on prior studies that have looked at the factors that lead employers to institute drug testing programs (Anderson et al. 1995; Borg and Arnold 1997). In a review of private businesses in Mobile, Alabama, Anderson et al. discovered that drug testing is more

likely in companies that provide health insurance benefits, have high perceptions of drug problems, and employ many workers (1995, 68). Borg and Arnold's study of drug testing in anesthesiology departments in the United States found little support for relational distance variables and very modest effects for social status factors. Department size was not related to the likelihood of drug testing. However, the odds of drug testing were significantly greater in departments that reported past cases of drug abuse and in departments with fewer males in proportion to females. The higher respectability of departments with no prior drug abuse cases and high numbers of women reduced the amount of formal monitoring through drug testing (Borg and Arnold 1997).

These prior studies have several limitations. First, they only address drug testing in the private sector. There is no discussion of drug testing in governmental organizations. Second, these studies only distinguish between organizations that use and do not use drug testing. There is no attempt to distinguish between different types of drug testing programs. In reality, some organizations may have very limited testing protocols, e.g., "for cause" screening of job applicants, while others may subject the entire workforce to random screens. Prior research does not take the continuum of testing into account. Third, existing research does not recognize the importance of legal decisions in establishing the constitutional ground rules for workplace drug testing. Fourth, there is little empirical evidence to show how unions, an important actor in public sector labor relations, influence agency drug testing policies. These research gaps are specifically addressed in this study.

Finally, the administrative, policy, and research implications are explored. The theoretical structure developed in this paper may be useful for studying other personnel policies that emerge as the result of new technologies. The empirical findings also raise important questions about the equity

of drug testing programs. As a result, the processes by which agency drug testing policies are formulated and carried out may need to be reconsidered.

The remainder of the paper is divided into six chapters. Chapter 2 analyzes the conflict over drug testing from the perspectives of the key participants. Chapter 3 lays the theoretical foundation for the investigation. The primary framework used in the paper, social control theory, is defined and then a new, updated model is proposed. Alternative theoretical perspectives are also considered. The literature which examines drug use and testing within law enforcement agencies is presented in Chapter 4. Chapter 5 explains the methodology used in the paper. The formal propositions which guide the empirical investigation are specified and detailed explanations of all variables are included. The results of the data analysis are presented in Chapter 5. The final chapter summarizes the research findings and explores the implications for drug testing in the public sector.

CHAPTER 2: COMPETING VIEWS OF WORKPLACE DRUG TESTING

Many voices have contributed to the drug testing debate. The battle lines were formed early, with camps of supporters and critics divided along philosophical, legal, moral, and political lines. Of particular interest is the movement of parties in and out of the debate. For some, positions taken early tended to harden over time. Other players arrived early and left the fray when their parochial concerns were satisfied. To understand the political context shaping the use of employee drug testing, it is important to revisit the roles and perspectives of nine key combatants – four proponents and five opponents – in the fight over employee drug testing.

The Supporters of Drug Testing

Citizens

As the drug testing debate intensified in the mid-1980s, survey writers soon began to query citizens about their stand on the issue. The earliest citizen surveys seemed to indicate extremely strong support for workplace drug testing. By way of example, a survey of Illinois residents found that 90 percent of respondents favored drug testing in some form (Nesbit 1989). Citizens were especially supportive of drug screens for persons in occupations that posed some risk to public safety. In a poll of Cincinnati residents, large majorities supported mandatory drug *and* alcohol testing of people working in transportation jobs (almost 85 percent) and workers in “sensitive” positions such as police officers, fire fighters, and teachers (76 percent) (Latessa, Travis, and Cullen 1988, 387). National surveys at the time recorded similar results. A 1986 USA Today Poll reported that 80 percent of citizens did not disapprove of drug testing (cited in Hoffman 1987, 161). In a New York Times/CBS News Poll, approximately three-in-four full time workers said that they would be willing

to take a drug test (Clymer 1986, 1A). An even higher percentage of respondents (83 percent) favored testing for “those responsible for the safety of others, such as surgeons, airline pilots and police officers.” High numbers of survey respondents in a Newsweek/Gallup poll supported drug testing for most workers (Anonymous 1986b). Instead of firing the individual (5 percent) or reporting him/her to police (5 percent), a majority (60 percent) thought the organization should refer the individual to drug treatment. Pollsters did detect cracks in the veneer of unanimity, however. Citizen approval for drug testing waned when the wording and context for testing was changed in survey questions. For example, when asked whether employers should have the right to test *all* employees regardless of occupation, about half responded that they disagreed (Latessa, Travis, and Cullen 1988). When issues of privacy (e.g., urine sample would be submitted under the observation of a testing official) and test accuracy were introduced into survey questions, support for the tests fell significantly (Nesbit 1989). In sum, these polls indicate that public opinion was generally supportive of workplace drug testing, especially the testing of those in fields where drug impairment might have serious consequences for public safety. Approval ratings fell when respondents were asked to consider issues of privacy and test accuracy.

Has public opinion about workplace drug testing changed from the time these first polls were published? In a comprehensive review of national surveys, Fendrich and Kim (2002) identified several important trends in citizen attitudes toward workplace drug testing. First, over an 11-year period beginning in 1985, public approval for workplace drug testing increased (87). There was a strong, positive correlation ($r=.69, p<.001$) between citizen approval ratings and interview year. Second, citizen support for testing workers in *all* occupational classes increased over time. By 1995, the public was much more willing to accept mandatory drug testing for workers whose positions did not impact on public safety including office and factory workers. For safety sensitive employees,

public sentiment for testing jumped from an already high level of 81 percent in 1986 to 95 percent in 1995 (89). Third, it appears that people may be more willing to work for an employer who requires drug tests. Taken together, these findings show an American public that has grown more accepting of drug testing in the workplace over time.

Managers

There is relatively little research that explores managerial attitudes toward employee drug testing. A single study examined the attitudes of supervisory and nonsupervisory employees at a state university in the southwest United States (Labig 1992). University managers and subordinates held similar views on the acceptability of most testing strategies. In contrast to other studies, however, supervisors did not express a preference for probable cause testing over random testing. Of course, these findings cannot be generalized to other contexts due to the extremely narrow sample used. Other studies surveyed private and public sector personnel managers on the issue (Gomez-Mejia and Balkin 1987; Masters, Ferris and Ratcliff 1988; Klingner, O'Neill, and Sabet 1989; Comer and Buda 1996). Two important findings cut across the studies. First, personnel managers view drug abuse as a serious problem within their organizations, but not perhaps the most serious issue. For example, Klingner, O'Neill, and Sabet (1989) reported that only 32 percent of agency personnel directors consider alcohol *and* drug abuse among employees to be a serious matter. Alcoholism and stress were more important problems among their workers (Masters, Ferris and Ratcliff 1988). Second, human resource managers look less favorably on random drug testing policies than probable cause testing. Only 30 percent of respondents agreed that employees should be subjected to mandatory random drug tests (Masters, Ferris, and Ratcliff 1988). Personnel directors also believe that random testing is not very effective (Gomez-Mejia and Balkin 1987). One final study found large variation in

how managers handle disciplinary decisions for employees testing positive (Klaas and Dell’Omo 1991).

Another way to gauge managers’ views on drug testing is to analyze their public statements. Numerous examples exist, but several accurately represent the general views held by top managers in the occupations most affected by drug testing. The first is a policing example. By the mid-1980s, the International Association of Chiefs of Police (IACP) had put forth a model policy that recommended drug testing during a routine physical examination, assignment to a specialized unit (e.g., drug investigations), and when a manager suspected drug use (Gates and Kleinknecht 1987). There was already agreement among police executives that some amount of drug testing was necessary. Others, however, thought it necessary to institute more comprehensive testing regimens. For example, the high-profile chief of the Los Angeles Police Department, Daryl Gates, forcefully urged departments to require random tests for officers in all ranks. For him, random testing would “set an example for the nation by demonstrating that we are responsible professionals, cognizant of our obligation to assure the public that they can depend on those within whose hands and judgments they place their lives” (Gates and Kleinknecht 1987, 16). Ira Lipman, chairman of the board and president of Guardsmark, Inc., a private security firm, offered a similar perspective in a *USA Today* commentary (1995). He favored a program of mandatory, universal, and random testing of all employees (including himself). He described in some detail the benefits to be realized from a comprehensive drug testing program – deterring drug users from even applying for a job in your company and identifying individuals who may need drug treatment. Nevertheless, not all managers are hooked on drug testing. In his weekly syndicated column, management-guru and business owner Tom Peters (1994, 4) offered a different perspective on the practice:

“No, I’m not pissing in a bottle. And nobody who works for me is going to be forced to do so either. And if there were a law that required me to ask them to do it, I’d close my place down before I’d comply. If you want an environment of trust, care, compassion—which is the only kind of environment that will breed trust, care and compassion for customers—then stay the hell out of people’s personal space!”

While there is an active dissent within the ranks of management, it is certainly a minority view.

Most support a somewhat limited testing program that includes preemployment and “for cause” tests.

The attitudes of managers toward drug testing are not substantially different than the views recorded in public opinion polls.

Job Seekers and Workers

At first glance, it would appear incongruous to place job applicants and workers on the supportive side of the drug testing debate. After all, they are the ones who, in the near future, may be compelled to submit urine or hair samples for testing. However, a sizeable literature shows that future job seekers (Mastrangelo 1997; Rynes and Connerly 1993; Bereman, Lengnick-Hall, and Jones 1994), non-supervisory workers (Hanson 1990; Bennett, Blum, and Roman 1994; Moore, Grunberg, and Greenberg 1998) and union members (LeRoy 1990; LeRoy 1991a; LeRoy 1991b) may view certain types of employee drug testing policies in a favorable light. Preliminary research also shows that the manner in which employees are notified of a drug test (no notice versus advanced notice) and organizational responses to a positive screen (treatment referral versus discharge) influence employee attitudes (Stone and Kotch 1989). A closer look at the research provides some insight into why workers are more likely to have a positive attitude toward drug testing and the organizations that employ it.

There may be a trend toward increasing acceptance of drug testing by job seekers. One of the earliest experimental investigations found that job seekers (almost always a convenience sample of undergraduate students) preferred companies that did *not* have an employee drug testing program compared to those that maintained one (Crant and Bateman 1990). In another study, undergraduate students viewed drug testing positively under certain circumstances, e.g., testing airline pilots and others in potentially dangerous professions (Murphy, Thornton, and Reynolds 1990, 627). However, equal numbers of test subjects strongly supported and strongly rejected most drug testing practices. Rynes and Connerley (1993) found that college students held a neutral view toward drug testing as a job selection procedure. More presciently, a small group of pretest respondents expressed very high positive reactions to drug testing because they believed that the firms employing the selection procedure had a high-efficiency orientation (275). There were signs that drug testing was improving in its standing among potential employees. A more recent experiment found that when presented with the option of applying to two companies – one with a random drug testing policy and the other with no employee testing – college students indicated a greater likelihood to apply to the firm that required the screens (Mastrangelo 1997). The results were in direct contrast to the negative attitudes expressed in the earlier studies. The researcher postulated that the new generation of students may be more accepting of drug testing because many more companies currently have such policies (336). An organization which tests individuals, all things being equal, may now have the upper hand in recruiting new employees.

A few studies have surveyed existing workers for their views on drug testing. Among a sample of blue collar workers, large majorities (over 78 percent) endorsed preemployment and “for cause” testing while 50 percent expressed support for random testing (Moore, Grunberg, and Greenberg 1998). Interestingly, respondents who felt that they had a role in making job decisions and

possessed greater job autonomy indicated more favorable attitudes toward drug testing. Including workers during the development and implementation of substance abuse policies which include drug testing may facilitate its acceptance by workers (Smith 1988). Drug testing may be improving its standing with working adults as it has with job applicants. When comparing the results from a statewide survey of employed Georgia residents to earlier studies, researchers concluded, “there is a trend toward greater approval of drug testing of applicants and of current employees” (Bennett, Blum and Roman 1994, 126). The most current investigations are trying to find how employee attitudes toward testing policies affect worker behavior. Initial evidence indicates that positive views about an employer’s drug testing policy may be negatively associated with an employee’s intention to leave (Mastrangelo and Popovich 2000).

Even union members express some support for drug testing. At the height of the testing controversy, Michael LeRoy (1990; 1991a; 1991b) surveyed both private and public sector union members to gauge their attitudes toward drug testing. Of particular interest is his one study (1990) that separately reports the views of public and private workers. The 410 public sector survey respondents were represented by large unions including the National Association of Letter Carriers, American Federation of State, County and Municipal Employees, Amalgamated Transit Union, National Education Association, and International Association of Fire Fighters. Most unionized public employees (84.3 percent) support workplace drug testing if the individual’s privacy is protected. The respondents expressed a strong affinity for probable cause testing matched by an equally strong distaste for random testing. In sum, union members are supportive of drug testing programs that ensure the privacy of the individual and are limited to situations where there is probable cause to believe that an individual is drug impaired. Union member attitudes toward drug testing mirror those found in the general public opinion surveys reported earlier.

Politicians

The expansion of drug testing in the federal government would not have occurred without strong political leadership. A formidable political presence was needed to overcome a politically well-heeled opposition which included public sector unions and privacy rights advocates. President Reagan was the most visible and powerful political force behind the testing initiative. It was by his pen – appointing a study commission to look into the drug matters and signing an Executive Order to implement the commission’s testing recommendations – that drug testing became a fact of life for many federal workers. Obviously, many other politicians, at all levels of government, played important roles in the unfolding debate. Representative E. Clay Shaw (R-Florida) was a particularly important ally for the President in the House. He testified regularly on behalf of the President’s plan to test workers in safety sensitive positions and introduced several bills to institute the practice (Anonymous 1987). He went as far as to test his entire Congressional staff (Shaw and Fleming 1987). It is also important to note the influence of politicians at the subnational level. Around the time President Reagan signed his Executive Order, Republican Governor George Deukmejian of California issued his own directive to begin the testing of state workers serving in “sensitive” positions (Devlin, Carroll, and Chi 1987). Also during this period, Attorney Generals in several other states formulated opinions which cleared the way for public employee testing.

Several Democratic legislators offered a vociferous dissent. In her role as Chairwoman of the House Subcommittee on Civil Service, Representative Patricia Schroeder (D-Colorado) initiated a study of drug testing in the federal government in an attempt to wrest control of the issue from the White House. The Subcommittee study, issued several months prior to the signing of the Executive Order, was largely critical of drug testing (Schroeder and Nelson 1987). Representative Schroeder noted that most Democratic members of Congress were against drug testing while the Republicans

were “bitterly divided” on the issue (Schroeder and Nelson 1987, 686). The partisan lines may not have been so clearly drawn, however. During the 99th Session, a Democratically-controlled House approved an amendment to the intelligence authorization bill which required drug testing of workers in the Central Intelligence Agency, FBI, Drug Enforcement Administration, Defense Intelligence Agency, and National Security Agency (Anonymous 1987). Other house members, including New York Democrats Charles E. Schumer and Gary L. Ackerman, submitted bills in the session following the issuance of the President’s Executive Order to restrict the use of federal worker drug testing. These measures went nowhere and the President’s testing agenda was initiated.

Of course, the nexus between politics and public opinion cannot be discounted. Politicians early on could count on favorable opinion polls to justify their policy stance. The New York Times/CBS News Poll cited earlier found that the drug issue seemed to favor Republicans over Democrats (Clymer 1986). Survey respondents also thought that Republicans were better at handling the drug problem than Democrats. If we were going to war, we were going to wage it with Republican leadership. The President had the public support necessary to take action.

The Critics of Drug Testing

Medical Researchers

Members of the medical profession raised some of the earliest concerns about drug testing. Articles and editorials relating to urine drug screening routinely appeared in prestigious medical and scientific journals including *The New England Journal of Medicine*, *The Journal of the American Medical Association* and *Science* (for examples of the running debate see Walsh 1988 and Marcell 1988). The deliberations were often contentious. George D. Lundberg’s seminal critique helped

create the tone for the unfolding debate: “Big Brother devises new ways of watching you as 1984 draws nearer. An era of chemical McCarthyism is at hand and guilty until proven innocent is the new slogan” (1972, 723).

While Lundberg and others considered the privacy, equity, and legal issues surrounding drug testing (see Rosenstock and Cullen 1987; Curran 1987), the primary matter of interest for medical researchers had to do with the reliability of drug test results. Concern over the suspect performance of drug testing laboratories led the Centers for Disease Control (CDC) to conduct a blind study of thirteen drug testing facilities between 1972 and 1981 (Hansen, Caudill, and Boone 1985). Researchers found extremely high false-positive and false-negative error rates in samples submitted to the laboratories (in some cases the error rates approached 100 percent).⁷ This poor performance led Lundberg to conclude fourteen years after his earlier critique, “While the theory of drug testing has improved greatly, unfortunately, the practice has not improved nearly as much” (1986, 3004). In response to these and other negative reports, a serious effort was made to improve and standardize testing protocols and technologies. The National Institute of Drug Abuse (NIDA) in 1986 began to develop and field test accreditation guidelines for urine drug testing laboratories (Davis, Hawks, and Blanke 1988). Under the new regulations, laboratories had to meet more rigorous specimen handling and testing procedures. Once the new mandatory guidelines were put into place, the accuracy rate of drug testing laboratories improved considerably. In one of the first blind studies that evaluated laboratory behavior under the strict NIDA regulations, no false-positive and a small percentage of false-negative results were returned (Frings, Battaglia, and White 1989). While a source of opposition to drug testing at the start of the controversy, the medical community’s resistance diminished considerably with improvements brought on by the new standards.

Civil Libertarians

Another group of critics view drug testing as an unconstitutional infringement of personal privacy. While perhaps not the first to express their displeasure over drug testing, civil libertarians have become one of the most vocal opponents of the practice. Ira Glasser, executive director of the American Civil Liberties Union (ACLU), mapped out the organization's early objections to indiscriminate drug testing in an article written at the time the federal government was considering the expansion of testing beyond the military (1987). Suspicionless drug testing, he argued, was a bad idea because it was unfair to require millions of workers who were not even suspected of using drugs to submit to a "humiliating and intrusive" drug test (78). In short, it is an unreasonable search under the U.S. Constitution because there is no probable cause to believe that all individuals are guilty of drug use. Drug tests also provide employers with information that may be used against the person who was compelled to take the test. For example, drug tests may reveal that a worker is being treated for a heart condition or depression leading an organization not to hire or promote the individual. While the poor reliability of such tests was an issue of concern for the ACLU (Glasser 1987, 79), it was a secondary matter in comparison to the invasion of worker privacy. As such, civil libertarian opposition did not melt away (as was the case for medical researchers discussed earlier) as the reliability of test results greatly improved in the late 1980s. In place of drug tests, the ACLU recommended better management practices to detect impaired workers and more drug education programming. A more radical approach was suggested in activist/civil libertarian Abbie Hoffman's book *Steal This Urine Test: Fighting Drug Hysteria in America* (1987). He instructed readers on how to foil the "bladder cops" and "urine troopers" through clandestine techniques such as specimen adulteration (adding salt, hydrogen oxide, or ammonia to the sample) and substitution (tying a disposable bag filled with clean urine to your leg). His step-by-step instructions included practical warnings too. "Do not substitute animal urine. Do not make 'urine' from water and yellow food

coloring or Jell-O. These are easily detected and bomb out in processing” (236). Today, a variety of “how-to” guides for beating a drug test as well as substitutes (e.g., dried urine) are widely available for purchase on the internet.

Civil libertarians have broadened their arguments against mass drug testing since the mid-1980s. First, the criticisms are now couched in more practical, managerial terms. Drug testing is a “bad investment” for companies because the supposed benefits of drug testing are not proven out in fact (American Civil Liberties Union 1999). In a review of the research literature, the ACLU concluded that drug testing had a negligible impact on workplace safety, absenteeism, and turnover. In addition, drug testing appeared to deter well-qualified workers from applying for jobs and had a negative impact on employee morale. Their traditional privacy arguments have given way to more practical concerns of managers. Second, civil libertarians are focusing less on workplace drug testing and more on new testing applications (e.g., the testing of children who participate in after-school activities and welfare recipients) and a broader range of workplace issues (e.g., see Ehrenreich’s 2000 description of the erosion of employee rights including curbs on free speech, assembly, and privacy).

Civil libertarians generally do not object to all forms of workplace drug testing. According to Glasser, “Urine screens may be a useful part of an overall program, but they should be narrowly limited to those employees who are individually and reasonably suspected of using drugs in a way that impairs job performance” (1987, 82). Thus, “for cause” drug testing in an employment context is acceptable as long as strong procedural protections are afforded to test takers. Indiscriminate screening of workers (i.e., universal and random testing) should be avoided because it deprives workers of their personal privacy and does not result in a more productive and motivated workforce. In short, even the most ardent critics of drug testing see a role for it in the workplace.

Unions

Employee unions, both public and private, have fought the idea of workplace drug testing for some time. It would be a simplistic characterization to say that all unions object to all forms of drug testing. While the intensity of resistance varies from union to union, it is possible to identify several points on which they agree. In a review of union drug testing policies, Seeber and Lehman (1989, 42) identified three broad themes winding through union pronouncements on the matter. First, unions approach the testing issue with skepticism but are more likely to accept a policy that allows for union input and is carried out in a nonpunitive manner. Second, unions object to testing policies that are not based on particularized suspicion. Third, unions oppose testing programs that do not include a strong treatment component (e.g., referral to EAP).

Public sector unions have used four tactics to contest workplace drug testing – constitutional challenges, negotiability demands, employee grievances, and political influence (Ricucci and Knowles 1993; Knowles and Ricucci 2001). At the federal level, employee unions have offered constitutional challenges against a) drug testing generally (i.e., testing is an unlawful search in violation of the Fourth Amendment) and b) specific provisions of testing policies (i.e., who should be tested, agency procedures for observing specimen collection). Public sector unions have achieved mixed results with their constitutional challenges. Union broadsides against the general practice of drug testing have not succeeded. In one of the two precedent setting cases decided by the U.S. Supreme Court (*Von Raab*), the National Treasury Employees Union was unable to block the U.S. Customs Services' mandatory testing of workers who carry firearms and transfer into drug interdiction positions. Despite union efforts, the high court had established the constitutionality of workplace drug testing. On the other hand, unions have successfully used constitutional arguments to constrain agency testing policies. For example, unions have won cases which limit the types of

workers that are eligible for testing and the use of tests to detect off-duty drug use in some cases (for a concise summary of these federal court decisions, see Riccucci and Knowles 1993, 894-897). State and local employee unions can raise privacy rights challenges under the U.S. Constitution or state constitutions and laws. The union may improve its chances of prevailing by using state law instead of federal law. For example, Massachusetts law provides citizens with broader privacy protections than those found in the U.S. Constitution (Martucci and Place 1999).

While high profile constitutional challenges receive the greatest amount of attention, unions have quietly plied other tactics to limit drug testing. These challenges are rooted in labor law rather than constitutional law. In jurisdictions which permit collective bargaining between labor and management, certain work-related issues must be the subject of negotiation between both parties. Neither side can take unilateral action on items that are within the scope of bargaining. When drug testing was extended throughout the federal government in the mid-1980s, the negotiability of drug testing was still very much in question (Masters 1988). Federal employee unions have raised a number of negotiability claims about drug testing under Title VII of the Civil Service Reform Act of 1978. While the unions typically lose bargainability cases brought before the Federal Labor Relations Authority, many are still filed as a way to show support for rank and file members and to impede management (Riccucci and Knowles 1993, 904). State employee unions have had more success in adding drug testing to the list of bargainable issues. In New York, suspicion based testing is considered a managerial prerogative not subject to negotiation. All other forms of testing, as well as testing procedures, are mandatory subjects for bargaining (Knowles and Riccucci 2001, 427).

The arbitration of grievances is the other area of labor law unions have used to fight drug testing. Eligible topics for grievance proceedings include the disciplinary actions taken for positive

screens, testing for off-duty drug use, and criteria for reasonable suspicion testing among others (Ricucci and Knowles 1993). There has been some limited research that looks at the influence of drug testing in the grievance process. Organizations that use random testing have higher grievance rates (Henriksson 1994). In addition, preliminary evidence shows that drug testing has no impact on arbitration decisions (Crow, Fok, and Hartman 1994). That is, neither management nor labor has a better chance of winning an arbitration award in a drug disciplinary case if a drug test has been performed. Nevertheless, arbitrators are helping to shape the procedures used for drug testing in the workplace (Denenberg and Denenberg 1987; Redel and Abbey 1993).

Unions have also exercised their political muscle to derail drug testing initiatives. Besides lining up the support of key congresspersons including Rep. Charles Schumer (D-New York) and Patricia Schroeder (D-Colorado) during the debate over Reagan drug testing policies, unions have continued to lobby lawmakers as new drug testing proposals surface (see Knowles and Ricucci 2001).

Several summary points can be made about union resistance to drug testing. First, unions use a multifaceted strategy for opposing drug testing. Some union tactics have been wielded more successfully (e.g., the bargainability of drug testing in state and local jurisdictions, employee grievance process) than others (e.g., cases claiming that drug testing violates the Fourth Amendment). As a result, the union fight may be moving to less public venues (state public employee relations boards and arbitration proceedings). Perhaps, as research seems to suggest, unions believe that they have a better chance of prevailing with claims based on labor law rather than constitutional law. Second, unions have tried to gain public support for their position through more moderate public pronouncements about drug testing while simultaneously shoring up support among the rank and file

by filing grievances and unfair labor practice claims on their behalf. Seeber and Lehman (1989) conclude that while written union policies have accepted drug testing as a “necessary evil” or “fact of life,” in practice, the unions have opposed drug testing and tried to protect members primarily through the grievance process (43). So, unions put on an agreeable public face, but resist testing at every turn. Of final note, there is a slight discrepancy between the attitudes of rank and file workers and the actions of their unions on the issue of drug testing. While workers tend to support many forms of testing, unions generally oppose them, especially through labor and administrative law processes.

Ethicists

Several commentators have examined the ethics of workplace drug testing (Panner and Christakis 1986; Annas 1989; Lo 1991; DeCew 1994). The ethical debate is largely organized around two questions: Is the screening of workers for drugs without their prior consent morally justified? If so, under what circumstances is drug testing ethically acceptable? Much like the legal reasoning used by jurists, ethicists typically apply a utilitarian or “balancing of interests” approach to the issue. In other words, these writers do not generally view drug testing as being inherently good or bad. The morality of testing depends in large measure on the social benefits and costs derived from such testing. For the ethicist, then, “The key moral issues involve determining when the interests of others are significant enough to outweigh the threats to test subjects and when the achievable goals outweigh the negative consequences of testing” (DeCew 1994, 21). Thus, one can make moral judgments about specific testing practices by analyzing a) the policy justification offered for testing (i.e., the express goals for the drug testing policy) *and* b) the effects of the tests on the parties involved.

A consensus view about the ethics of applicant and employee drug testing can be distilled from the literature (key elements are summarized in Table 2.1). Ethicists generally view the mass

testing of workers, absent individualized suspicion of drug use, as morally troublesome (Panner and Christakis 1986, DeCew 1994). Drug tests given to job seekers under symbolic (“To put forth the perception that our workforce is drug-free”) or deterrence (“Drug users need not apply for this job”) rationales are not morally acceptable. Preemployment testing conducted for these reasons violates the important principle of autonomy, or respect for individual privacy (Lo 1991). In short, protecting employees’ rights to privacy is of greater moral import than maintaining a public perception of drug-free workplace or deterring drug users from seeking employment. Other policy justifications for testing job candidates, such as the protection of public and worker safety, are not addressed in the ethics literature.

While testing persons *prior* to hiring does not sit well with ethicists, a majority position holds that the screening of currently employed workers may be morally justified under narrowly prescribed circumstances. Ethicists’ views regarding three common types of employee drug testing policies (universal, random, and for cause) are discussed below.

- *Universal.* No matter the policy justification offered, ethicists are united in their disdain for blanket or universal testing of workers without specific cause. Thus, a testing program that seeks to improve worker productivity (i.e., reduce absenteeism) cannot be defended through ethical reasoning. The protection of worker privacy outweighs an employer’s economic interests in running a business efficiently. The employer’s autonomy to operate an enterprise is limited by the need to respect the autonomy of workers (Lo 1991, 1992). Other universal policy justifications fail as well. A universal testing program, even if done with the goal of helping workers to overcome addiction, is also on morally shaky ground. The principle of

beneficence, providing affirmative aid to others, is a less important moral duty than protecting the autonomy and dignity of the individual (Lo 1991).

- *Random.* Random testing of workers is acceptable if undertaken for the “right” reasons *and* conducted in a manner that maintains the procedural due process rights and dignity of test takers. A random testing program conceived with the intention of deterring workers from using illicit substances does not meet the acceptability test. Deterrence is not an acceptable reason without clear indications of drug use in the workforce. “With no showing of a significant problem there is too little evidence that there will be any deterrent effect or any progress made to combat drug use” (DeCew 1994, 22). Random testing does gain ethical legitimacy when it is done to prevent harm to third parties such as co-workers or the public generally. According to Lo (1991), a society may determine that the duty to protect others from injury (the principle of nonmaleficence) overrides the duty to protect the privacy rights of individuals. This line of reasoning would appear to provide ethical cover for random testing of persons in safety sensitive occupations such as airline pilots, truck drivers, and police officers as long as the tests are scientifically valid and due process is ensured (e.g., use of confirmatory tests, right to appeal).
- *For Cause.* The testing of individuals who are suspected of being under the influence of drugs while on the job is ethically justified under certain circumstances. First, if the organization’s rationale for allowing testing when a manager suspects that a worker is drug impaired is to provide treatment to individuals who may pose a substantial to themselves, then the policy may be appropriate. Beneficence is an acceptable rationale if a person is in danger (Lo 1991). Second, if the worker performs tasks that pose a grave risk to the health

and safety of the public *and* there is evidence that the worker is under the influence of drugs, for cause testing is also permissible (DeCew 1994). In cases such as these, the duty to prevent injury to others overrides the right to individual privacy.

Table 2.1: The Ethical Acceptability of Specific Drug Tests

Type of Drug Test	Policy Justification	Ethical Determination
<i>Preemployment</i>	Symbolic	Unacceptable: The benefits of testing do not outweigh the harms, especially the infringement of personal privacy
	Deterrence	Unacceptable: The benefits of testing do not outweigh the harms, especially the infringement of personal privacy
	Public and Worker Safety	Not addressed in ethics literature
<i>Existing Workforce</i>		
Universal	Productivity	Unacceptable: Economic interests of employers do not justify overriding the autonomy interests of workers
	Treatment	Unacceptable: Protecting the autonomy of the individual is a stronger moral duty than beneficence
	Public and Worker Safety	Not addressed in ethics literature
Random	Deterrence	Unacceptable: “With no showing of a significant problem there is too little evidence that there will be any deterrent effect or any progress made to combat drug use” (DeCew 1994, 22)
	Public and Worker Safety	Acceptable: Preventing harm to third parties overrides individual privacy considerations
For Cause	Treatment	Acceptable: Beneficence is an acceptable rationale if person is in danger
	Public and Worker Safety	Acceptable: If the safety of others is in jeopardy and a problem is evident, then the privacy concerns of the individual are trumped by the need to prevent harm

While ethical commentators provide some moral direction to policymakers who are considering various drug testing options, they do not offer an opinion in several important areas. Interestingly, ethicists do not directly comment on two widely used drug testing strategies – the

universal testing of job applicants and current workers for public safety reasons. These appear to fall into an ethical “gray area.” Unfortunately, these are some of the most popular justifications used for testing in the public sector, especially in transportation and law enforcement. Thus, we are left in a kind of ethical purgatory, never quite sure whether these applications are on solid ethical footing. Ethicists are also guilty of simplifying the complex judicial reasoning behind drug testing court decisions. In practice, the courts have considered multiple justifications together. Ethicists have focused on single justifications offered in support of the tests without comment on the moral force of additive justifications. The federal government’s drug testing program, for example, has been sold under all the policy justifications mentioned earlier. Does this shotgun approach improve the ethical standing of the practice? Lastly, the ethicists devote little space as to the morality of drug testing policies that seem to discriminate against a class of job applicants or employees. Only one source (Normand, Lempert, and O’Brien 1994, 300) even introduces the idea that preemployment testing could “disadvantage people of a particular social status.” However, the discriminatory potential of drug testing is not pursued further.

Echoing a theme addressed by civil libertarians, ethicists express some concern that scientific advances, such as drug testing, are contributing to the erosion of Fourth Amendment protections. One commentator warns that minor violations of employee rights may lead to more egregious violations (Lo 1991, 199). Annas fears that in a coming “Age of Screening” we may be heading down a slippery slope of privacy invasion: “We like the easy way out, and mandatory drug screening seems cheap; it only costs us our Fourth Amendment security” (1989, 37). Protection of personal rights, particularly Fourth Amendment privacy protections, is paramount to these writers. As such, strong procedural protections should be in place (Panner and Christakis 1986; DeCew 1994). Most ethicists, particularly Lo and DeCew, believe that alternative means of identifying workers with drug

problems, such as employee assistance programs, should be implemented before embarking on a mass screening program.

In sum, drug testing policies based on deterrence, symbolic, and productivity rationales have little moral force as the protection of individual privacy is a more important value in the United States. While most ethicists agree that the mass screening of workers without individualized suspicion should be avoided at all costs, they also believe that the protection of individuals from harm caused by an impaired worker is an appropriate justification for testing. Certain types of drug testing (random, for cause) are ethically justified in situations where drug-impaired workers significantly compromise the safety of the public. The morality of universal testing of job applicants and existing employees when worker or public safety is offered as the policy justification is not addressed in this literature. It is difficult to project how moralists would come down on these universal testing strategies. It is not clear how ethicists would negotiate between their discomfort with mass screening and cautious acceptance of testing when safety is the primary issue.

Other Countries

Resistance to American employee drug testing policies fomented abroad. A headline in the leftist British weekly the *New Statesman* screamed “Don’t Drop Your Zipper for the Gipper” (Gillespie 1987-1988), an obvious show of disdain for President Ronald Reagan’s pro drug testing stance. However, the most immediate concerns about the new United States drug testing policy did not come from overseas, but from America’s most important trading partner, Canada.

Not all Canadians embraced America’s push for more drug testing. The American drug testing requirements, particularly those involving workers in the transportation industry, ran headlong

into opposition from Canadian unions (see Alvi 1994). In addition, there were questions about the legality of such practices which seemed to run counter to protections guaranteed to Canadian workers under the *Canadian Human Rights Act*. As the number of disparate court decisions mounted on the issue, the Canadian Human Rights Commission saw the need to clarify the government's policy on drug testing. In its most recent policy statement (Canadian Human Rights Commission 2002), the Commission concluded that pre-employment and random testing programs are not acceptable because they do not measure impairment on the job. Other drug tests, including reasonable cause and post-accident, are acceptable if there are reasonable grounds to believe that there is a substance abuse problem or that drug impairment contributed to an accident. An exception to this policy involves Canadian firms that engage in cross-border trucking and busing. Firms engaged in these activities can adopt the more rigorous job applicant and random testing policies required under U.S. law. Canada's adoption *and* rejection of important elements in U.S. drug testing policy has created some friction, especially in matters of trade, between the two nations. By way of example, the Federal Railway Administration introduced a rule change in early 2001 that would require Canadian railroads to conduct random drug tests of dispatchers (U.S. Department of Transportation 2001). This change in policy (foreign-based railroads had been exempt from random testing previously) drew the ire of Canadian railroads who would have to defend themselves against Human Rights challenges in court. In the end, drug testing, in some form, is now a reality for workers in transportation and safety related industries in Canada.

What is the status of drug testing in other western democracies today? Unfortunately, very little is actually known about the extent of workplace drug testing outside the United States and Canada. It does not appear that other industrialized countries engage extensively in workplace drug testing. In a survey of European countries, Verstraete and Pierce (2001) report that employee drug

testing is increasing in importance in the United Kingdom and several Scandinavian countries, but it is not nearly as widespread as in American workplaces. Testing appears to be limited to a few specified industries (transportation, military, chemicals) and employment situations (pre-employment and “for cause”). At this time, there is no legislation that either encourages or prohibits drug testing in Europe. Like the early American experience with drug testing, some European countries are now developing written standards and protocols to regulate drug testing in the workplace.

After reviewing the historical debate from the perspectives of the key combatants, it appears that the support for employee drug testing has solidified over time while the resistance has become somewhat fractured. General public opinion surveys, as well as polls of managers and workers, show increasing levels of support for employee drug testing. On the anti-drug testing side of the debate, the intensity of the opposition has wilted as the number of workplace tests increased. Improvements brought on by the new testing standards allayed the concerns of most medical researchers, an important source of criticism at the outset. Other western countries have begun to institutionalize drug testing as evidenced by the recent attempt by European Union member states to establish testing protocols. Canada has generally acceded to American drug testing requirements for transportation workers. Arguably the staunchest foe of workplace drug testing, the American Civil Liberties Union (ACLU), is one of the few combatants left on the drug testing battlefield. It has altered its target (from workplace to student and welfare recipient testing) and arguments (from privacy infringement to the overstated benefits of testing). The once clear distinction between supporters and opponents has been blurred as workplace drug testing has emerged as a standard practice in many organizations.

CHAPTER 3: A PUBLIC SECTOR THEORY OF DRUG TESTING

Employee drug testing has attracted the attention of analysts from many academic disciplines including medicine, political science, business management, philosophy, sociology, public administration, psychology, and law. Even with all the interest in the subject, very little effort has been directed toward the construction of drug testing theory. In this chapter, the most promising theoretical foundation for drug testing – social control theory – is first introduced and then reworked into a new typology to describe public sector drug testing. Alternative theoretical frameworks, including a nascent effort in public administration and more developed perspectives rooted in the behavioral sciences, are also presented.

The social science literature on drug testing broadly divides into two areas: a) applied studies that look at the technical considerations related to program implementation and b) theoretical investigations that explore the normative justifications behind drug testing policies. Legal and administrative analyses predominate the first part. Riccucci's (1990) overview of the legal issues surrounding the implementation of drug testing programs is representative of the applied research. A fair amount of literature emerged soon after the U.S. Supreme Court rulings in 1989 to provide policy and legal guidance to human resource managers interested in implementing a testing program (Klingner and O'Neill 1991; Klingner, O'Neill, and Sabet 1990; Elliot 1989). Additional studies described the implementation of drug testing policies and programs at the federal (Thompson, Riccucci, and Ban 1991), state (Atwood 1992, Nice 1991) and local levels (Strickland and Whicker 1990; Daley and Ellis 1994; Fine, Reeves, and Harney 1996).

An important body of research explores the motivations behind the construction of employee drug testing programs.⁸ Much of the research is rooted in social control theory – the study of social

responses to nonconformist behavior. O'Malley and Mugford (1991, 141-142) view drug testing as a "technique designed to pursue deeply moral goals" held by "self-appointed crusaders." Conflict theorists see drug testing as a way for the state and its corporate agents to control workers (Gerber et al. 1990). Other researchers note the importance of symbols in social control. According to Reinerman, Waldorf, and Murphy (1988), cocaine serves as a symbolic "scapegoat" for all the drug problems in society. In their view, the current war against drugs has been recast as a war against cocaine. The war analogy justifies the extreme tactics taken to eradicate drugs in the workplace, including the invasion of worker privacy. Hanson (1993, 171) directs his research to the effects of drug testing on those who are subjected to it. He posits that drug testing reinforces "the automatic docility that people have." This has important ramifications for society because a passive or disciplined population submits to any formal directive without need for rationale or justification. Gilliom (1994) places employee drug testing at the beginning of a trend in technical advances that leads to greater surveillance over individuals. Hecker and Kaplan (1989) see drug testing as a continuation of the disciplinary and control systems that emerged during the Industrial Revolution and scientific management movement. Finally, Borg and Arnold (1997) conceptualize drug testing as a type of "social monitoring" that emerges within organizations that are culturally diverse and lack intimate relationships among members.

As evidenced above, drug testing research is highly segmented. Besides the split between applied and theoretical work, commentators address the issue from different perspectives and disciplinary bases. Another distinguishing feature in the research is the degree to which external factors such as politics and court rulings are incorporated into the analysis. The social control literature is further splintered by the aspect of control that is studied. For example, some concentrate on the motives of controllers while others focus on the effectiveness of the control measure itself.

Not surprisingly, most research seeks to understand the control aspects of drug testing through the lens of a particular theoretical perspective or at a single point in time. These divisions prevent a comprehensive understanding of drug testing as a mechanism of social control.

Theoretical Approach

This paper builds on Black's (1976; 1984) framework for studying social control. Black defines social control as the process by which "people define and respond to deviant behavior" (1984, 5). It includes all forms of punishment such as humiliation, scolding, and nonverbal forms of disapproval (e.g., scowl or stare) and the social arrangements used for settling such disputes (e.g., mediation, arbitration, and adjudication). In short, social control "is present whenever and wherever people express grievances against their fellows" (5).

For Black, social control is a dynamic concept. People define and respond to deviant behavior in different ways. There is a degree of normative variability in social control that permits its comparison across communities and societies (1984, 1). The variation in his general theory of social control operates at three levels – form, style, and quantity. *Form* is the "mechanism by which a person expresses a grievance" (7). There are two types of form in social control, those involving the disputants only and those including a third party as settlement agent. The former involves only the primary disputants with or without the help of supporters. A supporter could be a union representative who intervenes on behalf of an aggrieved union member. The control may flow in one direction (unilateral) or it may involve a reciprocal exchange of grievances (bilateral). The latter type of form includes a third party that acts authoritatively to end a dispute (trilateral). For example, an arbitrator may be asked to settle an impasse in stalled labor-management negotiations.

The second variable aspect of social control is *style* (see Table 3.1). Style is simply a response to deviant behavior. There are four types of style including penal, compensatory, therapeutic, and conciliatory (1976, 4). The penal style focuses on the conduct under question. In societies operating under the penal style, punishment of the “offender” may be justified as a way to discourage future deviant behavior. Compensatory responses focus on the consequences of certain acts, not the conduct itself. Those engaging in deviant behavior are classified as “debtors” who become liable for the damage that results from their actions. Therapeutic styles focus on the individual. Here, the deviant is characterized as a “victim” who is not responsible for the deviant act or its consequences. Treatment related to the deviant’s condition is the typical response in therapeutic social situations. The relationship between “disputants” is the focus in the conciliatory style of social control. A return to harmonious relations is the goal in this style. Black (1976), notes that each style of social control matches a particular type of law – penal is evident in criminal law, compensatory in civil law, therapeutic in juvenile law, and conciliatory in labor law.

Table 3.1: Styles of Social Control

	Penal	Compensatory	Therapeutic	Conciliatory
Standard	Prohibition	Obligation	Normality	Harmony
Problem	Guilt	Debt	Need	Conflict
Initiation of Case	Group	Victim	Deviant	Disputants
Identity of Deviant	Offender	Debtor	Victim	Disputant
Solution	Punishment	Payment	Help	Resolution

Source: Black (1976, 5)

Quantity is the final variable in Black’s approach to social control. Styles and forms are often measured in quantitative terms (Black 1984, 13). Black warns that the quantity of social control is not necessarily related to its form or style (14). By way of example, a penal sanction such as a parking ticket may not be as burdensome to the deviant as a compensatory payment or coerced treatment.

The general theory of social control is adopted for this analysis with a significant modification. The variability in Black's approach allows for the study of social control from setting to setting. The model spans communities and societies. It is a "general" theory that strives for universality. In this chapter, Black's framework is used to study variability *within* a specific social control mechanism. The attempt here is to understand the complex operation of employee drug testing and the effectiveness of its control. In contrast to the original theory, variability runs deep rather than wide. Variability in the current study is conceptualized in terms of the normative justifications offered in support of drug testing programs (i.e., protects public safety, improves worker productivity, provides a means for management control of workers). The sheer number and diversity of justifications for drug testing may explain its general appeal and acceptance today. The ability to compare different drug testing rationales on a standard theoretical framework (form, style, quantity) is the primary strength of this approach. This investigation explores the differential responses (drug testing policy justifications) to perceived deviance (drug use) within public organizations.

There are several other critical components in social control theory that should be mentioned at this point. Social control theorists acknowledge that the amount of social control varies with the social status and social distance among disputing parties and the existence of third party settlement agents (Black 1984; Black and Baumgartner 1993). These items are not considered in the immediate task of sorting out the policy justifications. While the social status and social distance of group members may have an impact on whether a drug testing policy is adopted in other settings (see Borg and Arnold 1997), the issue is moot in this case since the federal government already operates a comprehensive drug testing program. These aspects of social control theory become operable when comparing the drug testing policies of multiple jurisdictions. As such, the hypothesized effects of

social status, social distance, and third party involvement on drug testing are discussed in greater detail in the methodology section (Chapter 5).

Employee Drug Testing as Social Control

As noted earlier, employee drug testing fits the classical definition of social control. It is a technique for defining and responding to deviant behavior (i.e., illegal drug use). In several respects, employee drug testing differs from other forms of social control. First, formal social organizations (i.e., bureaucracies) are responsible for implementing this control. Within certain statutory parameters, governmental agencies not only determine the classes of workers to be tested, but they establish the sanctions for positive drug screens (e.g., leave of absence, dismissal, mandatory treatment). Second, even though the deviance is an illegal act, criminal prosecution is not available as a sanction (not allowed under executive order). This creates an interesting dynamic where highly legalistic organizations sanction in non-legalistic ways (e.g., provide treatment). Finally, since drug tests measure drug use over a period of time instead of where the drug was taken, the organization's control over workers expands beyond the boundaries of the organization into an employee's private life.

The purpose here is to build on the earlier historical/contextual discussions to gain a better understanding of the specific operation of drug testing as a method of social control. Six prominent justifications for drug testing (performance, health, and safety; deterrence; rehabilitation; symbolism; technology; and conflict) are analyzed using Black's framework. Research supporting or refuting the effectiveness of these rationales is also discussed.

Performance, Health, and Safety

One of the most common arguments in support of employee drug testing is that it will increase worker productivity and protect the health and safety of workers and citizens. One widely reported figure puts the cost to employers in lost productivity and job related accidents due to drug use at \$60 billion a year (National Drug Control Strategy 1989 cited in Thompson, Riccucci, and Ban 1991, 518). The health and safety justification was formally put forth in Executive Order 12564 (1986) and supported in *Skinner* (impaired railway workers pose a significant threat to public safety) and *Von Raab* (concern about the potential risk of deadly force used by Customs Service agents suffering from impaired judgment).

Using the variables from Black's general theory of social control, it is possible to identify key differences between the rationales offered in support of employee drug testing. This provides insight into the variability within a single type of social control. The *form* typically used for expressing grievances when performance, safety, and health concerns predominate is unilateral. That is, control flows one way from managers to subordinates. Grievances are directed at an employee's poor performance or judgment. A second, bilateral form is also relevant here. In many cases, drug testing procedures are negotiable issues in collective bargaining agreements between management and labor. This adds a third party supporter (organized labor) to the grievance mechanism. The second variable, *style*, represents the differential response to deviance. The approach commonly taken in performance and safety matters is compensatory. The focus is on the consequences of the act, not the act itself. For example, an employee's drug use is seen as having a negative impact on individual or agency productivity and safety. There are a number of existing measures that are used to quantify form and style. Employees under the influence of drugs could impose costs through excessive absenteeism, high turnover, greater use of medical benefits, behavior that endangers the public (thereby increasing

employer liability), and actions that undercut the performance of other workers (Thompson, Riccucci, and Ban 1991, 518). Using these measures, how effective is the health, safety, and productivity justification for worker drug testing?

Existing research offers mixed results regarding the effectiveness of drug testing in improving job performance and workplace safety. Several studies employing vastly different methodologies conclude that drug testing has little or no impact on worker safety and productivity. Macdonald (1995) asked workers to identify the most important factors that increased the likelihood of workplace injuries. Workers cited problems with staying awake, noise, and shift work as the leading contributors to accidents on the job. Illicit drug use was the least important factor. From these findings, Macdonald questioned the need for drug testing when there is an unproven causal link between illegal drug use and work injuries (718). In another study, Parish (1989) analyzed the employment status of hospital workers one year after they underwent a preemployment drug screen. All employees were hired by the hospital regardless of test results. After one year of employment, Parish found that there was no difference between individuals who tested positive and negative on measures of job performance, job retention, supervisor evaluations, and reasons for termination. A final study investigated the impact of drug testing on a company's productivity calculated as the net sales divided by the number of employees (Shepard and Clifton 1998). To their surprise, companies that had preemployment or random drug testing programs had significantly *lower* productivity levels than firms that did not test workers. So there is a body of evidence that finds no link between drug testing and safety/performance or an inverse relationship between variables (i.e., presence of drug testing leads to lower productivity). Critics believe that there is greater justification for alcohol rather than drug testing in the workplace due to the proven effect that alcohol has on psychomotor

performance, the causal link between alcohol and traffic collisions, and the widespread use of alcohol in comparison to other drugs (Macdonald 1997).

Some studies credit drug testing with improving the safety and efficiency of business operations. Several researchers (Comer 1994; Thompson, Riccucci, and Ban 1991) concede a modest correlation between drug abuse and negative employee behaviors (absenteeism, accidents, injuries, disciplinary actions). Lockwood et al. (1999) found that workplace accidents declined when hotels introduced a drug testing program that included preemployment *and* random testing. Preemployment testing alone did not have an effect. A few other studies have shown that those who test positive for drugs *prior* to employment are more likely to have higher rates of absenteeism, turnover, and disciplinary actions than those who test negative (Zwerling, Ryan and Orav 1990; Normand, Salyards, and Mahoney 1990). However, research that looks at the impact of “for cause” and random testing on productivity is considered to be seriously flawed or non-existent (Normand, Lempert, and O’Brien 1994). In short, more research needs to be done to establish a definitive causal relationship between drug testing and improved productivity and safety.

Deterrence

The deterrence argument supporting workplace drug testing is used in two ways. First, testing is viewed as a deterrent to individuals in certain safety or security sensitive job categories. In these cases, random, unannounced drug tests are used to deter individuals from using illegal substances. Second, it serves as a firewall to prevent drug users from securing employment in government generally or in specified positions. In its gatekeeper function, government may blanket test all new job applicants (general deterrence) or individuals receiving promotions to sensitive positions (see *Von Raab*). As indicated in the earlier review of the legal context of drug testing,

federal courts are generally accepting of deterrence arguments for testing conducted in both manners. Not all agree with this line of legal reasoning, however (see Ethicists' views in Chapter 2). Judith DeCew, a philosophy professor at Clark University, finds "insufficient moral justification" for drug testing when there is no evidence of a drug problem in the group subjected to testing or when it is based on a generalized claim about the need to fight a "war on drugs" (1994, 22). For her, the benefits of general deterrence drug testing do not outweigh the harm done to individuals. Thus, drug testing is not morally justifiable when it is used to deter drug use generally (*Von Raab*), but it may be deemed ethical when safety and health considerations are specified (*Skinner*).

The deterrence justification usually follows a unilateral form of control. High-level decision makers set the policy, and subordinates/job seekers submit to it. The costs of not taking the test are high and directed only at the person taking part in the drug test. The style is decidedly penal. Job applicants recording a positive drug screen are denied employment with few appellate options. The same holds true for those seeking job promotions or transfers. Deterrence, by its very nature, infers some level of sanctioning for noncompliance. The deterrent effects may be quantified in terms of the number and rate of positive drug tests or the number of persons denied employment due to failed drug screens.

There is evidence to refute and support the deterrence argument. In a particularly damning statement against the deterrence rationale, researchers from the National Academy of Sciences (NAS) found "no conclusive scientific evidence from properly controlled studies that employment drug-testing programs widely discourage drug use" (Normand, Lempert, and O'Brien 1994, 236). Comer (1994, 260) posits that drug tests may curb infrequent, casual, off-hours use, but it will not reduce the types of abuse that do the most harm to organizations. Reuter (1988, 555) wonders about the

deterrent value of drug testing when employee behavior is already closely monitored and when drug use is relatively rare among people who populate organizations, that is, workers over age 40. Others criticize a key assumption underlying deterrence, that drug use is voluntary and not based on addiction (Crown and Rosse 1988). There is no evidence that drug testing deters drug addicts in any way. Last, there is a tendency when calculating the deterrent effects of drug testing to leave out important negative variables including “employee trust, job satisfaction, involvement in the organization, propensity to side with unions rather than management, and persons who refuse to work for government” (Thompson, Riccucci, and Ban 1991, 520).

Several studies demonstrate a deterrent effect of drug testing. As discussed earlier, U.S. Navy personnel thought that urinalysis reduced drug use in the military (Cohen 1986). Borack (1998) compared drug use in the Navy to comparable groups of civilians to determine the deterrent impact of drug testing on drug use. He concluded that the Navy’s intensive drug testing program deterred almost 60 percent of potential drug use. The deterrent effect of drug testing on nonmilitary subjects has also been studied. An analysis of data collected from the 1994 National Household Survey on Drug Abuse found that weekly marijuana users were significantly less likely to work for companies that use preemployment, random, or a combination of drug testing programs (Hoffmann and Larison 1999). A similar pattern was found among cocaine users. Frequent drug users also indicate that they are less likely to want to work for companies that screen workers. Drug using undergraduate and graduate business students “were less likely to continue the application process or accept a job with (a) company, regardless of whether the screening procedure was an integrity-type test or urinalysis (Rosse, Miller, and Ringer 1996, 483). Drug users had more negative reactions to all forms of employment screening procedures than non-users.

Rehabilitation

There is a rehabilitative theme that quietly underlies many of the other drug testing arguments. According to proponents of this rationalization, drug testing is justified because it helps to identify employees who have substance abuse problems. Once identified, the organization plays a proactive role in facilitating the person's recovery and reintegration back into the workforce. President Reagan's drug free workplace initiative included a mandatory referral of persons who tested positive for drugs to employee assistance programs (EAP). Even today, these agency-sponsored programs provide employees with assessment and counseling services as well as referrals to more intensive treatment interventions. Jacobs and Zimmer (1991, 345) contend that without the link between testing and treatment, the widespread growth in drug testing would not have been possible. Union official opposition to testing was defused by tying drug testing to EAPs (348). Public opinion surveys indicate a desire for rehabilitation over punishment. A Newsweek/Gallup survey found that citizens strongly prefer mandatory drug treatment for persons testing positive for drugs over more punitive organizational responses (Anonymous 1986a).

How does drug testing with a rehabilitative focus operate as social control? The form may be conceived as either uni- or bilateral control. Coerced treatment fits a unilateral approach, while a joint determination that a person needs help is more accurately described in reciprocal (bilateral) terms. Not surprising, the treatment generally fits a therapeutic mold. People are viewed as victims in need of help. However, coerced treatment may take on aspects of the penal style. Finally, rehabilitation can be measured by the amount of funding available for treatment, the number of referrals made to various services, and the number of persons who return to work after completing a treatment program.

The available evidence paints a mixed picture of drug treatment. The NAS study found little scientific evidence to support the idea that drug testing leads to more rehabilitation of drug abusing workers (Normand, Lempert, and O'Brien 1994). Another criticism focuses on the high cost of treatment. In FY 1998 alone, the federal government spent \$3.2 billion, or 20 percent of drug control funds, on drug treatment (U.S. General Accounting Office 1998, 4-5).⁹ Even with these large expenditures, the latest estimate shows that 57 percent of persons in need of treatment do not receive it (Office of National Drug Control Policy 2000, 140). A number of studies demonstrate the effectiveness of certain drug treatment programs in reducing criminal behavior, preventing future drug use, and improving the employability of past users (see U.S. General Accounting Office 1998). However, relapse rates still remain high. In fact, one report states that "relapse to drug use is the rule" (cited in Walker 2001, 268). A noted crime policy expert summed up the drug treatment research in a single proposition: "Drug treatment can help individuals who have made a commitment to end their drug use. But there is no evidence that any treatment program consistently reduces drug use for all persons enrolled in the program" (Walker 2001, 269). If an individual's drug use were detected through a drug screen as opposed to a self-referral to EAP, it would seem that the likelihood of recovery would be diminished. In the language of social control, forced treatment (in line with a more penal style of social control) may not hold as much promise as treatment that is based more on the therapeutic style where the drug user initiates the treatment.

Symbolic

Up to this point, the analysis has focused on the instrumental purposes of drug testing – improving worker performance, ensuring public safety, preventing future drug use, and treating drug-addicted employees. It is possible to view drug testing programs in terms of the *meanings* that these programs have for organizations, employees, or other stakeholders (Cavanaugh and Prasad 1994,

268). Inherent in these arguments is the belief that drug testing may be used for symbolic, non-instrumental purposes.

Four symbolic justifications for drug testing are provided in the literature. They include: the need for federal leadership, the reestablishment of managerial control within organizations, the preservation of societal values, and the use of a war analogy to signify the importance of the issue. Each is discussed in turn below.

From its enabling, the federal drug testing program was held up as a national model for others outside of the federal government to follow. The federal effort was created “to show the way” (see Executive Order 12564 1986). The development of a model program also carried symbolic significance to those within and outside government. Drug testing came to be seen as a “symbolic effort to reaffirm the administrative integrity of the civil service” (Thompson, Riccucci, and Ban 1991, 523). Drug testing symbolized federal preeminence and administrative competence. Interestingly, the “integrity of the civil service” argument has been rejected in more recent lower court rulings (Richman 1994, 114). Second, drug testing was offered as a mechanism for combating “the sense of irrationality and immortality associated with drugs in the workplace” (Cavanaugh and Prasad 1994, 269). It was a way for management to symbolically reestablish control within the organization. Drug testing sent the message to employees that management is “in charge.” Third, the fight against drugs was symbolically conceived as a crusade, one with “no moral middle ground” (Reagan and Reagan 1986, 2227-2228). Government was seen as taking a moral stance against drugs and the anti-social values surrounding their use. Fourth, employee drug testing was cast as a weapon in a “war on drugs.” In this war, the American state recruited the private sector to function as “drug warriors” and agents of social control to carry out the war (Boyes-Watson 1997, 187). Due to the

significance of the fight, the battlefield was extended beyond the institutional boundaries of the federal government.

Because of the diversity of symbols used to justify drug testing, it is difficult to neatly characterize each element. The form for symbolic drug testing is generally unilateral, with the exception of the morality argument, which may be imposed on government by outside actors (e.g., conservative religious groups). Interestingly, government employees may be thought of as third party intervenors. That is, by its example, a drug-free federal workforce promoted a drug-free national workforce. The style appears to be conciliatory except with the “war” analogy. Attempts to instill confidence in governmental institutions are done to promote harmonious relationships between governors and the governed and to promote shared societal values and morals. The “war” form takes on a decidedly penal flavor. By way of example, organizations not accepting of federal drug testing policies are not eligible to receive certain federal grants. To quantify form and style, a survey of citizen attitudes toward government institutions and officials (e.g., confidence, moral qualities of leaders) is perhaps the best method.

The federal government still promotes the symbolic rationale in its workplace drug prevention initiatives. “As the nation’s largest employer, the federal government has continued to provide leadership by example” (Office of National Drug Control Policy 2000, 47). The report notes that since 1986 over 120 federal agencies have adopted drug-free workplace programs (which may or may not include drug testing) as well as industries regulated by the Department of Transportation and the Nuclear Regulatory Commission (47). The report boasts of the number of large private sector employers that have initiated drug-free workplace programs and the new initiatives underway to expand program implementation to small businesses (48). It is unclear how successful the symbolic

argument has been in improving public perception of public administrators. To date, no studies have addressed this question.

Technology

Some critics see a connection between technology and drug testing as a mechanism of social control. Zimmer and Jacobs (1992) attribute the rise in worker drug testing to the development and marketing of improved testing technologies. While some companies may have adopted the new technology for legitimate reasons (i.e., to address an identified drug abuse problem in the workforce), others may have done it to simply imitate their competitors – “the organizational equivalent of keeping up with the Joneses” (Crow and Hartman 1992, 933). Rothstein (1991) believes that employee drug testing is a classic example of the misapplication of technology. Substance abuse results from a complex mix of social, biological, and economic factors. Drug testing is “a doomed attempt to impose a technological solution on a nontechnological problem” (89). In his view, organizations are simply throwing new technologies at the problem of drug use instead of confronting its root causes.

These writers accuse the drug testing industry of stimulating employers’ interest in controlling workers’ drug use in order to generate corporate profits (Zimmer and Jacobs 1992). Walsh and Trumble (1991) note that the marketing of a new, portable assay test to detect marijuana (i.e., EMIT) occurred at the same time that the U.S. military released a survey that showed high drug use in the ranks. They concluded, “The availability of this technology at this particular time was opportune and the purchase of EMIT kits allowed the DOD to plan for a rapid expansion to its laboratory-based program” (27). Drug testing companies launched an aggressive marketing campaign directed at those organizations searching for a quick solution to drug use by employees.

The following promotional piece from a leading drug testing company's website illustrates the marketing tactics used to increase customer share:

“While pre-employment drug screening is a good practice and a great start to a drug free workplace drug program, it is only the first step in creating and maintaining a drug free, cost effective, highly productive workplace. Random testing, voluntary testing, reasonable suspicion testing, specific condition testing and follow-up testing are all equally important types of drug testing” (Quest Diagnostics 2003).

A trilateral control dictates the grievance process. Drug testing manufacturers help to determine the use of drug testing based upon the latest technological innovations and marketing. The style does not seem to fit any of the four recommended by Black (i.e., compensatory, penal, conciliatory, and therapeutic). Unlike the other drug testing justifications, the response is not directed at the deviant act itself. Instead, companies respond to the need for improved detection technology (of course the need may be created by the testing industry itself). The response is market-driven. The extent of technological control can be measured by the number of tests done by technique, accuracy of tests, and corporate profits generated from the sale of drug tests and related services.

Conflict

The conflict theorists who address the issue of drug testing as social control see the issue as one of power, rather than one that directly relates to drug use in the workplace (Hecker and Kaplan 1989; Gerber et al. 1990). Drug testing is a means for strengthening capitalist control over workers. It may also be viewed as a way to discriminate against certain classes of workers including women, minorities, and union activists. Since African Americans and other minorities tend to have higher positive test rates, mandatory drug testing has a particularly negative effect on them, “squeezing them

even more from employment in secure jobs with large employers, perhaps from employment altogether” (O’Malley and Mugford 1991, 139).

A number of conflict theorists have woven the work of French social philosopher, Michel Foucault, into their critiques of drug testing (Hanson 1993; Gilliom 1994; Brown 1996). Foucault’s ideas about how the power to control people has operated in collusion with knowledge are relevant here (cited in Hanson 1993, 164). Drug testing provides organizations with knowledge about people that was unavailable before.¹⁰ This knowledge allows for greater control over people’s behavior. This knowledge may include information about the off-duty behaviors, conduct, and habits of workers (Kosseck and Block 1993). According to Foucault (1995), technology may be used to control deviant behavior and maintain social order. Some commentators (Hanson 1993; Gilliom 1994) have compared drug testing to an architectural innovation described by Foucault (1995) that allowed prison guards to constantly monitor prisoners (Panopticon). Persons subjected to panoptic technology live as though every action is observed. Even if the surveillance is not actually in effect (i.e., no one is in the Panopticon tower), the mere presence of the technology keeps behavior in check. Random drug testing operates in a similar fashion. A worker’s on- and off-duty behavior is controlled by the mere existence of the drug test itself. As a result, workers conform their behavior to organizational expectations even when no one is watching (Hanson 1993).

The approach is unilateral, that is, those in power establish the rules, while the powerless blindly follow. The style is penal. Questioning of the power relationship (e.g., through the creation of labor unions) is discouraged and actively suppressed. Finally, there are a number of existing metrics for quantifying the conflict perspective including the percentage of minorities tested, sanction severity by employee class, and types of drugs included in screens.

The goal of this chapter was to construct a framework for studying public sector drug testing (see Table 3.2). Borrowing heavily from Black's general theory of social control, a new approach was developed for studying the normative variability (i.e., policy justifications) within employee drug testing. A detailed review of the development and operation of employee drug testing in the federal government uncovered six contrasting justifications used to support such programs. Rationales varied between purely instrumental types (protecting public health, deterring future drug use, rehabilitating users) and approaches stressing symbolic, technological, and conflict perspectives. Black's general theory allowed for a structured analysis of these justifications at three levels – form, style, and quantity. What resulted was a more comprehensive understanding of employee drug testing in America. Justifications exhibit different grievance structures (unilateral, bilateral, and trilateral), responses to the offending behavior (compensatory, penal, conciliatory, therapeutic, and market), and standards of measurement (absenteeism, level of treatment funding, and percentage of minorities tested). Justifications also differ in the amount of empirical support available to support the perspective. This complexity (and variability) of justification likely leads, in part, to the general acceptance of workplace drug testing today. Those who see drug testing as a tool for rehabilitating workers and those who view testing through a deterrence lens, can both find justification for the procedure. This complexity makes it a difficult phenomenon to study, but it facilitates its widespread appeal.

Table 3.2: Public Sector Employee Drug Testing Rationales

Justification	Form	Style	Quantity
<p><u>Performance, Health, & Safety</u></p> <ul style="list-style-type: none"> • Increase worker productivity and job performance • Protect the safety of co-workers, citizens, and individual employees 	<p><i>Primarily unilateral control</i></p> <ul style="list-style-type: none"> • Control flows from management to subordinates; worker drug use harms agency productivity <p><i>Secondarily bilateral control</i></p> <ul style="list-style-type: none"> • Drug testing process may be regulated by collective bargaining; third party supporter (labor union) involved in reciprocal grievances 	<p><i>Compensatory</i></p> <ul style="list-style-type: none"> • Focus on the consequences of the act, not the act itself 	<p>Absenteeism, lost earnings, accidents, turnover, liability insurance premiums, medical insurance expenses, adverse disciplinary actions</p>
<p><u>Deterrence</u></p> <ul style="list-style-type: none"> • Prevent workers from using drugs • Prevent the hiring of drug users 	<p><i>Unilateral control</i></p> <ul style="list-style-type: none"> • Management establishes policy; subordinates submit 	<p><i>Penal</i></p> <ul style="list-style-type: none"> • Punishment to deter future offending behavior 	<p>Number and rate of positive tests, number of persons denied employment for positive screens</p>
<p><u>Rehabilitation</u></p> <ul style="list-style-type: none"> • Identify those with problems and provide treatment 	<p><i>Unilateral and bilateral control with supporters</i></p> <ul style="list-style-type: none"> • Supporters are third-party treatment providers 	<p><i>Therapeutic</i></p> <ul style="list-style-type: none"> • Treatment to help the person suffering from addiction 	<p>Treatment funds, referrals to counseling and treatment programs</p>
<p><u>Symbolic</u></p> <ul style="list-style-type: none"> • National: serve as a model for country and private business • Management: maintain rationality within organization • Morality: preserve societal values • War on Drugs: fight the war on every field of battle 	<p><i>National: Unilateral control</i></p> <ul style="list-style-type: none"> • Government workers serve as third party intervenor (by example, drug-free federal workplace promotes drug-free workplaces elsewhere) <p><i>Management: Unilateral</i></p> <ul style="list-style-type: none"> • Management establishes policy, subordinates submit <p><i>Morality: Trilateral control</i></p> <ul style="list-style-type: none"> • A third party sets moral tone <p><i>War on Drugs: Unilateral</i></p> <ul style="list-style-type: none"> • Private companies forced to extend state control over workers 	<p><i>Conciliatory (except War)</i></p> <ul style="list-style-type: none"> • Harmonious relationship between citizenry and government, management and workers • Rediscover shared values and morals <p><i>Penal (War on Drugs).</i></p> <ul style="list-style-type: none"> • Punish companies who do not implement testing program (e.g., not eligible for government contracts) 	<p>Public opinion surveys measuring confidence in institutions of government</p>
<p><u>Technology</u></p> <ul style="list-style-type: none"> • Use new technology for its own sake (lobbying by testing industry) 	<p><i>Trilateral control.</i></p> <ul style="list-style-type: none"> • Technology companies determine drug testing policy 	<p><i>Market.</i></p> <ul style="list-style-type: none"> • Companies respond to the need for improved detection technology 	<p>Number of drug tests completed by type of technology, accuracy rates (false positives), corporate profits</p>
<p><u>Conflict</u></p> <ul style="list-style-type: none"> • Preserve capitalist control over workers 	<p><i>Unilateral control.</i></p> <ul style="list-style-type: none"> • Those with power in society establish the rules, the powerless obey 	<p><i>Penal</i></p> <ul style="list-style-type: none"> • Punish individuals who challenge authority or possess certain undesirable characteristics 	<p>Percentage of minorities tested, testing rates, disparity in sanction severity, selection of drugs tested for</p>

Alternative Theoretical Perspectives

Social control theory provides a solid theoretical base for the study of drug testing. It is not the only theoretical explanation of drug testing, however. Alternative approaches operating under different sets of assumptions and using different units of analysis have been offered. Some of these alternative frameworks possess all the hallmarks of a mature theory. That is, they provide a “systematic explanation for the observations that relate to a particular aspect of life,” including a coherent set of testable propositions (Babbie 1995, 49). Other attempts are not quite so organized. These theory-building efforts typically include a diverse group of research studies that seem to coalesce around a common theme or body of literature. Three counter theories are described below.¹¹ Public administrationists have provided the latest entry in the theory-building literature. This new approach holds that drug testing is best understood as a series of competing legal, managerial, and political values (Knowles and Riccucci 2001). A second alternative theory has its roots in the behavioral sciences. These theorists consider the acceptability of drug testing through the eyes of those who are subjected to the tests. The final section introduces several approaches that are concerned with privacy within organizations.

Competing Perspectives Model of Public Administration

Employee drug testing has been the subject of ongoing discussion in public administration circles since the late-1980s (see Rosen 1987; Elliot 1989). Public administration scholars have been primarily concerned with the pragmatic issues associated with the implementation of new policy initiatives such as drug testing. For example, the most comprehensive treatment of drug testing in the public administration library (Klingner and O’Neill’s 1991) offers guidance on the legal requirements associated with testing, issues to be addressed in agency substance abuse policies, and the approach to

take when working with unions on the issue. While making a valuable contribution on the implementation side of the question, public administrationists have passed over opportunities to build a theory of drug testing. Only recently has there been an attempt to formulate a theoretical understanding of drug testing using a homegrown, public administration approach (Knowles and Riccucci 2001).

In a unique application of Rosenbloom's widely cited theory of public administration (1983), Knowles and Riccucci (2001) analyzed public sector drug testing from three competing perspectives – managerial, political, and legal. These three perspectives are modeled after the separation of powers concept in which each actor brings a distinct set of values and interests to the debate. Responsibility over government policy is both divided and shared by these competing interests. The resulting tension and conflict surrounding major policy initiatives is intentional, that is, the system encourages debate through the simultaneous sharing of power. The policies that emerge from the fray represent the value compromises of the actors. Consensus adds to the legitimacy of the policy outcome and facilitates its eventual implementation. Public managers, representing the executive branch, bring values such as administrative efficiency and responsiveness to agency executives to the policy arena. Unions pursue their own set of political interests by lobbying the legislative branch and filing lawsuits on behalf of members. The courts play an important role in the drug testing debate by specifying the constitutional parameters that guide drug testing policy. This new framework accurately describes the policy interests of several actors in the drug testing debate. It captures the dynamic interplay between major decision makers. The theory does have several shortcomings. It fails to take into account the full range of policy justifications (e.g., health and safety, deterrence) and actors (e.g., drug testing companies, ethicists) that play a role in the debate. The theory does not provide testable propositions for empirical evaluation either. Nevertheless, it is a valuable, early-

stage contribution from a discipline that has played only a marginal role in the theory building enterprise to date.

Organizational Justice

The most well developed theoretical alternative is rooted in the concept of organizational justice. For over a decade, organizational psychologists have studied worker perceptions of fairness in drug testing procedures and outcomes (see Crant and Bateman's 1989 early modeling of employee responses to drug testing programs).¹² Fairness is a compound construct possessing procedural and distributive elements. Procedural justice refers to the fairness of methods used to conduct the drug tests. Worker reactions to the amount of advance notice given before the test and the clarity of the screening policy are ways to measure procedural justice (Konovsky and Cropanzano 1993).

Distributive justice is the fairness of outcomes resulting from the drug test. It is hypothesized that workers' views of drug testing are influenced by the organizational actions taken in response to a positive drug screen (e.g., immediate termination versus referral to treatment). A number of empirical studies confirm the influence of procedural variables on worker perception of drug testing (Ambrose 2000; Raciot and Williams 1993; Tepper and Braun 1995; Sujak, Villanova and Daly 1995; Konovsky and Cropanzano 1991). Drug tests are viewed more favorably when the following procedural elements are in place (Arthur and Doverspike 1997; Cropanzano and Konovsky 1996): a) tests are undertaken when a reasonable suspicion of drug use exists; b) testing is limited to jobs that have an impact on public safety; c) test results are kept confidential; d) employees and their unions participate in the policy making process; e) advance notice of the test date is given; f) a process to appeal test results is available; and g) managers provide explanations for decisions. There was less support for the distributive justice construct although some studies did find that testing was viewed

more favorably when the consequences of a positive screen were less punitive (Tepper and Braun 1995; Kravitz and Brock 1997).

The strengths of the organizational justice approach are many. The theory has attracted much attention as evidenced by the growing body of empirical evidence which appears to support its major propositions. The theory also has immediate relevance to personnel managers. If an organization wants to increase the acceptability of its drug testing policy, it can start by allowing workers to have a say in the policy, providing advance notice, and directing persons who test positive to company sponsored treatment programs. Several criticisms may be leveled against the theory itself and the study designs used to test it. The theory is founded on the perceptions and attitudes of a single class of individuals – actual or future test-takers. Not much work has been done on the fairness perceptions of managers and policymakers. All studies that find support for the theory used a convenience sample of university students as the test subjects. This limits the generalizability of results as older workers, not recent college graduates, fill the ranks in most workplaces. It is unclear whether worker perceptions change as a result of experience within an organization.

Privacy-Based Theories

Two other theories focus on the broader issue of employee privacy within organizations. The first offering, contract theory, emerged from the work of business ethicists seeking a response to principal-agent theory (DesJardins and Duska 1987). Contract theory stipulates that drug testing is a negotiated aspect of the employer-employee relationship. To a certain extent, it involves a balancing of worker privacy rights with an employer's interest in making sure that the employee's performance and behavior is aligned with organizational expectations. If an employee is working at an acceptable level of productivity, then the organization does not have the right to information about the individual

that exists outside the contractual domain (DesJardins and Duska 1987). This reasoning would appear to justify “for cause” testing but limit the use of mass screening tactics. Some see the issue differently. For Cranford (1998), “Employers are entitled to know about employee drug abuse on the grounds that such knowledge is relevant to assessing an employee’s capability to perform according to the terms of the agreement” (1807). Drug testing is morally justified as long as strict terms guide its use. Contract theory has its critics. Carson (1995) notes that the unwritten employment contract excludes the views of parties external to the employer-employee relationship. He wonders how the safety concerns of the public are incorporated into such agreements.

A second stream of privacy research considers the growing amount of information collected by modern organizations about their employees. There has been a recent attempt to arrange this literature into a single theoretical framework called “organizational privacy” (Stone and Stone 1990). Drug testing is often included as one of several organizational practices that may intrude on the privacy interests of employees. Many privacy-infringing procedures are associated with the personnel selection process including medical examinations, background checks, honesty tests, personality inventories, genetic tests, and physiologically based measures (e.g., polygraph, voice stress analyzer) (Stone and Stone 1990). As the amount of personal information collected by organizations increases, some fear that they are dictating off-the-job behavior, in a sense, acting as “social arbiters” (Kossek and Block 1993). In order to get or keep their jobs, workers have to modify their off-duty behaviors to successfully meet the physical and psychological expectations of the organization. There seems to be some support for this view. One study found that two-thirds of litigated cases involved off-duty drug use by workers (LaVan, Katz, and Suttor 1994).

Other data gathering procedures use modern technologies to monitor the behaviors of workers during the workday (for a representative sample of this literature, see DeCew 1997). Three primary types of electronic monitoring are described in the literature (Jenero and Mapes-Riordan 1992; Rosenberg 1999): 1) service observation (taping and listening to employee telephone conversations); 2) computerized work measurement (software that allows employers to view an employee's computer screen, count keystrokes, and determine internet usage); and 3) video and electronic surveillance (close circuit television to guard against employee theft). Cozzetto and Pedeliski (1996) have developed a "privacy framework" to help public managers collect needed employment information without compromising employee privacy rights. They basically call for the development of detailed agency policies regarding the use of technological surveillance (e.g., what types of data will be collected and how will it be used). If organizations do engage in electronic surveillance, they should "utilize the least intrusive methods" available (29).

As detailed earlier in the paper, the courts have settled the important privacy issues relating to employee drug testing. Drug testing is an intrusion on the privacy rights of workers. The infringement is justified, however, if certain judicial tests are met. Agencies can meet the legal requirements by showing a reasonable need for the test and by instituting procedures that protect the due process rights of test takers. For all practical purposes, the privacy debate has largely run its course on this topic. The privacy theories are perhaps more valuable in guiding the use of the latest monitoring technologies (e.g., genetic testing, website tracking) where acceptability standards are still being worked out in statehouses and courthouses throughout the country.

CHAPTER 4: DRUG USE AND TESTING IN LAW ENFORCEMENT AGENCIES

A study of workplace drug testing is best done within a law enforcement context. Certain characteristics of police officer drug testing make it amenable to social scientific inquiry and explanation. Drug testing finds its widest application in professions that impact directly on the safety of the public. As seen earlier, courts have permitted public agencies to adopt a full range of testing regimens, from reasonable suspicion to random, for workers in “safety sensitive” positions, especially those engaged in law enforcement activities. While police agencies in many jurisdictions possess the legal authority to implement a variety of testing strategies, they are not required to do so. Police managers have discretion in setting the drug testing policy for their individual agencies.¹³ This discretion allows for variation in agency testing practices. Law enforcement agencies also have a long history of drug testing, with some departments recording over twenty years experience with the practice (McEwen, Manili, and Connors 1986). After years of use, drug testing has become a routinized procedure in many departments. Police drug testing is widespread, locally controlled, variable across jurisdictions, and institutionalized. These characteristics make police officer drug testing an acceptable vehicle for the study of public sector drug testing generally.

This section begins with a look at the problem of drug use by police officers. As the literature of the first part offers an empirically weak justification for testing, the second section explores alternative ideas about the causes of police drug use. For these authors, officer drug use may be explained by a police sub-culture that protects those engaged in illicit activities or by the unique features of police work that provide opportunities for corruptive behavior. The historical development of testing policies in police organizations is described in the following section. The political and legal contours shaping the practice of drug testing in law enforcement are then

discussed. The chapter concludes by describing the gap that exists in the current drug testing literature.

Scope of the Problem – Drug Use in the Ranks

On February 5, 2003 Trooper Christopher P. Shields, a 16-year veteran of the Massachusetts State Police, was charged with robbing a pharmacy at gunpoint (Ranalli 2003a). Shields, on medical leave for a back injury sustained at work, allegedly stole three bottles of the powerful narcotic OxyContin. He was identified as the pharmacy robber after being arrested for shoplifting videotapes and soda at another store a short time later. This followed the earlier arrest of State Police Sergeant Timothy White, a police spokesman and member of the narcotics unit, for putting a gun in his wife's mouth during a domestic dispute. Prosecutors indicated that the incident "was fueled by cocaine and marijuana use" (B1). The issue of drug abuse in the Massachusetts State Police quickly moved to the top of the news cycle. Questions were soon raised about the adequacy of the State Police's drug testing policy when it was revealed that the number of tests had been cut back in recent years due to budgetary constraints (Ranalli 2003b). The number of random drug tests had been drastically reduced and testing during bi-annual physical exams eliminated altogether. Critics wondered if a random test policy that only resulted in 6 to 8 percent of the workforce being tested could have any deterrent effect (A1).

These types of news stories, often achieving front page status, have become all too familiar – another cop arrested for drug use, or worse, guilty of dealing drugs or protecting drug traffickers from prosecution. The news coverage would lead many to believe that drug use is a pervasive problem within the ranks of law enforcement. Academics have advanced this view too, "it is reasonable to assume that the problem is more extensive than we may want to admit" (Carter and Stephens 1994,

102). Notwithstanding the attention the issue has garnered over several decades, very little is actually known about the extent of drug abuse and addiction among law enforcement personnel. The research that is available is largely anecdotal and empirically weak. Nevertheless, it provides a window into the shadowy world of police drug use.

Four studies have investigated the prevalence of drug use among law enforcement personnel (see summary of key findings in Table 4.1). The National Institute of Occupational Safety and Health (NIOSH) conducted the first study in the mid to late 1970s (Hurrell et al. 1984). The purpose of the investigation was to determine the impact of stress on police officers. Over 2,200 officers from 19 police departments across the country responded to a written survey. The overall response rate was 37 percent, but it varied widely by department (from 19 to 90 percent). Respondents were asked how many of the five officers they worked with most closely had a serious drug problem (not including alcohol). The results were staggering. Officers estimated that 10 percent of their brothers in blue had serious drug problems (Hurrell et al. 1984, 45). Uneven response rates and lack of follow-up led some commentators to describe the NIOSH effort as “methodologically weak” (Dietrich and Smith 1986, 301). A second study investigated the alcohol and drug use patterns of 96 police recruits in Queensland, Australia (Engs and Mulqueeney 1983). Approximately six percent of the police students (average age of 18) experimented with marijuana one year prior to the study. Only two percent indicated current marijuana use. None of the police students reported any cocaine or opium consumption. The third study used qualitative techniques (review of records, unstructured interviews, and participant observation) to ascertain the amount of on-duty drug use by officers in a small southern police department (Kraska and Kappeler 1988). Researchers concluded that 20 percent of officers (10 of 49) used marijuana at least twice a month while on duty (14). They also estimated that ten percent used other illicit drugs including hallucinogens, barbiturates, and stimulants while on-

duty. Officers on the force 4 to 9 years were more likely to smoke marijuana than their peers with more and less experience. The marijuana users tended to have better performance evaluations than non-users. The fourth analysis evaluated hair and urine test results from two police departments located in the midwest and eastern United States (Mieczkowski and Lersch 2002). Compared to workers in other industries, an extremely low number of Eastern City job applicants, trainees, and sworn officers tested positive for drugs. The highest hit rate was recorded for job applicants through the use of a hair analysis technique (1.17%). Less than one-third of one percent of sworn officers tested positive on random urine screens. Cocaine, not marijuana, was the most common substance found in positive samples. Midwest City job seekers registered much higher positive test rates for urine (2.9%) and hair (6.7%) samples. Hair analysis seemed to be especially sensitive in picking up traces of cocaine in black (6.7%) and Hispanic (7.05%) applicants.

Table 4.1: Police Drug Use Literature

Study	Sample/Methods	Prevalence of Drug Use
National Institute of Occupational Safety and Health Study Hurrell, Pate, and Kleismet (1984)	2,200 police officers from 19 departments located throughout the United States Written survey, 37% response rate	10% of police officers have serious drug problems
Engs and Mulqueeney (1983)	96 police trainees from one department in Queensland, Australia Written survey, 100% response rate	6.3% experimented with marijuana one year before study 2.1% admitted current marijuana use No reported use of cocaine and opiates
Kraska and Kappeler (1988)	One police department located in a small city (25,000 population) in the southern portion of the U.S., 49 police officers Participant observation, unstructured interviews, and records analysis	20% of officers reported on-duty marijuana use (2x per month) 10% of officers reported on-duty use of other illegal drugs
Mieczkowski and Lersch (2002)	Two cities (Midwest and Eastern U.S.) Urinalysis and hair test results Eastern City dataset consists of 136,230 tests conducted over a ten year period 1989-1999 Midwest City dataset includes test results for 2,319 job applicants in 1997	<i>Eastern City Positive Test Results</i> Job Applicants Urinalysis 1.08% Hair 1.17% Trainees Urinalysis .06% Hair .45% Sworn Officers (Random) Urinalysis .31% <i>Midwest City Positive Test Results</i> Job Applicants Urinalysis 2.9% Hair 6.7%

In the end, we are left with little scientific evidence to support or refute the popular idea that drug use is widespread in police departments. The research designs provide only a limited snapshot of drug use in a few select departments. It is simply not possible to generalize the findings of these studies to all police departments. There are some indications that drug use may not be as big a problem as commonly thought. The most comprehensive longitudinal data shows relatively low amounts of drug use among existing officers in Eastern City (Mieczkowski and Lersch 2002). Less

than 1 of every 200 trainees and officers tested positive. This finding is tempered somewhat by the higher positive test results found in the Midwest City applicant pool during a single year of testing. Even still, there may still be some reason to question anecdotal assessments of police drug use which tend to sensationalize the small number of actual cases.

The Etiology of Police Drug Use

Some effort has been devoted toward understanding the causes of police officer drug use. Kraska and Kappeler (1988) specify three factors that increase a police officer's vulnerability to drug use – opportunity structure, stress, and police subculture. The occupational setting of police work provides unique opportunities for deviant behavior. For Barker (1994), the very nature of police work contributes to police deviance: “The police come into contact with a *mélange* of deviant actors during their normal work routine, under conditions of little or no supervision” (48). The key features in the opportunity structure are frequent access to illicit drugs and lack of supervision. Prior research indicates that a police officer's continual exposure to certain illegal activities (e.g., drug use) increases the likelihood that the officer will exhibit similar deviant behaviors (Skolnick 1966 cited in Kraska and Kappeler 1988). The routines of undercover drug agents would seem to place them at an especially high risk of becoming socialized into the “drug culture” in which they operate. For undercover officers, the “(c)onstant interaction with the drug environment reduces the negative socio-moral implications of drug usage and concomitantly reinforces both the frequency and permissibility of drug usage” (Carter and Stephens 1994, 108). At a more basic level, police officers are susceptible to drug use because they have ready access to drugs through their daily work activities (Kraska and Kappeler 1988). For example, patrol officers seize drugs from persons they take into custody and work in close proximity to the evidence room where confiscated drugs are kept. The level of supervision is another important aspect in the police opportunity structure. Police officers typically

work alone or in pairs, without direct supervision (Walker and Katz 2002, 331). As such, the chance of being caught using drugs or engaging in other types of misconduct while on-duty is relatively low.

The second vulnerability factor that may lead to illicit drug use is stress. There seems to be some debate in the literature whether law enforcement is a more stressful occupation than others (see discussion in Walker and Katz 2002, 448). Some studies show higher rates of divorce, heart attack, alcoholism, and suicide among police officers than the general population. The most stressful situations for police officers involve incidents that are inherent in police work such as killing someone in the line of duty or engaging in a high speed chase (Violanti and Aron 1995). Organizational policies and practices, including shift work and inadequate supervision, are also important stressors for certain officers. The constant struggle to meet lofty societal expectations is another source of stress for police officers. Police officers are often held to a much higher standard of conduct in their personal and professional lives (Carter and Stephens 1988; Marmo 1986; Elliston 1985). The Law Enforcement Code of Ethics (International Association of Chiefs of Police 2001) sets forth the high ethical ideals of the profession:

“I will keep my private life unsullied as an example to all and will behave in a manner that does not bring discredit to me or to my agency. I will maintain courageous calm in the face of danger, scorn or ridicule; develop self-restraint; and be constantly mindful of the welfare of others. Honest in thought and deed both in my personal and official life, I will be exemplary in obeying the law and the regulations of my department.”

It has been suggested that the high level of stress in police work leads some officers to use drugs as a coping mechanism (Carter and Stephens 1994). While stress has been linked to alcoholism (see the list of studies provided in Kraska and Kappeler 1988), there is no empirical evidence to support the stress-drug use hypothesis in police work.

The police subculture can also serve to inhibit or facilitate police drug use. Subcultures are sustained through the use of peer pressure, a particularly strong influence among police officers (Walker and Katz 2002). Kraska and Kappeler (1988) identify three “ideal type” subcultures in police organizations – traditional, apathetic, and deviant. In “traditional” subcultures, informal group norms are strongly aligned with the formal rules of conduct established by the organization. The subculture serves as a normative check against the structural opportunities that encourage drug use. In his classic study, Skolnick (1994) found that police officers universally supported strong legislative prohibitions against the use of marijuana and narcotics. This is a case where the values of the police subculture were aligned with conventional morality as expressed in the jurisdiction’s drug laws. The “apathetic” subculture is indifferent to the ethical ideals of the profession and organization. Officers take a laissez-faire approach to the drug use and drug-related crime of fellow officers. Individuals operating within these subcultures are vulnerable to structural and stress related pressures. “Deviant” subcultures promote on- and off-duty drug use by police personnel by making drugs available to users and actively protecting those who engage in drug-related activities. Occupational deviance and misconduct are the norms which guide behavior in these organizations.

In sum, the literature suggests that a combination of factors, including opportunity structure, occupational stress, and subculture, may explain the use of illicit substances by police officers. Unfortunately, there is very little scientific backing for these theories. When combined with the limited knowledge about the extent of police drug use, it seems that policymakers have little factual information on which to make drug testing policy decisions. The next section explores the early history of drug testing in police agencies, with a particular focus on the rationales that led to its widespread adoption.

The Drug Testing Solution

The police drug testing debate unfolded within a complex policy environment. Two historical events provided the impetus for drug testing. First, reported drug use, especially cocaine, reached historically high levels in the late 1970s and early 1980s (Office of National Drug Control Policy 2000 citing data from the National Household Survey on Drug Abuse, 1979-1991).¹⁴ Second, a series of high profile police drug corruption scandals in New York, Philadelphia, Miami, and Boston elevated public concerns about the accountability of police (Dombrink 1994). The widespread use of drugs in society was the kindling needed for reform. The systemic corruption problems in big city police departments played the role of the match. Together, they created an environment conducive to the rapid spread of drug testing in law enforcement.

It is instructive to look at the experiences of the early adopters of police drug testing. By the mid-1980s, a majority of large city police departments had policies for reasonable suspicion testing of sworn officers (McEwen, Manili, and Connors 1986). Almost half of these departments (15 of 33) also screened job applicants. Other forms of testing (e.g., probationary officers, officers in sensitive positions) were infrequently used. The New York, Boston, and Philadelphia police departments, racked by scandal, were some of the first to consider drug testing in the early 1980s. At this time, police officer drug use and protection of drug dealers were growing problems in the New York City Police Department (NYPD) (Dombrink 1994, 72). The NYPD focused its initial efforts on preventing drug-using recruits from joining the force (the department also had a “for cause” testing policy for sworn personnel). Job applicants and probationary employees were subjected to rigorous employee screening procedures. From January 1984 to July 1985 approximately 2 percent of job candidates tested positive for controlled substances (Koehler 1986, 78). Over the same period, .4 percent of probationary officers recorded positive screens. All positive-testing applicants and

probationary employees were denied employment or dismissed. Koehler, the NYPD's chief of personnel, indicated that the next phase of the city's drug testing program would include testing of senior or tenured members of the force (1986, 79). The Boston Metropolitan Police Department introduced job applicant and police recruit testing in 1983 (O'Toole 1987). Five percent of job candidates were disqualified as a result of positive screens. A smaller number of police cadets (0 to 3 percent depending on the class) also tested positive. Reasonable suspicion testing was added in 1986 after consultation with the patrolmen's association. In Philadelphia, the task force investigating improprieties in the police department in the early 1980s recommended employee drug testing as one way to control and prevent corruption in the ranks (Dombrink 1994).

A simultaneous effort was undertaken by the International Association of Chiefs of Police (IACP) to formulate a model drug testing policy for police departments. The first IACP policy released in 1986 limited drug testing to three situations: "1) during a routine physical exam; 2) during a special assignment (helicopter pilot, drug detective); and 3) when there is reasonable suspicion" (Gates and Kleinknecht 1987, 17). Three years later, following a contentious debate (see Carter and Stephens 1988; Gates and Kleinknecht 1987), a controversial provision – the random testing of all officers – was added to the model policy (International Association of Chiefs of Police 1989). In a symbolic show of support for random testing, the IACP rolled out the revised policy several months prior to the U.S. Supreme Court's *Skinner* and *Von Raab* decisions. Curiously, the Commission on Accreditation for Law Enforcement Agencies (CALEA) did not include drug testing among its 900 law enforcement standards. Police agencies seeking national accreditation are not required to screen employees for drugs.

At the height of the drug testing debate, Higginbotham (1986, 28-30) identified seven legally sustainable reasons for police officer drug testing. Several of the justifications can be generalized to many public workplaces (public trust, morale in the workplace, loss of productivity, and civil liability), while others are more specific to the work of police officers (public safety, potential for corruption, and presentation of credible testimony). Each rationale is briefly described below.

- *Public safety.* Drugs significantly impair the judgment and response capabilities of officers. Public safety may be compromised by drug impaired officers, especially when operating a police vehicle or discharging a weapon.
- *Public trust.* The police are better able to prevent and solve crimes if they have the support and cooperation of the citizenry. The confidence and trust of the community “can be undermined if police officers are allowed to break the law. This type of illegal behavior sends a strong message to the public about the importance (or unimportance) of obeying the law” (Dunham, Lewis, and Alpert 1988). An officer essentially violates three laws (purchase, possession, and use) when he abuses illegal drugs. This undermines the rule of law and peoples’ faith in those who are sworn to uphold it.
- *Potential for corruption.* Officers who are involved in illegal drugs are more susceptible to corruptive influences. A drug dealer who learns of the officer’s occupational status may use that information to blackmail the officer.

- *Presentation of credible testimony.* The testimony of an officer who uses or sells illegal drugs could be subject to impeachment through proof or an admission that he is a violator of the law.
- *Morale in the workplace.* Failure to uphold the law on the part of a few officers can have an important effect on the morale of other officers. Drug use causes officers to question the abilities of co-workers who may be called on to protect the lives of fellow officers in dangerous situations.
- *Loss of productivity.* Drug use results in higher levels of absenteeism and lower productivity.
- *Civil Liability.* The department may be civilly liable if it was demonstrated that an injury (personal or property) was directly linked to the failure of the department to detect and resolve an officer's drug abuse problem.

There is no shortage of opinion about the validity of these arguments (see Chapter 3 generally). The evidence is inconclusive regarding claims that drug testing improves public safety, productivity, and trust in public workers. The notion that officer drug use leads to occupational corruption, a justification unique to the policing context, has also been challenged in the latest literature. In a recent study, the U.S. General Accounting Office (1998b) identified eight factors associated with drug-related police corruption: 1) opportunities to commit illegal acts or crimes on the job – for example, the taking of large sums of money from drug dealers who are not likely to report the theft; 2) the age and education-level of the officer; 3) inadequate training, particularly integrity training, in the police academies and on the job; 4) a police culture that supported or ignored

corruption; 5) ineffective headquarters and field supervision; 6) management's failure to enforce a code of integrity; 7) weaknesses in a police department's internal investigative structure and practices; 8) involvement in police brutality; and 9) pressures arising from an officer's personal neighborhood ties (14-15).¹⁵ Noticeably absent is any reference to officer drug use as a contributing factor to police malfeasance. Unlike earlier proposals to combat police corruption, the GAO did not recommend drug testing as a solution to police drug-corruption. Instead, it advocated better management practices, more training, and the implementation of community policing. From the GAO's perspective, the connection between drug use and drug corruption is simply not clear (25). While little evidence has been generated over the last two decades to support the original policy justifications (i.e., public safety, productivity, corruption, public trust), they continue to find favor with a contemporary audience: "Drug use is a concern because it can impair an officer's ability to function appropriately and effectively, because it heightens and potentiates the possibilities of corruption, because it represents an ethical and legal breach of trust, and because it corrodes the public's confidence in the police and their integrity" (Mieczkowski 2002, 189).

Political and Legal Contours

In this section, the political and legal forces shaping police drug testing policy are examined. Public sector unions have used the political process to push their drug testing agenda (Knowles and Riccucci 2001). Police unions, in particular, have worked multiple political channels to thwart unilateral management action on the issue. One way that unions have exerted their political will is through the direct lobbying of legislators. By way of example, the President of the Grand Lodge of the Fraternal Order of Police (FOP) communicated the organization's drug testing position to a key U.S. Senate Judiciary Committee member during the debates over drug testing (Carter 1988). Police unions have also used the collective bargaining process as a means for influencing drug testing

policies. A majority of large law enforcement agencies (63 percent) authorize collective bargaining for sworn officers (Reaves and Goldberg 1999). Collective bargaining is an especially important political tool for heavily unionized municipal police agencies (71 percent of municipal agencies engage in collective bargaining with officers while only 43 percent of sheriff's departments do the same). Policies that require sworn officers to submit to drug tests are usually mandatory subjects of collective bargaining; however, preemployment testing may not be a bargainable issue (Avery 2001). There are many union organizations that represent police personnel in the collective bargaining process including the American Federation of State, County, and Municipal Employees (AFSCME), International Union of Police Associations (IUPA), Service Employees International (SEIU), Communications Workers of America (CWA), American Federation of Government Employees (AFGE), and International Brotherhood of Teamsters (IBT) (Swanson, Territo, and Taylor 1998). Police organizations that operate independently of national unions, such as the Fraternal Order of Police (FOP) and Patrolmen's Benevolent Association (PBA), may also represent workers. The policy stances that these organizations have taken on employee drug testing are explored next.

Police unions have taken a public stand on various drug testing policies (Carter 1988, 129-142). Two themes run through the union positions: "1) they do not want a drug-free workplace at the expense of employee rights, and 2) they want employee drug use policies to support the rehabilitation model" (Carter and Stephens 1994, 114). A preference for strong procedural protections and treatment rather than punishment for those testing positive are views held by other unions (Seeber and Lehman 1989). From the union's standpoint, drug testing is "a disciplinary action, not a preventive program" (Carter and Stephens 1994, 114). Thus, there is a strong emphasis on protecting the due process rights of individual officers in all union pronouncements on the matter.

Unions largely agree with the need for preemployment testing (Carter 1988). Union support for applicant testing is best understood within the context of a larger drug testing strategy. The courts have placed few restrictions on the use of this testing strategy. As such, there is little reason to expend precious political capital on a fight that does not technically involve union members. The union “offers up” preemployment testing in hopes of gaining leverage on issues of greater importance to the membership. The same rationales hold for policies that require the screening of probationary officers. The formal status of the police trainee, that is, whether he/she is considered a sworn officer deserving union protection or not, determines the level of union opposition to the practice. The official status of probationary employees varies from jurisdiction to jurisdiction so there is no standard union position on these tests. In the end, police unions generally snipe at probationary testing policies rather than attack them in full force. Union officials believe that testing done during the screening and probationary processes significantly reduce drug use issues in the workforce, thereby lessening the need for widespread testing of existing workers (Carter 1988).

Testing after “serious incidents” draws the ire of police unions. They argue that mandatory tests following a motor vehicle accident or weapon discharge are based on a presumption of guilt where none is warranted. Police work may require an officer to engage in a high-speed chase or use force on a belligerent suspect. Why create a blanket drug test policy if there is no reason to believe that the officer was drug impaired at the time of the incident? Drug tests included as part of an annual medical examination receive grudging support from the unions (Carter 1988). Union concerns about these tests are assuaged if all individuals in the department or unit are subjected to the test and test takers have adequate notice as to the timeframe for testing. Unions do not usually contest return-to-duty or new assignment testing. The scope of testing is limited to a select class of individuals who may have a history of drug use or are being promoted to a position that is especially sensitive. “For cause” tests are also viewed in a more positive light by police unions. The FOP approves of drug

testing on a “case-by-case basis” if a supervisor has “reasonable suspicion” that an individual is drug impaired (Carter 1988, 142). Some unions believe that the supervisor should have “probable cause” before subjecting an officer to a test, a standard that requires more evidence than a “reasonable suspicion” test. The unions are especially antagonistic toward mandatory random testing policies. The FOP expressly states in its position statement that it is opposed to the practice (Carter 1988). Unions seem concerned with the lack of individualized suspicion inherent in such policies and the possibility that the testing may not be carried out in an equitable fashion. The battle over random screening has largely been engaged in the courts.

There is an excellent literature that explores the legal basis for police drug testing at a macro/national level (Siegel 1987a; Siegel 1987b; Faley, Kleiman, and Wall 1988; Dale 1990; Orvis 1994; Richman 1994; Hickey and Reid 1995; Mieczkowski 2002) and micro/state level (Boodt 1989; Morin 2000). The purpose here is to briefly highlight the most important judicial parameters that have been established to guide the practice of drug testing in law enforcement organizations after the *Skinner* and *Von Raab* decisions (see Chapter 3 for a detailed discussion of these landmark cases). The courts have dedicated most of their attention to cases involving individualized suspicion and random drug testing. The legal contours for each type of testing are discussed in turn.

Most federal and state courts have upheld drug testing policies that are predicated on a reasonable suspicion of officer drug use (Hickey and Reid 1995). In early drug testing cases, courts recognized that police officers had privacy rights that were protected by the Constitution (Mieczkowski 2002). Therefore, in order to subject an individual to a test, governments had to present compelling reasons for overcoming an officer’s legitimate privacy interests. Top state appeals courts (e.g., New Jersey) have reasoned that police officers have a diminished expectation of

privacy due to the dangerous nature of police work and the important responsibilities given to them (e.g., power to arrest) (Hickey and Reid 1995, 30-32). The threat to public safety from an impaired officer combined with the government's interest in deterring officer drug use creates a special need for suspicion based testing which trumps the officer's already reduced privacy interests.

While a consensus view about suspicion based testing now percolates through most court rulings, the same cannot be said about random drug testing. It appears that the U.S. Supreme Court has left the issue of random testing to lower courts (Orvis 1994). Unlike the "for cause" policies just described, random screening is undertaken without individualized suspicion. Unions have brought dozens of challenges in state and federal court against random drug testing policies. The New York City Patrolmen's Benevolent Association (PBA) actively fought the implementation of random testing for years (McKinley 1989). Eventually, after exhausting all its legal challenges in state court, a random testing program including every sworn officer from chief to patrol officer was instituted. The Boston Patrolmen's Association also challenged the department's random testing policy for all sworn and civilian officers (Crane 1990). The U.S. Supreme Court, in denying certiorari, upheld the First Circuit Court's ruling that random testing did not offend the Constitutional protection against illegal search and seizure in regards to officers who carry guns and engage in drug interdiction activities. Undeterred, Boston police initiated another lawsuit in state court claiming that the random testing policy violated privacy protections guaranteed under the state's constitution (Hickey and Reid 1995). In a rare win for labor, the Massachusetts Supreme Court ruled that abstract notions of public safety and integrity were not as compelling as protecting individual privacy rights guaranteed by the state constitution (33). Police unions in New Jersey successfully fought off random testing in their state court system until 1997 when the historically liberal Supreme Court of New Jersey changed directions on the issue (Morin 2000). It previously held that an officer's privacy interest outweighed

the government's interest when there was no evidence of a drug problem in the workforce. It now subscribes to the "special needs" reasoning formulated in *Skinner* and *Von Raab* to justify random testing. The courts are now more willing to accept random testing if the policy provides "detailed administrative safeguards that restrict agency discretion and protect individual privacy" (Hickey and Reid 1995, 35).

CHAPTER 5: METHODOLOGY

The convergence of important political, legal, and historical events created a fertile environment for the growth of drug testing in police organizations. What is missing is a theory-based understanding of what leads departments to adopt certain drug testing strategies. This then is the charge for the remainder of the paper. The chapter begins with a description of the data that are used in the analysis. From there, a model of public sector drug testing is constructed from propositions rooted in social control theory. The variables used to measure the social control concepts are described in detail. A series of testable hypotheses are then offered to guide the investigation. Reliability and validity issues and limitations in the research design are addressed in the final section.

Data

Data from the 1997 Law Enforcement Management and Administrative Statistics (LEMAS) survey were used in this study. LEMAS is a nationwide survey of all state and local police agencies in the United States. The survey consists of a series of questions about personnel, expenditures, operations, equipment, computers, policies, and programs (see Appendix A). The Bureau of the Census collects and processes the data on behalf of the U.S. Department of Justice's Bureau of Justice Statistics. The survey has been administered a total of five times (1987, 1990, 1993, 1997, and 1999). The wording of questions about agency drug testing policies have changed which each version of the survey. As such, it is not possible to study longitudinal trends on these issues. Questions about agency drug testing policies were discontinued altogether in the most recent version of the survey (1999), thus necessitating the use of the 1997 data set.

A total of 3,597 surveys were randomly distributed to state, local, and tribal law enforcement agencies from a universe of 18,778 agencies in the United States. The overall response rate was 95 percent (3,412 completed surveys) (Reaves and Goldberg 1999). The uncommonly high response rate instills a sense of confidence that the sample closely approximates the characteristics of the population.¹⁶ This investigation focuses on the most widely used general purpose local police structures – county police, county sheriff, and municipal police. State police, tribal police, and law enforcement organizations with special geographic jurisdictions (university campus, transit system, public housing, public buildings, parks and recreation, airports, and waterways) are excluded in an effort to focus on a single type of law enforcement organization at the local level of government. In some parts of the United States, sheriffs’ offices have limited general policing responsibilities. In these jurisdictions, the sheriff’s department may operate the jail and provide courtroom security. Departments that are not responsible for general policing (i.e., less than 10 percent of sworn staff respond to calls for service) are not included. For example, the Cook County Sheriff’s Office in Chicago, Illinois is not included in this study as only 402 of its sworn force of 5,600 (7.1 percent) respond to calls for service. A small number of departments with missing values were also dropped from the analysis. The final sample size used in the analysis is 1,988. All states are represented. The unit of analysis is the local police department. The data set was downloaded from the ICPSR website and analyzed using SPSS v10.0 statistical software.

Measurement of Variables

Dependent Variable

Black (1984) conceptualizes social control as a dependent variable, that is, as something that can be explained from one setting to another. In this study, the aim is to understand variation in a

single form of social control (employee drug testing) across law enforcement organizations. A growing body of sociological research identifies drug testing as a type of social control (Hecker and Kaplan 1989; Gerber et al. 1990; Zimmer and Jacobs 1992; Gilliom 1994; Borg and Arnold 1997; Borg 2000). One commentator suggests that drug testing is an example of an emerging trend found in modern societies – the adoption of compliance systems to control behavior (Horwitz 1990).

Compliance systems “establish standards for conformity and enforce these standards regardless of whether or not a deviant action has taken place” (250). Drug tests, environmental regulations, and building codes are all examples of government administered compliance systems. Horwitz predicts that organizations will rely more heavily on compliance strategies in the future since they “are easier to implement than alternatives, are efficient to administer, and do not require strong moral underpinnings” (250). In sum, there is solid theoretical basis for using drug testing as a dependent variable.

The LEMAS survey asks questions about a department’s drug testing program for two classes of individuals – job applicants for sworn positions and regular field/patrol officers. Departments indicate the types of drug testing programs that they authorize for each employee class. The choices are a) not tested, b) other, c) reasonable suspicion of use, d) random selection, and e) universal (all are tested). Responses to these dichotomous questions (yes/no) serve as the dependent variables. Not all questions are used in this study, however. The “other” category is not defined in the survey instrument. It could mean testing after an accident, discharge of weapon, or return to duty. It is simply not possible to know which of these “other” testing strategies the departments were responding to. As such, it is not retained. In addition, very few departments test applicants based on reasonable suspicion or in a random manner. These questions were also dropped. In the end, six dependent variables are used (two for job applicants and four for sworn officers) – job applicants not

tested, all job applicants tested, sworn officers not tested, sworn officers tested if reasonable suspicion of use, sworn officers tested on a random basis, and all sworn officers tested (see Table 5.1 for a summary of variables and coding). These questions capture the full range of policies that are permitted under recent case law. Additionally, the sequence of questions reflects increasing levels of organizational intrusiveness on worker privacy. In other words, organizations that subject employees to more frequent and intrusive drug tests are exercising greater levels of formal social control. At the low end of the continuum are departments that do not screen applicants and employees for drugs under any circumstances. These departments exhibit low levels of formal social control. Departments in the middle of the drug testing continuum typically require applicants to submit to drug tests but limit the circumstances that trigger tests for sworn officers (e.g., a manager suspects abuse). Agencies with the most comprehensive programs, often including universal and random testing of all job applicants and sworn officers, are characterized as having high levels of social control.

Independent Variables

The independent variables are organized around three sources of variation in social control theory – social distance, social status of officers, and the influence of third party actors (Black 1984; Black and Baumgartner 1993). The purpose here is to introduce the variables and their operationalization. A more detailed discussion of how these variables relate to social control theory is provided in the hypothesis section.

Social Distance. For Black (1976) the amount of social distance between people influences the type and intensity of social control that is used to suppress deviant behavior. Social distance is the composite of two dimensions – relational distance and cultural distance/diversity. Relational distance

is simply “the scope, frequency, and length of interaction between people” (41). Cultural distance is the amount of diversity among people in terms of tradition, religion, and language. Both aspects of social distance, relational and cultural distance, are incorporated into this study. Relational distance is measured by the number of full-time sworn officers in a police department on July 1997 (interval level variable). Cultural diversity is the percentage of sworn officers from racial/ethnic minority groups in the department. Borg (2000, 132-133) has developed a novel way for measuring the degree of diversity within an organization. In Borg’s model, 50 percent is regarded as the numeric value that would indicate a completely heterogeneous workforce (i.e., 50 percent white and 50 percent non-white). Each measure represents the extent of deviation from this theoretical point. Each variable ranges from 0 (completely homogeneous) to 50 (completely heterogeneous). Racial heterogeneity is calculated using the following formula: $H = [(-1) | .50 - x |] + .50$, where x = the reported percentage of white workers. Higher scores are associated with increasing racial diversity/heterogeneity. For example, a heterogeneity score (H) of 40 indicates a high level of diversity (40 percent of sworn officers are from a minority group). It is an interval level measure. Minority groups counted in the workforce diversity rate include American Indian, Asian/Pacific Islander, Black, and Hispanic. It is important to note that in several departments located in the southwest and southern regions of the country, ethnic and racial minorities actually predominate. In these departments, the racial heterogeneity score reflects the percentage of white officers on the force. Social control theory is less concerned with the race/ethnicity of the dominant group and more interested in the ratio of dominant to minority group members.

Social Status. The second set of independent variables represent the social status of employees. Social status “refers to the wealth and normative reputation” of individuals (Borg and Arnold 1997, 447). Social status is first operationalized as the starting salary for new officers

(interval variable). Salary is a proxy for respect. Lower salaries indicate that a department is not willing or able to fully support new officers. The high introductory salary is a recognition by management that new officers are valued by the department. Thus, new officers in high salary departments have greater social status than their counterparts in low salary departments. Social status is also measured by the department's commitment to employee counseling. It is conjectured that departments that value and respect their employees will have a counseling assistance directive. The presence or absence of an employee counseling policy is coded as a dummy variable. A negative response is the reference category.

Third Party Influence. As alluded to earlier, third parties play an influential role in the application of social control, "In some cases, they may be the deciding factor in how the issues in dispute are defined at the outset and in whether and how they are subsequently resolved" (Black and Baumgartner 1993, 96-97). The influence of two external actors on the propensity of police departments to use certain drug testing procedures is assessed in this study. Labor unions are important parties to disputes between management and workers. States that allow police unions to collectively bargain with managers would seem to be in a strong position to resist the institution of certain drug testing policies. The National Labor Relations Board has ruled in several private sector cases that drug testing is a change in work condition that necessitates collective bargaining with the union (Orvis 1994, 301). It is not uncommon for the drug testing policy to be included in the collective bargaining agreement negotiated with management. To illustrate, the collective bargaining agreement between the State of Delaware and the Delaware State Troopers' Association (July 1, 1997 to June 30, 1999) specifies who will be tested (pre-employment, random sampling of sworn officers, and manager suspicion), the procedure for testing (urinalysis, confirmation of positive screens), and the punishment for violating the drug testing policy (dismissal).

Civilian complaint boards are third parties that may also have an impact on police drug testing practices. External review boards are typically created in reaction to citizen displeasure with the police department. In a sense, it is a way to make the police more directly accountable to the citizenry (Walker and Katz 2002). Citizen oversight agencies can take on many roles. They may serve as an independent review of citizen complaints or they may monitor departmental policies and practices (373). By definition, they are instruments for controlling police behavior. In this regard, communities that use review boards may be positively disposed to other types of formal control over the police. Only large departments (over 100 sworn officers) were asked whether they had a civilian complaint board. Thus, the civilian complaint board variable only appears in models involving large departments. Aggregate models including all departments and small department models do not include this variable. All third party variables are coded as dummy variables with “no” as the reference category.

Control Variables

Three antecedent control variables are incorporated into the analysis. First, LEMAS divides local police departments into three categories – municipal police departments, county police departments, and county sheriff departments.¹⁷ Since county police make up a very small percentage of all law enforcement agencies (less than 5 percent), they were folded into the municipal police category. In most jurisdictions, the head of the county police agency is appointed, much like his/her counterparts in other municipal police organizations. In contrast, the leader of most sheriffs offices is elected. This variable is coded as a dummy variable with municipal/county police department as the reference category. There is no theoretical justification for postulating a relationship between type of department and intensity of employee drug testing.¹⁸ A second control variable was constructed to measure a police department’s propensity to test. In a sense, is there a culture of testing within the

department. LEMAS asks whether departments use nine different employee selection mechanisms including polygraph, intelligence, interview, and psychological among others. An additive scale was created based on departmental responses to each selection approach. This control was only incorporated into the models which assess the likelihood of job applicant testing. Third, the United States Supreme Court in *Von Raab* ruled that the public safety interests of the state outweigh the privacy rights of those individuals who carry guns and carry out drug interdiction duties. LEMAS includes several questions measuring the extent of police drug operations. One question asks police departments if they have primary responsibility within their jurisdiction for enforcing the state's drug laws. Since overwhelming majorities are responsible for enforcing drug laws, this question provides little differentiation among departments. A new variable was created to gauge the level of police drug operations. The percentage of full time officers working in drug interdiction units or serving on interagency drug task forces serves this purpose. It is an interval level measure. Proponents of drug testing argued that those involved in drug interdiction activities were at greater risk of future drug use (see *Von Raab*). Drug testing seems more likely in agencies that have created special units to fight the "war on drugs."

Table 5.1: Variable Description and Coding

Variable	Description	Attributes	Level of Measurement
Dependents			
Applicant Drug Testing: Universal	All applicants tested prior to employment	0=No 1=Yes	Dichotomous
Applicant Drug Testing: None	Applicants are not tested	0=No 1=Yes	Dichotomous
Sworn Officer Drug Testing: Universal	All officers are routinely tested	0=No 1=Yes	Dichotomous
Sworn Officer Drug Testing: Random	Officers are subject to random testing	0=No 1=Yes	Dichotomous
Sworn Officer Drug Testing: Suspicion	Officers may be tested if manager suspects drug use	0=No 1=Yes	Dichotomous
Sworn Officer Drug Testing: None	Officers are not tested	0=No 1=Yes	Dichotomous
Independents			
Size of Department	Number of sworn officers (natural log for large departments)	10-38,328	Interval
Racial Heterogeneity	Percentage of racial minorities in sworn ranks	0-50%	Interval
Starting Salary	Minimum salary for new officer	Measured in US dollars	Interval
Counseling Policy	Written policy directive on employee counseling assistance	0=No 1=Yes	Nominal/ Dichotomous dummy
Collective Bargaining	Officers authorized to bargain with management	0=No 1=Yes	Nominal/ Dichotomous dummy
External Review Board	Citizen complaint review panel (large departments only)	0=No 1=Yes	Nominal/ Dichotomous dummy
Antecedent Controls			
Type of Department	Department classification	0=Municipal/County Police 1=County Sheriff	Nominal/ Dichotomous dummy
Number of Job Applicant Tests	Number of applicant screening mechanisms not including drug testing	0-10	Categorical/Additive scale
Percentage of Officers in Drug Units/Task Forces	Percentage of all sworn officers serving full-time on drug enforcement units or interagency drug task forces	0-100%	Interval

Hypotheses

The following operational hypotheses summarize the expected relationships between employee drug testing, social distance, employee social status, and third party involvement.

Social control theory postulates that the social distance between actors in a dispute influences the type of social control that is used to address any given situation. In pre-modern societies, unacceptable behavior is typically handled through informal means such as through ostracism from the family or clan. As societies expand in size and diversity, the social connections between individuals thin. Modern societies come to rely upon more formal modes of social control, such as legal institutions and written policies, to settle disputes among individuals. On this point, Black wrote, “And in the midst of strangers, law reaches its highest level” (1976, 41). Several empirical studies (Comer and Buda 1996; Gomez-Mejia and Balkin 1987; Borg 2000; Murphy and Thornton 1992) and employer surveys (Hayghe 1991; Hartwell et al. 1996) have shown that larger organizations are more likely to test workers for drugs. However, these investigations do not look into the different types of drug testing programs that are actually used in organizations. In this study, it is hypothesized that larger departments are more likely to test and use screening strategies that are not based on individual suspicion. That is, large organizations will engage in blanket testing (universal, random), a stricter form of social control which does not take the individual’s behavior (visible impairment) into account.

H₁: As the size of the sworn workforce increases, the likelihood of having an employee drug testing program increases.

H₂: Larger police departments will adopt more drug testing policies that do not require individualized suspicion (universal, random) compared to smaller agencies.

Following this line of reasoning, we would expect to find greater amounts of formal social control in departments that have a more racially diverse workforce. In Black's terms, "Law is greater where culture is more diverse in the daily life of the people" (1976, 75). Alternatively, smaller departments with little racial diversity will control deviant behavior through informal means. This moves the discussion into the prickly area of racial discrimination. The racial makeup of police departments has been a concern for some time. Almost every national commission on policing has recommended the hiring of more minority police officers (National Advisory Commission on Civil Disorders 1968; Walker and Katz 2002). The dearth of minority officers has been cited in these studies as a reason for social unrest and poor police-community relations. Even as more minority officers have joined the ranks, vestiges of workplace discrimination may still remain. Racism has been found in the social relations among police officers (Skolnick 1994). A subtler form of discrimination may have replaced the more overt policies that blocked the hiring of minorities before landmark civil rights legislation of the 1960s.

Walker (2001) distinguishes between two forms of discrimination in policing. Systematic discrimination, the idea that all police officers in all departments routinely engage in discriminatory practices, is not usually found in modern police organizations (237). Instead, a contextual form of discrimination may exist where certain units or officers illegally discriminate against certain individuals (for example, only stop motorists who are black). There is virtually no research that looks at the discriminatory impacts of administrative practices within police organizations. A study of disciplinary practices in the Philadelphia Police Department found that the race of an officer was not a significant factor in explaining the likelihood of being charged with a disciplinary infraction or being found guilty (Hickman et al. 2001). The question here is whether drug testing, in practice, operates as a form of contextual discrimination. Social control theory offers that drug testing will be

more prevalent in organizations that are culturally diverse. The clash of cultures stretches social connections thereby necessitating more formal mechanisms of control. The expected relationship between cultural distance and drug testing is formalized in two hypotheses:

H₃: As the racial heterogeneity of a police force increases, the likelihood of drug testing increases.

H₄: Departments that have greater amounts of racial diversity will engage in more suspicionless drug testing.

The social status of individual disputants in relation to one another also impacts on the type of social control that is exhibited. Individuals with low social status are not only less likely to use formal means for combating the transgressions of higher level disputants, they are also subjected to more formal control from above (Black 1976). If individual officers are viewed with a higher level of status, departments are less likely to use formal means of control such as drug testing. Departments are also less likely to subject employees who are regarded with respect to the most intrusive forms of drug tests (random, universal). Entry-level salary and the existence of a written employee counseling policy serve as indicators of officer social status. There is some evidence that organizations that have a drug and alcohol abuse policy in place tend to have lower rates of reported drug and alcohol use (U.S. Department of Health and Human Services 1999b).

H₅: Organizations that pay lower starting salaries are more likely to screen workers for drugs.

H₆: Departments that do not have an employee counseling policy are more likely to test.

H₇: As the recognized social status of individual officers increases, the probability of drug testing without individualized suspicion decreases.

The impact of third parties in a dispute between labor and management is also likely to change the dynamics of social control. Two outside parties potentially play important roles in the

issue – labor unions and civilian review boards. Unions have a more direct influence on drug testing policy. In collective bargaining jurisdictions, they have a formal say in how drug testing will be carried out. The union plays a critical role in shaping the social control wielded by management. The union serves as a surrogate for the membership on the drug testing issue. In the language of social control, the union is a partisan intervener acting on behalf of the membership in negotiations with management (see Black and Baumgartner 1993). Civilian review boards, in contrast, serve as a proxy for citizen distrust with past departmental practices or policies. They do not operate as partisans for either party in the conflict (i.e., labor or management). Rather than acting on the parties directly, review boards influence the setting in which drug testing unfolds. Their presence alone indicates that the police need to be controlled.

The impact of collective bargaining on employee drug testing has been analyzed at a theoretical level but never tested empirically. Seeber and Lehman (1989) concluded that unions tend to resist all forms of drug testing. As such, union shops are more likely to have no testing at all. Job applicant testing poses an interesting dilemma for unions. The National Labor Relations Board has ruled that applicant testing is not a mandatory subject for bargaining (Denenberg and Denenberg 1996). In comparison to existing workers, job seekers have few legal options for resisting drug tests. It is assumed that unions will not waste political resources on issues: a) where the courts have consistently ruled against the union and b) that do not directly impact the rank and file. There is some history of union support for applicant testing (Carter 1988). As suggested earlier, unions may agree to applicant testing to gain leverage on other issues. Thus, applicant testing will be more common in departments that collectively bargain. Unions have offered the fiercest resistance to random testing proposals. Unions are more accepting of policies that are based on individualized suspicion (Seeber

and Lehman 1989). Departments with collective bargaining will have less random and universal testing and more “for cause” testing.

H₈: Agencies that require collective bargaining will report more frequent use of “no testing” policies for sworn officers than those that do not bargain.

H₉: Departments that engage in collective bargaining are more likely to test job applicants compared to departments that do not bargain.

H₁₀: Departments with collective bargaining are less likely to have testing programs that provide the greatest infringement on worker privacy (random, universal).

The existence of citizen review boards indicates a desire for greater citizen accountability over police actions. Departments with such boards operate under a spectre of mistrust. In this regard, drug testing would serve as another mechanism for controlling the police in these departments.

H₁₁: Departments that have external civilian review boards will have more rigorous drug testing programs.

The two final hypotheses relate to the role of control variables. Departments that use numerous applicant screening techniques may view drug testing as just another method for reaching an employment decision. Since the screening tests captured in this variable all relate to job applicants, it is not included in the sworn officer models. Since the United States Supreme Court specifically identified employment in a drug interdiction unit as a legitimate reason to conduct non-individualized drug testing, it is likely that departments will have these policies in place. The percentage of officers in drug units should only be important for sworn officer testing.

H₁₂: Departments with greater numbers of officers working in drug interdiction units and interagency drug task forces will conduct more random drug tests.

H₁₃: Departments that use many types of applicant screening techniques (i.e., a testing culture exists within the organization) will be more likely to screen job applicants for drugs.

The posited relationships between the variables are visually presented in Figure 5.1.

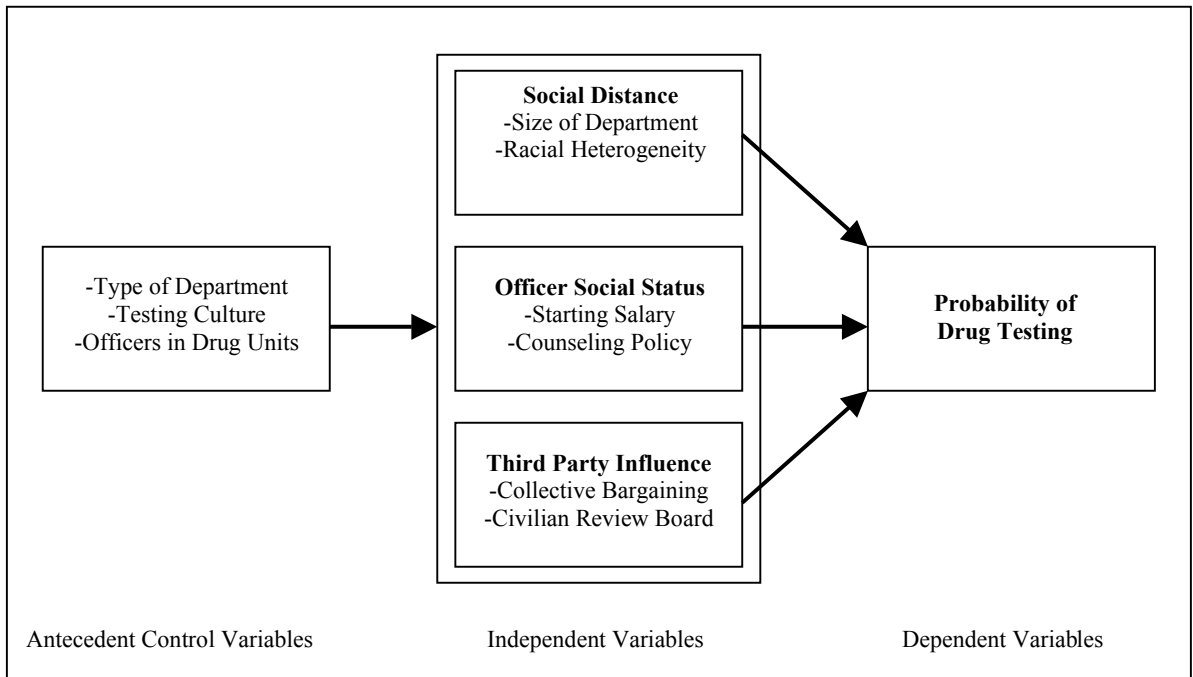


Figure 5.1: Conceptualization and Operationalization of Variables

Statistical Analysis

The primary statistical technique that is used to test the hypotheses is logistic regression. This is an appropriate technique when the dependent variable is dichotomous and the independent variables are measured at multiple levels (interval, categorical, dummy) (Pampel 2000). Bivariate analyses will also be conducted to ensure that regression (e.g., multicollinearity) and theoretical assumptions are met.

Validity and Reliability Issues

Validity is “the best available approximation to the truth or falsity of propositions, including propositions about cause” (Cook and Campbell 1979, 37). Since this analysis seeks to uncover the determinants (causes) of drug testing policies in police organizations, it is necessary to review the

possible threats to validity and steps taken to mediate the effects of these threats. Reliability refers to the level of error associated with the measure. A reliable measure produces the same result no matter the circumstances under which the measures are recorded. In a study which uses a cross-sectional design, validity is of greater concern to the researcher. Reliability is especially important in studies which depend on different raters to score a test (homogeneity), test-retest consistency (stability over time), and internal consistency of measures. The primary source of data in this study is a written questionnaire administered at a single point in time. Commentators have noted that survey research is generally weaker on validity and stronger on reliability than other forms of research (Babbie 1995, 274). By providing everyone with a standard set of questions, the written survey reduces the unreliability in observations made by the researcher. As such, the focus is properly placed on issues of internal, construct, and external validity.

By definition, internal validity is whether observed associations between two or more variables are in fact causal associations or are due to the effects of some other variable (Babbie 1995). Traditional threats to internal validity such as history, maturation, instrumentation, testing, compensatory equalization of treatments, statistical regression, mortality, and contamination do not seem to have a major impact on the hypothesized relationships. These threats are more likely in studies using other research designs (e.g., time series, before and after, and intervention and control groups). One potential threat to internal validity is selection bias. Is there a discrepancy in those agencies that were included and not included in the sample? This does not seem likely as the response rate was well over 90 percent. However unlikely, it is still possible that there is a pattern in the non-responses. A more potent threat is the issue of construct validity. This threat has to do with the logic of items which comprise measures of social constructs (Garson 2002). Three social control constructs are tested in this study – social distance, social status, and third party intervention. Social

distance is measured in two ways – the size of the department and diversity (heterogeneity) of the workforce. Other researchers have used similar variables to measure social distance (Borg 2000; Anderson et al. 1995; Borg and Arnold 1997). Replication of measures improves the validity of the construct. Social status has been included in prior studies, but operationalized in different ways. Borg and Arnold (1997) measured social status in a medical office in three ways – the number of prior cases of drug use, female to male staff ratio, and faculty to student ratio. They found that more women in the workplace led to more testing. Based on this finding, a gender heterogeneity variable was created and included in early data runs. In every case it was an insignificant factor and was dropped from the study. In the present study, social status is operationalized as starting salary and existence of counseling policy. For the social distance and social status constructs, the correlations between indicators within each construct will be analyzed to assess the level of convergent validity (a type of construct validity). Third party influence is a construct that seeks to weigh the differential impact of two external actors – labor unions and citizen review boards – on employer drug testing. Convergent validity is not expected since these actors do not have a theoretical connection. Finally, it is important to make a statement about the generalizability of the study findings to the population of all police organizations in the United States (external validity). The healthy response rate allows for generalization to police agencies at the time of data collection. That is, the findings provide an accurate picture of employee drug testing in 1997. Extreme caution should be used in generalizing to current police organizations.

Delimitations

Although not terminal to the study itself, this dissertation project is limited in several respects:

- The LEMAS survey has not asked the same questions about agency drug testing policies in consecutive survey administrations. The most recent version of LEMAS (1999) has omitted all drug testing questions. It is not possible to study longitudinal changes in police department drug testing practices nor learn of more recent uses of drug testing. The data only allows for a cross-sectional research design. These findings can only be generalized to departments in the year of data collection.
- The research methodology – written questionnaire – has its own shortcomings. Respondents do not have the opportunity to ask clarifying questions and simple yes or no questions may not capture the richness or nuance of social context. Departments cannot elaborate on specific elements of their testing policies. For example, it would be interesting to know the percentage of officers that are selected for random screens. It may be argued that the deterrent effect is far greater in a random program that tests half the workforce during a given year versus a program that tests ten percent. Also, respondents are not queried about the outcome of a positive drug screen. A policy that requires automatic dismissal for a first offense may operate differently than a policy that directs officers to EAP for treatment with the ultimate goal of returning the officer to duty.
- It is not possible to take into account state and local statute and court rulings that may address employee drug testing in the 2,000 jurisdictions included in this study. Public sector drug testing may be limited or encouraged by state and local law. For example, a law in Florida requires drug testing of all police applicants. New York state courts have established “for cause” testing as a management prerogative which may be exercised outside the collective bargaining framework. Vermont and Montana may prohibit the use of random drug testing

but allow other forms. Essentially, this creates a situation where an agency's drug testing program may be influenced by factors that are not included in the model. While most agencies are not bound by such laws, it does contribute a small amount of measurement error to the model.

- There are some early indications that the models are under-specified. Preliminary data runs do show a number of significant relationships among variables. However, the amount of pseudo-variance explained by the model remains below 20 percent. This leads one to conclude that important causal variables may be absent from the model. It is not possible to include variables that may have an important effect on the intensity of drug testing in a department. For example, a high profile case of police misconduct involving drugs may have precipitated a more rigorous testing program. A new police chief's leadership and management style may also impact on the level of drug screening.

CHAPTER 6: FINDINGS

The results of the empirical analysis are presented in three parts. In the first section, a univariate analysis is conducted for all variables in the model. The bivariate relationships between each pair of variables are reviewed in the second part. In section three, logistic regression models are presented for the six different drug testing strategies employed by police agencies. To better understand the operation of drug testing in practice, departments are grouped according to size. After all, how much does the New York City Police Department with its force of 38,000 officers have in common with the ten deputies in the Cibola County Sheriff's Department in Grants, New Mexico? Agencies with over 100 sworn officers are classified as "large" departments. "Medium" agencies have between 25 and 99 sworn personnel. "Small" departments contain 10 to 25 sworn officers. The classifications match those commonly reported in the police literature.

Univariate Analyses

The frequency of various drug testing policies in police organizations is reported in Table 6.1. The most frequently cited drug testing policy is universal screening of job seekers. Approximately 77 percent of all departments in the survey maintain these policies. Larger departments are more likely to test applicants than smaller departments. A small number of responding agencies (15 percent) indicate that applicants for employment are not tested under any circumstance. Again, the size of the workforce seems to influence testing policy with smaller agencies three times more likely to possess a no testing policy compared to larger departments. In contrast to the widespread adoption of universal applicant testing, a relatively low percentage of agencies favor the screening of all sworn officers (24.4 percent). Interestingly, larger departments are not more inclined to use universal screening. Random testing of sworn personnel is also infrequently found (24.4 percent). Larger agencies have a

greater likelihood of using random drug screens than smaller organizations. Approximately one-half of the police agencies report the use of reasonable suspicion testing. The positive relationship between agency size and proclivity to test again seems to hold up with this form of testing. A sizeable proportion of agencies (one in five) do not test existing officers.

Table 6.1: Job Applicant and Sworn Officer Drug Testing Policies By Size of Department

	All Departments		Large (100+)		Medium (25-99)		Small (10-24)	
Job Applicant								
<i>Universal</i>								
Yes	1,525	76.7%	612	87.2%	596	77.9%	317	60.8%
No	463	23.3%	90	12.8%	169	22.1%	204	39.2%
<i>Not Tested</i>								
Yes	303	15.2%	53	7.5%	107	14.0%	143	27.4%
No	1,685	84.8%	649	92.5%	658	86.0%	378	72.6%
Sworn Officer								
<i>Universal</i>								
Yes	486	24.4%	159	22.6%	193	25.2%	134	25.7%
No	1,502	75.6%	543	77.4%	572	74.8%	387	74.3%
<i>Random</i>								
Yes	485	24.4%	230	32.8%	162	21.2%	93	17.9%
No	1,503	75.6%	472	67.2%	603	78.8%	428	82.1%
<i>Suspicion</i>								
Yes	959	48.2%	404	57.5%	375	49.0%	180	34.5%
No	1,029	51.8%	298	42.5%	390	51.0%	341	65.5%
<i>Not Tested</i>								
Yes	409	20.6%	92	13.1%	149	19.5%	168	32.2%
No	1,579	79.4%	610	86.9%	616	80.5%	353	67.8%
	n = 1,988		n = 702		n = 765		n = 521	

Several summary points can be made at this point about drug testing policies in police agencies. First, job applicant testing is more common than sworn officer testing. Second, the size of the department appears to influence the likelihood of testing. Larger agencies are more likely than their smaller counterparts to implement universal applicant, random officer, and suspicion-based officer testing. Policies that disallow the testing of job seekers and sworn personnel are found more frequently in small departments. Third, testing based on individualized suspicion is preferred over blanket testing policies (universal and random).

Descriptive statistics for the nominal variables included in the analysis are provided in Table 6.2. Most law enforcement agencies maintain a written policy directive on employee counseling (67.2 percent). This is especially true for larger organizations. The likelihood of having a counseling policy diminishes significantly as the size of the department gets smaller. Large, bureaucratic organizations are more likely to use formal written directives convey agency policy. A majority of agencies permit collective bargaining for sworn personnel (57.8 percent). Less than half of departments with 10 to 24 police officers engage in collective bargaining. Civilian complaint review boards are uncommon, with only 14 percent of large departments reporting their use. Municipal and county police departments are represented in higher numbers than sheriff's departments (70.3 percent and 29.7% respectively).

Table 6.2: Descriptive Statistics for Nominal Variables By Size of Department

	All Departments		Large (100+)		Medium (25-99)		Small (10-24)	
Counseling Directive								
Yes	1,336	67.2%	586	83.5%	517	67.6%	233	44.7%
No	652	32.8%	116	16.5%	248	32.4%	288	55.3%
Collective Bargaining								
Yes	1,150	57.8%	435	62.0%	461	60.3%	254	48.8%
No	838	42.2%	267	38.0%	304	39.7%	267	51.2%
Civilian Review Board								
Yes	-	-	97	13.8%	-	-	-	-
No	-	-	605	86.2%	-	-	-	-
Type of Department								
Municipal PD	1,397	70.3%	485	69.1%	583	76.2%	329	63.1%
Sheriff's Office	591	29.7%	217	30.9%	182	23.8%	192	36.9%
	n = 1,988		n = 702		n = 765		n = 521	

Table 6.3 presents descriptive statistics for the continuous variables in the aggregate sample. The size of police departments is determined by the number of full-time, sworn officers employed by the department in 1997. The mean size of a police department in the entire sample is 190 officers.

The median size was much lower – 56 officers. In this case, the median provides a better estimate of the middle of the distribution. The mean is inflated due to the influence of four especially high outliers. The New York City Police Department (NYPD) has almost three times as many sworn officers as its closest peer. The NYPD has 38,328 officers while the Chicago Police Department trails with 13,271 officers. The Los Angeles Police Department and Los Angeles County Sheriff are the next largest departments with 9,423 and 8,021 officers respectively. These disproportionately high values serve as a notable contrast to the much smaller forces found in typical police departments throughout the United States (mode equals 10 officers). Dispersion measures are exceedingly high (standard deviation = 1,013; range = 38,318 officers). The high end outliers contribute to the particularly strong positive skew (28.93) and even stronger positive kurtosis (1,031.20).

Table 6.3: Descriptive Statistics for Continuous Variables in Aggregate Sample (n=1,988)

	Number of Sworn Officers		Racial Heterogeneity	Minimum Entry Level Salary	Number of Applicant Tests	Officers in Drug Units
	Unlogged	Logged				
Central Tendency						
Mean	189.91	4.15	.11	\$26,511.27	7.58	.05
Median	56.00	4.03	.07	\$25,900.00	8.00	.04
Dispersion						
Standard Deviation	1,013.23	1.25	.12	\$6,673.01	1.47	.07
Range	38,318.00	8.25	.50	\$50,148.00	10.00	1.00
Interquartile Range	120.00	1.83	.16	\$8,850.75	2.00	.05
Symmetry/Peakedness						
Skewness	28.93	.71	1.28	.67	-1.35	6.50
Kurtosis	1,031.20	.52	1.00	.73	2.78	63.33

In light of the high positive skew in the size of police departments, a logarithmic transformation was performed to make the distribution more symmetric. Certain statistical

procedures, such as ordinary least squares regression, assume that all variables are normally distributed. Others, including logistic regression, do not require normality in these distributions. The results of the transformation are promising (see Figure 6.1 and 6.2 for a visual comparison of unlogged and logged distributions). First, the measures of central tendency are more closely aligned than those in the untransformed distribution. The mean is 4.15 and the median 4.03. The dispersion statistics also indicate a more tightly concentrated distribution of scores. The standard deviation is 1.25. This indicates a modest variation of scores around the mean. The range of scores is under 9.0 and the middle 50 percent of sample scores fall within 1.83 units. A skewness statistic of .71 indicates a rather stunning improvement in the symmetry of the distribution. The transformation also reduced the peakedness to a much more respectable level (.52). A visual inspection of the logged frequency distribution in Figure 6.2 shows that it closely approximates a normal distribution.

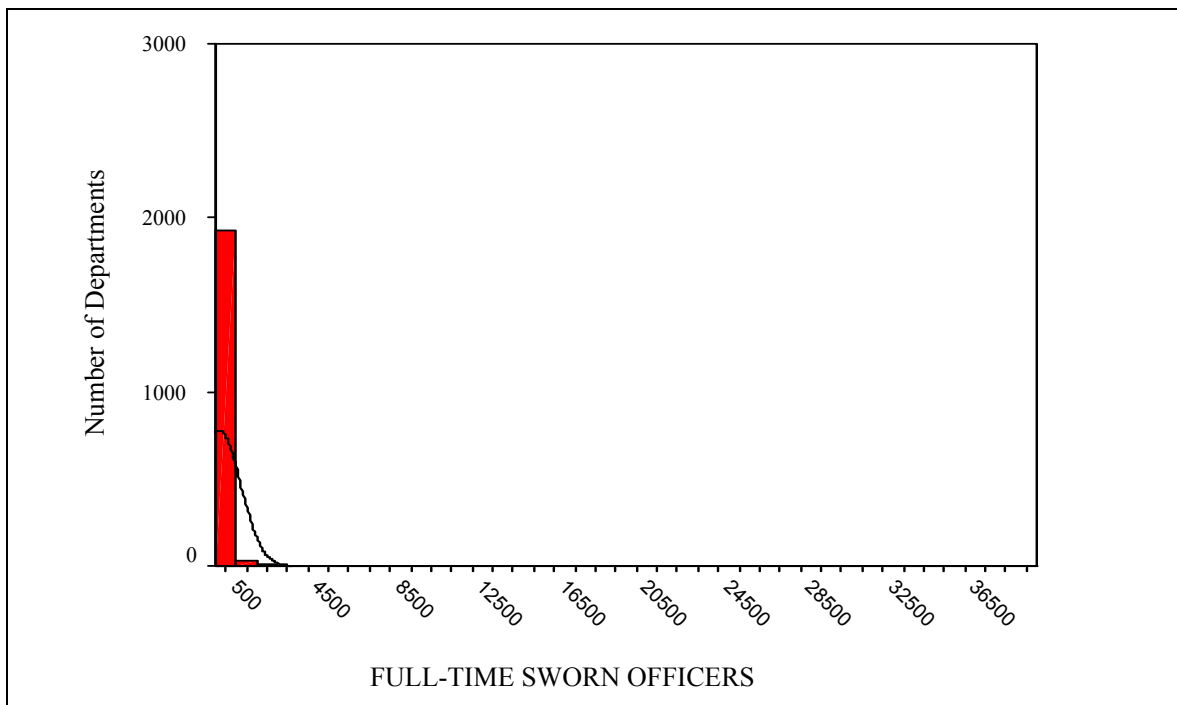


Figure 6.1: Histogram of Sworn Officers in Departments (Unlogged)



Figure 6.2: Histogram of Sworn Officers in Departments (Logged)

The next continuous variable is the starting salary for new recruits. The average entry-level salary for a police officer in the aggregate sample is \$26,511. The standard deviation is \$6,673. There is an unexpectedly wide range of starting salaries (range=\$50,148). New officers earn more than \$50,000 in five California communities (Santa Clara, Fremont, Berkeley, Haywood, and Vallejo). On the opposite end of the salary scale are police and sheriff's departments in rural Texas and Louisiana (e.g., Elsa Police Department in Texas pays new officers \$9,276 per annum). The distribution of salaries neatly approximates a normal distribution. There is a small positive skew (.67) and a slightly raised peak (kurtosis=.73).

The next variable measures the racial heterogeneity of police departments. On average, about 11 percent of the sworn workforce is from a minority groups. Some care has to be taken in interpreting the racial heterogeneity results. Several departments in upstate New York (Troy and

Oswego) have no racial minorities in the sworn ranks. These departments score low on the racial heterogeneity measure. However, there are several departments in the southwest United States (Laredo and Brownsville, TX) which almost exclusively employ racial minorities. These departments also receive low racial heterogeneity scores. It is also important to note that there is no racial heterogeneity in 25 percent of all police departments. The highest score (50 percent) is given to departments with a force that is evenly split between whites and non-whites. The interquartile range indicates that half of the departments are within 16 percent of each other. The small positive skew indicates that the preponderance of police departments are located on the low end of the racial heterogeneity scale.

The average number of applicant tests is 7.58 indicating that most departments use a wide array of techniques to screen job applicants. The scores are tightly packed around the center of the distribution leading to a moderately peaked distribution (kurtosis = 2.78). Approximately 5 percent of full-time sworn officers work in drug units or task forces. Almost one-quarter of all departments report that they have no officers serving in these specialized units. A strong positive skew (6.50) and elevated kurtosis (63.33) indicates a bunching of scores near the bottom of the distribution.

Descriptive statistics for interval level variables in the sample of large departments (over 100 officers) are offered in Table 6.4. There are several important points of comparison between the earlier reported aggregate sample and the large department sample on these variables. First, logging the number of sworn officers results in a marked improvement in the symmetry and peakedness of the distribution. This was also the case for the aggregate sample. Second, large departments tend to be more racially diverse than all other departments combined. On average, officers from minority groups comprise 17 percent of sworn personnel (6 percent higher than the full sample). Third, the

average starting salary is almost \$2,000 higher than departments in the total sample. Fourth, the small standard deviation (1.17), negative skew (-2.26), and elevated kurtosis (10.09) indicate that there is not much variability around the high number of number of applicant tests (8.13) conducted by large departments. Fifth, there is little difference between the aggregate and large departments samples in the percentage of officers working in drug units.

Table 6.4: Descriptive Statistics for Continuous Variables in Large Department Sample (n=702)

	Number of Sworn Officers		Racial Heterogeneity	Minimum Entry Level Salary	Number of Applicant Tests	Officers in Drug Units
	Unlogged	Logged				
Central Tendency						
Mean	469.04	5.52	.17	\$28,429.81	8.13	.04
Median	189.50	5.24	.14	\$27,812.00	8.00	.04
Dispersion						
Standard Deviation	1,669.81	.84	.12	\$6,728.80	1.17	.03
Range	38,228.00	5.95	.50	\$45,048.00	10.00	.28
Interquartile Range	219.25	.96	.16	\$8,715.50	1.00	.03
Symmetry/Peakedness						
Skewness	17.85	1.67	.76	.75	-2.26	1.97
Kurtosis	384.45	3.75	-.15	.85	10.09	10.69

Continuous variables from the mid-sized department sub-sample (25 to 99 officers) are presented in Table 6.5. The average size of a department is 52 officers. The symmetry and peakedness statistics for the distribution of department sizes are approximately normal. However, to ensure a level of consistency with the earlier samples, a logarithmic transformation of the sworn officer variable was also tested. The transformation provides a marginal improvement in symmetry matched by a flattening out of the distribution. While the logged variable does not provide the benefits that were seen with the aggregate and large department samples, it does not produce

deleterious effects either.¹⁹ As such, the logged variable was retained for all subsequent analyses of mid-sized departments. On each of the remaining variables (racial heterogeneity, salary, number of applicant tests, and officers in drug units), medium departments recorded lower scores than larger departments. As an aside, it turns out that some of the most racially diverse mid-sized police departments are in the south. Four of the five highest racial heterogeneity scores were recorded in South Carolina (Fairfield County Sheriff’s Department, Orangeburg Department of Public Safety, Bennetsville Police Department, and Clarendon County Sheriff’s Department). Departments in Florida and Alabama also had relatively high diversity levels.

Table 6.5: Descriptive Statistics for Continuous Variables in Medium Department Sample (n=765)

	Number of Sworn Officers		Racial Heterogeneity	Minimum Entry Level Salary	Number of Applicant Tests	Officers in Drug Units
	Unlogged	Logged				
Central Tendency						
Mean	51.99	3.87	.08	\$26,860.01	7.64	.04
Median	48.00	3.87	.05	\$26,227.00	8.00	.03
Dispersion						
Standard Deviation	21.16	.40	.10	\$6,492.19	1.34	.05
Range	74.00	1.38	.49	\$39,852.00	10.00	.50
Interquartile Range	33.00	.68	.10	\$9,381.00	2.00	.04
Symmetry/ Peakedness						
Skewness	.62	.10	1.87	.47	-1.31	3.32
Kurtosis	-.72	-1.14	3.59	-.03	2.94	20.88

Table 6.6 provides the final descriptive statistics for small departments (10 to 24 officers). The average department in this sub-sample has 16 sworn officers. The mean racial heterogeneity score is 7 percent. This average is a bit deceiving as a majority (57.8 percent) of small departments are racially homogeneous (median of 0). The highest and lowest entry-level salaries in the entire

dataset were recorded in small departments. The East Hampton Village Police Department, located in a tony section of Long Island (NY), starts officers at \$59,424 per year. This is \$50,000 more than the pay offered to Elsa Police Department (TX) officers. Approximately 55% of small departments do not assign officers to special drug units.

Table 6.6: Descriptive Statistics for Continuous Variables in Small Department Sample (n=521)

	Number of Sworn Officers		Racial Heterogeneity	Minimum Entry Level Salary	Number of Applicant Tests	Officers in Drug Units
	Unlogged	Logged				
Central Tendency						
Mean	15.92	2.73	.07	\$23,414.15	6.74	.06
Median	16.00	2.77	.00	\$22,788.00	7.00	.00
Dispersion						
Standard Deviation	4.23	.27	.12	\$5,694.84	1.61	.12
Range	14.00	.88	.50	\$50,148.00	9.00	1.00
Interquartile Range	8.00	.51	.01	\$7,834.50	2.00	.07
Symmetry/Peakedness						
Skewness	.23	.11	1.97	.91	-.80	4.39
Kurtosis	-1.11	-1.18	3.31	2.75	.97	24.21

Bivariate Analyses

It is important to study the correlation between variables for several reasons. First, it provides an initial indication of whether the independent and dependent variables are moving together in a hypothesized manner. In this way, bivariate correlation provides an initial check as to the strength and direction of the predicted relationship between variables. Second, correlation is useful in detecting multicollinearity between independent variables. If independent variables are closely associated, it is extremely difficult to determine which is having a true effect on the dependent.

Menard (1995, 66) warns that high levels of collinearity ($R^2 \geq .80$) may cause problems in the multivariate model (i.e., produce coefficients that are unreasonably large, have high standard errors, and do not achieve statistical significance). Third, the relationships between dependent variables may be analyzed to detect incongruous responses. For example, one expects to see a strong negative correlation between universal testing policy for job applicants and a “no testing” policy for applicants. That is, if a department indicates that it does test all job seekers, it should also say that it does not have a “no testing” policy. In a sense, bivariate correlation serves as a diagnostic test for determining whether respondents understand the survey questions. Bivariate analyses focusing on the three issues just described (hypothesized relationships between independent and dependent variables, multicollinearity, and consistency of responses) are conducted for the aggregate sample and three sub-samples.

All bivariate relationships are analyzed using Pearsonian correlation. This is a technique that measures the linear relationship between two variables. It typically requires variables measured at the interval level. However, correlation may be used in a limited number of circumstances with other types of variables. Stockburger (1996) argues that correlation coefficients may be correctly interpreted for dichotomous variables because the “interval property is assumed to be met for these variables” (Stockburger 1996). Based on this argument, dichotomous and interval variables are included in all correlation matrices.²⁰ To ensure that the correlation coefficients accurately reflect the association between variables, crosstabulations (with attendant measures of association) were run on most bivariate relationships (nominal by nominal and nominal by interval). In every case, the measures of association (phi for the nominal by nominal relationships and eta for the nominal by interval) matched the Pearson’s r reported in the correlation matrix. As such, the dichotomous dummy variables are included with the interval level variables in the correlation matrices.

The bivariate relationships between all variables in the aggregate sample are presented in Table 6.7 (see Table 6.8 for a description of variables in the correlation matrix). It appears that many of the bivariate relationships move in the predicted manner. As anticipated, larger organizations are more likely to possess an applicant drug test policy ($r=.24, p<.01$) as well as random (.18) and suspicion-based (.17) testing policies. Smaller agencies are also more likely than larger ones to report that applicants (-.21) and officers (-.18) are not tested. All correlations are moderately weak, but the signs are in the expected direction. One relationship was not predicted. There is a weak negative correlation between department size and universal officer testing ($-.05, p<.05$). The racial heterogeneity variable also interacts with the drug testing variables in an expected manner. As racial diversity increases within an organization, there is a greater likelihood of universal applicant (.14) and random officer (.21) testing. Racially diverse agencies are less likely to have a “no testing” policy for applicants (-.14) and officers (-.14). There is a negative correlation between salaries and universal officer and random officer testing.

In contrast to expectations, higher entry level salaries are associated with more *applicant* testing. However, higher salaries also correlate with less *officer* testing. Departments with an employee counseling directive are more inclined to test applicants and sworn personnel across the board. The relationship between counseling directive and drug testing runs counter to the one hypothesized. This creates some doubt about the premise made earlier – that the presence of a counseling policy indicates greater employee social status. In fact, it may mean the opposite. The last of the dependent/independent dyads involves collective bargaining. Collective bargaining is not associated with applicant testing in the aggregate sample. There is a relationship between these variables for sworn personnel. Departments which authorize bargaining for workers are less likely to possess universal officer (-.12) and random officer (-.24) testing policies. Reasonable suspicion

testing appears to be more popular in agencies with collective bargaining (.09). This lends support to the proposition that unions support testing policies based on individual suspicion but fight blanket testing. Of final note, it seems that Sheriff's department, a control variable in the study, correlates with several of the dependent drug testing variables. Compared to their police counterparts, sheriff's departments tend to have less drug testing in most cases. It will be interesting to see if this finding holds up in the multivariate models.

Table 6.7: Correlation Matrix for All Law Enforcement Agencies (n=1,988)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1.00													
2	-.77**	1.00												
3	.26**	-.22**	1.00											
4	.12**	-.17**	-.12**	1.00										
5	.19**	-.29**	-.31**	.06**	1.00									
6	-.44**	.61**	-.29**	-.29**	-.49**	1.00								
7	.24**	-.21**	-.05*	.18**	.17**	-.18**	1.00							
8	.14**	-.14**	.03	.21**	.04	-.14**	.42**	1.00						
9	.06**	-.04	-.11**	-.18**	.13**	.04	.28**	.03	1.00					
10	.15**	-.12**	-.01	.07**	.13**	-.13**	.33**	.07**	.23**	1.00				
11	.02	.01	-.12**	-.24**	.09**	.09**	.10**	-.12**	.52**	.15**	1.00			
12	-.20**	.13**	.09**	.01	-.17**	.05*	-.03	-.03	-.33**	-.18**	-.26**	1.00		
13	.21**	-.15**	-.06*	-.02	.17**	-.08**	.36**	.02	.43**	.30**	.30**	-.36**	1.00	
14	-.08**	.06**	.02	.07**	-.04	.03	-.08**	.05*	-.12**	-.08**	-.12**	.11**	-.10**	1.00

Notes: * $p < .05$, ** $p < .01$, two-tailed tests.

Table 6.8: Correlation Matrix Variables

#	Variable Description and Coding
1	Applicant Testing-Universal (No=0, Yes=1)
2	Applicant Testing-Not Tested (No=0, Yes=1)
3	Officer Testing-Universal (No=0, Yes=1)
4	Officer Testing-Random (No=0, Yes=1)
5	Officer Testing-Suspicion (No=0, Yes=1)
6	Officer Testing-Not Tested (No=0, Yes=1)
7	Size of Department (Logged Number of Sworn Officers)
8	Racial Heterogeneity
9	Minimum Salary for Newly Sworn Officer
10	Counseling Policy (No=0, Yes=1)
11	Collective Bargaining (No=0, Yes=1)
12	Type of Agency (Municipal/County Police Department=0, Sheriff's Office=1)
13	Number of Applicant Tests
14	Percentage of Officers in Drug Units
15	Civilian Complaint Review Board (No=0, Yes=1) (For Large Departments Only)

Collinearity is evident among independent variables in the aggregate sample. In fact, most dependent variables are associated with one another. There are nine correlations with coefficients in the moderate range (.30 to .52). However, none of these relationships poses a significant threat to the multicollinearity threshold identified above. The strongest linear relationship is between collective bargaining and minimum salary. Higher salaries are found in agencies with collective bargaining. Another interesting correlation involves department size and racial heterogeneity (.42). It seems reasonable to believe that larger departments, which are often located in more populous areas, would attract a more racially diverse workforce.

The final piece of bivariate analysis involves a look at the correlations between dependent variables. There are positive and inverse relationships built into the drug testing questions. For example, if you respond affirmatively to one question, you should respond in the negative to a follow-up question. Two correlations may serve as ways to test the logical consistency of responses. Conforming to expectations, there is a strong, negative correlation (-.77) between universal applicant testing and a no testing policy for applicants. Agencies that test all applicants do not report that they do not test anyone. It is not a perfect correlation since a small percentage of responding agencies indicated that they conduct random or suspicion-based tests of job seekers. There is a moderately strong, positive correlation between (.61) “not testing” policies. Agencies that do not test applicants are more likely to forgo testing of officers too. On the surface, both of these correlations seem to indicate that respondents understood the survey questions.

The correlation matrix for the large department sub-sample is presented in Table 6.9. The correlations between the social distance variables (department size and racial heterogeneity) and drug testing variables largely melt away in large departments. Not all relationships disappear, however.

There are modest, positive bivariate correlations between social distance measures and random drug testing. The minimum salary variable emerges as an important correlate with drug testing. As predicted, increasing salaries are associated with less applicant (-.23, $p < .01$), universal officer (-.21), and random officer (-.21) testing. Whereas the presence of an employee counseling policy was associated with more testing in the aggregate sample, all correlations involving counseling are non-significant in large departments. Collective bargaining is a significant correlate with five of the six drug testing variables. The addition of the civilian review board variable to the correlation matrix provides disappointing results. It was hypothesized that the existence of a civil complaint review board would indicate distrust of law enforcement and result in greater efforts to control the police (through the imposition of more rigorous drug testing). Civilian review board is only marginally associated with random drug testing (.08, $p < .05$). In sum, salary and collective bargaining displace the social distance variables as the most important correlates of employee drug testing in large law enforcement organizations.

Table 6.9: Correlation Matrix for Large Law Enforcement Agencies (n=702)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1.00														
2	-.75**	1.00													
3	.18**	-.14**	1.00												
4	.14**	-.14**	-.12**	1.00											
5	.08*	-.17**	-.33**	.05	1.00										
6	-.32**	.45**	-.21**	-.27**	-.45**	1.00									
7	.07	-.08*	-.08*	.19**	.05	-.08*	1.00								
8	.06	-.04	-.05	.16**	.00	-.04	.42**	1.00							
9	-.23**	.19**	-.10**	-.21**	-.01	.23**	.04	.02	1.00						
10	-.01	-.02	.01	.07	-.01	-.03	.15**	.03	.10**	1.00					
11	-.16**	.15**	-.12**	-.22**	.05	.20**	.00	-.06	.49**	.09*	1.00				
12	-.01	.02	.21**	-.02	-.12**	-.10*	.03	-.08*	-.29**	-.13**	-.24**	1.00			
13	.01	-.03	-.07	.02	.02	.06	.12**	.04	.27**	.18**	.14**	-.28**	1.00		
14	.06	-.05	.04	.07	.10**	-.08*	-.10**	.05	-.04	.02	-.04	-.17**	.04	1.00	
15	-.03	-.01	-.03	.08*	-.06	.05	.37**	.23**	.05	.00	.07	-.14**	.03	.02	1.00

Notes: * $p < .05$, ** $p < .01$, two-tailed tests.

Concerns about multicollinearity and logical consistency of responses are assuaged through a careful review of the correlation coefficients in the large department sub-sample. There are three

moderate correlations between independent variables. Larger departments are associated with higher levels of racial heterogeneity (.42, $p < .01$). Entry-level officers command higher salaries in organizations that permit collective bargaining (.49). Counseling policies are more likely in larger departments (.37). Each of these correlations is well below the multicollinearity standard ($R^2 \geq .80$). Dependent variable responses also appear to be moving in expected ways. By way of example, a “yes” response to the question that asks whether officers are “not tested” is negatively associated with “yes” responses to universal (-.21), random (-.27), and suspicion-based (-.45) testing. In simpler terms, if you indicate that you do not test officers, you are more likely to report that you do not test them under specific circumstances (universal, random, or suspicion). From this, it can be surmised that respondents are answering the questions with some level of consistency.

The bivariate correlations for medium sized departments are offered in Table 6.10. Several associations deserve mention. In contrast to the aggregate and large department samples, department size is not an important correlate of drug testing. In its place, racial heterogeneity emerges as a significant correlate to five of the six drug testing variables. All correlations are in the expected direction; however, the strength of these associations is quite modest (.08 to .15). Minimum salary and collective bargaining continue to track with the drug testing variables in postulated ways. Both have a moderate, negative relationship with random testing. Multicollinearity does not appear to be a major issue with this sub-sample, although the highest correlation between independents ($r = .55$, minimum salary and collective bargaining) is recorded here. It is still well below the tolerance standard. Finally, mid-size departments appear to provide reasonably consistent answers. The high negative correlation (-.76) between universal applicant testing and no applicant testing variables gives credence to this finding.

Table 6.10: Correlation Matrix for Mid-Sized Law Enforcement Agencies (n=765)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1.00													
2	-.76**	1.00												
3	.24**	-.20**	1.00											
4	.06	-.13**	-.10**	1.00										
5	.19**	-.29**	-.34**	.01	1.00									
6	-.39**	.56**	-.29**	-.26**	-.48**	1.00								
7	.07*	-.04	-.02	.00	.02	-.04	1.00							
8	.08*	-.11**	.10**	.15**	-.01	-.10**	.17**	1.00						
9	.09*	-.05	-.13**	-.26**	.13**	.06	.13**	-.09*	1.00					
10	.08*	-.04	-.04	.00	.11**	-.05	.18**	-.01	.19**	1.00				
11	.07	-.03	-.13**	-.31**	.10**	.10**	.04	-.19**	.55**	.13**	1.00			
12	-.25**	.16**	.05	.04	-.18**	.05	-.08*	-.04	-.37**	-.20**	-.29**	1.00		
13	.13**	-.11**	-.11**	-.08*	.17**	-.01	.15**	-.10**	.40**	.21**	.31**	-.46**	1.00	
14	-.05	.04	.08*	.12**	-.07	-.01	.02	.20**	-.19**	-.03	-.18**	.16**	-.13**	1.00

Notes: * $p < .05$, ** $p < .01$, two-tailed tests.

The correlations between variables in the small agency dataset are reproduced in Table 6.11. In line with the mid-sized agencies, these relationships are fairly weak, but usually operate in the hypothesized direction. The number of officers is only correlated with one testing variable – universal applicant (.11, $p < .05$). The influence of collective bargaining also appears diminished in small departments. Collective bargaining has a weak, inverse relationship with universal officer testing (-.11, $p < .05$) and a slightly stronger relationship with random testing (-.22, $p < .01$). Other factors seem to be more closely linked to drug testing. For example, the racial composition of the workforce is positively correlated with universal and random officer testing. Employee counseling directive shows a positive association with universal applicant and suspicion-based testing, although this relationship continues to express itself in a manner contrary to expectations. Multicollinearity and logical consistency of responses do not present as matters of serious concern in the small agency sub-sample. All bivariate correlations among independent variables remain below .50. Correlations between dependent variables are in the anticipated direction and show appropriate levels of strength.

Table 6.11: Correlation Matrix for Small Law Enforcement Agencies (n=521)

1	1.00													
2	-.77**	1.00												
3	.38**	-.33**	1.00											
4	.09*	-.21**	-.15*	1.00										
5	.18**	-.31**	-.23**	.06	1.00									
6	-.49**	.70**	-.41**	-.32**	-.50**	1.00								
7	.11*	-.08	.00	.01	.06	-.04	1.00							
8	.08	-.12**	.09*	.21**	-.03	-.16**	.00	1.00						
9	.10*	-.03	-.06	-.20**	.15**	.00	.14**	-.17**	1.00					
10	.14**	-.08	.03	.01	.12**	-.14**	.07	-.13**	.17**	1.00				
11	.04	.02	-.11*	-.22**	.08	.07	.12**	-.25**	.49**	.16**	1.00			
12	-.29**	.17**	-.02	.03	-.19**	.15**	-.10*	.03	-.32**	-.19**	-.23**	1.00		
13	.23**	-.09*	.04	-.16**	.14**	-.05	.11*	-.25**	.44**	.22**	.39**	-.35**	1.00	
14	-.10*	.08	-.02	.08	-.05	.04	-.12**	.05	-.10*	-.10*	-.13**	.19**	-.09*	1.00

Notes: * $p < .05$, ** $p < .01$, two-tailed tests.

Multivariate Analyses

The multivariate section includes an analysis of 24 logistic regression models – six drug testing policies (applicant-universal, applicant-not tested, officer-universal, officer-random, officer-suspicion, and officer-not tested) for each of the four samples (aggregate, large, medium, and small departments). The first step in logistic regression is to evaluate the fit of the model. In other words, to determine how good the model is working. Several techniques are used in the present analysis to evaluate the overall model fit. The -2 log likelihood ($-2LL$) statistic is “an indicator of how poorly the model fits with all the independent variables in the equation” (Menard 1995, 20). Higher values indicate that the model is not efficient at predicting the dependent variable. A second determinate of model fit is chi-square. It is analogous to the F test in multiple regression. It tests the null hypothesis that all population logistic regression coefficients, with the exception of the intercept, are zero ($\beta_1 = \beta_2 = \dots = \beta_k = 0$). Another common and somewhat controversial approach for assessing the model is to calculate the amount of pseudo-variance in Y that is explained by the independents. In this study, Nagelkerke’s R^2 is offered as a way to measure the overall strength of the relationship. The Hosmer and Lemeshow Goodness-of-Fit Test is another technique for determining whether the logistic model

is a good fit. If the Hosmer and Lemeshow statistic is significant at .05, we reject the null hypothesis that there is no difference between the observed and predicted values of the dependent (Garson 2002). Since we seek models that provide a good fit to the data, one hopes that the Hosmer and Lemeshow test does not achieve statistical significance. Lastly, model fit is also assessed by looking at the model's ability to accurately classify cases.

The second goal in logistic regression is to evaluate the individual coefficients. Unlike multiple linear regression, interpretation of coefficients in logistic regression is less intuitive. The unstandardized logit coefficient represents the logged odds of Y resulting from a unit change in X. This holds little practical appeal. As such, the coefficients will be interpreted largely on the basis of their statistical significance and direction. This investigation is most interested in learning whether the independent variables contribute to the explanation of certain drug testing policies in hypothesized directions. The Wald statistic, an analog for the *t*-test in ordinary least squares regression, is the standard tool for determining the statistical significance of individual coefficients in logistic regression. It tests the null hypothesis that $b=0$ in the population. For the aggregate sample, an additional significance test, the Bayesian Information Criterion (BIC), is also used. BIC is a technique that is helpful in weeding out variables that do not contribute significantly to the overall model. The sign before the logit coefficient is also a matter of great interest, especially when testing hypotheses. It indicates whether the effect of the independent on the dependent is positive or negative.

The logistic regression models for the aggregate sample of law enforcement agencies ($n=1,988$) are presented in Table 6.12. The columns represent the six drug testing policies most frequently found in police organizations (dependent variables). The rows contain the social control constructs (social distance, officer social status, and third party influence) that have a hypothesized

connection to drug testing. Control variables are included beneath the social control variables. The population logistic regression equation contains eight parameter estimates (including the intercept/constant). The equation is: $\text{logit}Y = \alpha + \beta_1 \ln X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon$, where Y is the likelihood of drug testing, $\ln X_1$ is the number of full-time sworn officers in a police department, X_2 is the racial heterogeneity of the police force, X_3 represents the starting salary for new officers in dollars, X_4 is a dummy variable noting the presence of a policy on employee counseling, X_5 indicates that collective bargaining is authorized, X_6 is a dummy variable for sheriff's department, X_8 alternately refers to the number of applicant drug tests or percentage of officers serving in drug units. The sample model for universal applicant testing (with estimated coefficients) is: $\text{logit}Y = -.681 + .454X_1 + 1.380X_2 - .00004X_3 + .196X_4 - .176X_5 - .981X_6 + .179X_7 + e$.

The logistic regression models perform moderately well with these data, with some models working better than others. The model chi-squares are all statistically significant ($p < .01$) indicating that the inclusion of the independent variables significantly improves the predictive capacity of the model. Hosmer and Lemeshow Goodness-of-Fit tests are not significant, a further indication that the models are working as expected. The collective strength of associations within each model, measured by Nagelkerke R^2 , varies by testing strategy. Variable associations are strongest for random officer ($R^2 = .190$) and universal applicant testing ($R^2 = .166$). In contrast, there is very little linkage between independent and dependent variables in the universal officer ($R^2 = .033$) and suspicion-based officer ($R^2 = .078$) models. This finding could have important theoretical implications. Black (1976) has suggested that there is variability in social control across societies and over time. In the present investigation, certain types of drug testing may operate as instruments of social control and others may not. The variability is across drug testing strategies; perhaps, even within the same organization. While prediction is not the primary objective of this investigation, it is still instructive to review the model's ability to correctly classify cases. Overall, the models do a fair job of predicting the

classification of cases (roughly 75 percent correctly classified). The model helps little in predicting whether an agency has a reasonable suspicion policy for sworn officers (60 percent).

Table 6.12: Logistic Regression Results for All Law Enforcement Agencies (n=1,988)

	Applicant		Sworn Officer			
	Universal	None	Universal	Random	Suspicion	None
Social Distance						
Size of Department	.454** (.064)	-.470** (.077)	-.104* (.052)	.372** (.053)	.264** (.046)	-.362** (.063)
Racial Heterogeneity	1.380* (.572)	-2.190** (.709)	.725 (.488)	2.039** (.493)	-.490 (.449)	-1.628** (.604)
Officer Social Status						
Starting Salary	-.00004** (.000)	.00004** (.000)	-.00001 (.000)	-.00007** (.000)	.00001 (.000)	.00003** (.000)
Counseling Policy	.196 (.125)	-.170 (.143)	.185 (.123)	.348** (.135)	.202 (.107)	-.475** (.126)
Third Party Influence						
Collective Bargaining	-.176 (.140)	.257 (.162)	-.399** (.126)	-.871** (.134)	.087 (.112)	.526** (.144)
Controls						
Sheriff's Department	-.981** (.133)	.755** (.153)	.282* (.121)	-.421** (.132)	-.655** (.111)	.423** (.135)
Applicant Tests	.179** (.044)	-.151** (.050)	-	-	-	-
Officers in Drug Units	-	-	-.244 (.753)	1.808* (.768)	-.179 (.731)	.633 (.733)
Constant	-.681 (.355)	.151 (.411)	-.410 (.279)	-.852** (.299)	-1.257** (.245)	-.813** (.305)
% Correctly Classified	78.7%	84.8%	75.6%	77.5%	60.0%	79.2%
χ^2	231.606**	157.511**	44.460**	271.138**	120.057**	135.471**
-2LL	1926.383	1539.742	2166.888	1937.952	2633.431	1885.330
Hosmer and Lemeshow Goodness of Fit	9.014	7.083	12.962	10.434	11.993	3.839
Nagelkerke R ²	.166	.133	.033	.190	.078	.103

Notes: * $p < .05$, ** $p < .01$, two-tailed tests. Standard error in parentheses.

The analysis now turns to the interpretation of the logistic coefficients. The coefficients are evaluated in three ways – statistical significance, direction of relationship, and odds ratio. Since large

samples may produce significant p values for marginal effects, it is important to consider alternative measures of statistical significance. Pampel (2000) recommends the use of at least two significance tests. The traditional significance test for logit coefficients, the Wald statistic, should serve as an “initial hurdle” to clear before moving on to more rigorous testing (31). He introduces a secondary approach for determining the relative significance of coefficients. The formula for the Bayesian Information Criterion (BIC) is: $BIC = z^2 - \ln n$, where z^2 is the Wald statistic and $\ln n$ is the logarithm of the sample size. The BIC represents the difference in model information with and without the variable (Pampel 2000, 31). So, BIC values under 0 indicate that the coefficient contributes little to the model. Scores of 0-2 show a weak measure of statistical strength. Other BIC grades are 2-6 (positive), 6-10 (strong), and 10+ (very strong). The BIC provides a method for comparing the significance levels of coefficients to one another. Table 6.13 reports the results of the Wald and BIC significance tests for selected logit coefficients in the aggregate sample.

Compared to the Wald statistic, the BIC is a more conservative test of statistical significance. Twenty-one percent (6 of 28) variables which achieved significance using the Wald test emerge as candidates for removal under BIC. That is, they have negative BIC scores. By way of example, racial heterogeneity recorded a p value of .016 and a BIC of -1.78 in the universal applicant regression model. A total of ten coefficients fall within the “very strong” category ($BIC > 10$) suggesting that these variables are extremely important explanatory factors. Size of department and sheriff’s department show up multiple times in this top category. The BIC exposes the weakness of racial heterogeneity as a determinant of drug testing in the aggregate sample. It ranks near the bottom of the BIC scale in several models.

Table 6.13: Tests of Significance for Selected Logit Coefficients in the Aggregate Sample (n=1,988)

	Wald	Sig.	BIC		Wald	Sig.	BIC
Applicant-Universal				Officer-Universal			
Size of Department	50.12	.000	42.53	Size of Department	4.00	.045	-3.59
Racial Heterogeneity	5.81	.016	-1.78	Collective Bargaining	10.00	.002	2.41
Starting Salary	13.21	.000	5.62	Sheriff's Department	5.42	.020	-2.17
Sheriff's Department	54.59	.000	47.00				
Applicant Tests	16.47	.000	8.88				
Applicant-None				Officer-Random			
Size of Department	37.61	.000	30.02	Size of Department	49.14	.000	41.55
Racial Heterogeneity	9.53	.002	1.94	Racial Heterogeneity	17.06	.000	9.47
Starting Salary	8.01	.005	.42	Starting Salary	38.56	.000	30.97
Sheriff's Department	24.33	.000	16.74	Counseling Policy	6.61	.010	-.98
Applicant Tests	9.21	.002	1.62	Collective Bargaining	42.30	.000	34.71
				Sheriff's Department	10.18	.001	2.59
				Officers in Drug Unit	5.55	.019	-2.04
				Officer-Suspicion			
				Size of Department	32.71	.000	25.12
				Sheriff's Department	34.82	.000	27.23
				Officer-None			
				Size of Department	33.03	.000	25.44
				Racial Heterogeneity	7.27	.007	-.32
				Starting Salary	9.28	.002	1.69
				Counseling Policy	14.17	.000	6.58
				Collective Bargaining	13.36	.000	5.77
				Sheriff's Department	9.76	.002	2.17

Several social control variables are important determinants of applicant drug testing. In particular, the social distance variables – size of department and racial heterogeneity – directly influence the likelihood of testing job seekers. Larger agencies, all other things equal, are more likely to screen applicants ($b=.454$, $p<.01$, $BIC=42.53$). A one unit increase in logged department size increases the logged odds of universal applicant testing by .454. While technically correct, this interpretation of the unstandardized coefficient provides little practical information. For this reason, the odds ratio is provided for each statistically significant coefficient (see Table 6.14). Thus, the odds of universal applicant testing increase by 57.4% for a one unit increase in the logged size of the

workforce. These large departments also tend to have fewer “no testing” policies for applicants compared to smaller police forces ($b=-.470, p<.01, BIC=30.02$). Racial heterogeneity operates in a similar fashion. The odds of having a “no test” policy for applicants decrease by 88.8% for an increase of 1 percent in racial diversity. Starting salary also contributes to applicant testing models. The negative sign before the logit indicates an inverse relationship between entry-level salary and likelihood of applicant testing. Agencies that start new officers at higher minimum salaries, have fewer universal testing policies ($b=-.00004, p<.01, BIC=5.62$). Higher salaries also lead to more “no testing” policies for job seekers ($b=.00004, p<.01, BIC=.42$).

Table 6.14: Odds Ratios for Selected Logit Coefficients in the Aggregate Sample (n=1,988)

	Odds Ratio (e^b)	(e^b-1)*100		Odds Ratio (e^b)	(e^b-1)*100
Applicant-Universal			Officer-Universal		
Size of Department	1.574	57.4%	Collective Bargaining	.671	-32.9%
Starting Salary	1.000	0.0%			
Sheriff's Department	.375	-62.5%			
Applicant Tests	1.196	19.6%			
Applicant-None			Officer-Random		
Size of Department	.625	-37.5%	Size of Department	1.450	45.0%
Racial Heterogeneity	.112	-88.8%	Racial Heterogeneity	7.679	667.9%
Starting Salary	1.000	0.0%	Starting Salary	1.000	0.0%
Sheriff's Department	2.127	112.7%	Collective Bargaining	.419	-58.1%
Applicant Tests	.860	-14.0%	Sheriff's Department	.657	-34.3%
			Officer-Suspicion		
			Size of Department	1.303	30.3%
			Sheriff's Department	.520	-48.0%
			Officer-None		
			Size of Department	.696	-30.4%
			Starting Salary	1.000	0.0%
			Counseling Policy	.622	-37.8%
			Collective Bargaining	1.692	69.2%
			Sheriff's Department	1.527	52.7%

The presence or absence of collective bargaining did not have a significant impact on applicant testing practices. Several control variables posted significant coefficients. Sheriff's departments have less applicant testing than municipal departments ($b=-.981, p<.01, BIC=47.00$). The odds of screening applicants are 62.5% lower for sheriff's departments than for municipal police departments. Departments that conduct many types of tests during the hiring process (e.g., psychological, background, lie detector) are more likely to drug test applicants than departments that have less rigorous screening protocols ($b=.179, p<.01, BIC=8.88$).

The impact of the social control variables on sworn officer testing is covered next. The social distance variables largely function according to expectations. As the social ties among officers become less intimate, the likelihood of random testing increases. Departments with closer social ties are more apt to not test officers at all. One finding seems to contradict this trend. It would appear that larger departments tend to have less universal testing of officers ($b=-.104, p<.05$). This relationship does not survive more rigorous significance testing, however ($BIC=-3.59$). Higher salaries are again connected to reduced levels of testing or no testing. The presence of the other social status variable, employee counseling policy, appears to encourage the use of random testing ($b=.348, p<.01, BIC=-.98$), but the effect may be due to random error. While the unions remain on the sidelines in the matter of applicant testing, they play an active role in shaping officer testing policies. Collective bargaining reduces the likelihood of universal testing ($b=-.399, p<.01, BIC=2.41$). The odds of universal testing are 32.9% lower for collective bargaining agencies than non-collective bargaining agencies. Collective bargaining also reduces the odds of random testing ($b=.871, p<.01, BIC=34.71$) and increases the odds of not testing ($b=.526, p<.01, BIC=5.77$). Sheriff's departments are less likely to employ most forms of drug testing. The number of officers serving in specialized drug units has a weak, positive relationship with random testing ($b=1.808, p<.05, BIC=-2.04$).

The logistic regression results for the large law enforcement agency sub-sample (n=702) are reported in Table 6.15. The model chi-square statistics (χ^2) indicate that the models work better with the independent variables included rather than models that only contain the intercept (all are significant at $p < .01$). The elevated $-2LL$, statistically significant Hosmer and Lemeshow Goodness-of-Fit test, and low classification accuracy for the officer suspicion model are concerning. Even though the chi-square tells us that the model is working, a preponderance of other evidence leads us to conclude that the model is not a good fit. Heeding this caution, the logistic coefficients for the suspicion model will not be evaluated. The reported association measures (R^2) are similar to those found in the aggregate model. The strongest associations are attached to the applicant models ($R^2 = .142$ and $.144$) and random officer testing ($R^2 = .170$). The no officer testing model reports an equally strong association score ($R^2 = .159$). The predictive capacity of these models is respectable. Three models are able to correctly classify over 87 percent of cases. In short, the model fit and association measures suggest that four models in particular (applicant-universal, applicant-none, officer-random, and officer-none) are working reasonably well with the social control variables.

Table 6.15: Logistic Regression Results for Large Law Enforcement Agencies (n=702)

	Applicant		Sworn Officer			
	Universal	None	Universal	Random	Suspicion	None
Social Distance						
Size of Department	.388* (.193)	-.560* (.268)	-.341* (.150)	.454** (.120)	.343** (.116)	-.390* (.187)
Racial Heterogeneity	1.272 (1.205)	-.386 (1.471)	-.351 (.908)	1.391 (.814)	-.617 (.753)	-.379 (1.177)
Officer Social Status						
Starting Salary	-.00010** (.000)	.00009** (.000)	.00000 (.000)	-.00007** (.000)	-.00002 (.000)	.00007** (.000)
Counseling Policy	-.187 (.337)	-.024 (.401)	.436 (.264)	.478 (.253)	-.273 (.218)	-.290 (.312)
Third Party Influence						
Collective Bargaining	-.652* (.327)	1.074* (.461)	-.394 (.223)	-.676** (.200)	.293 (.187)	1.027** (.348)
Civilian Review Board	-.732* (.362)	.460 (.487)	.340 (.307)	.083 (.261)	-.729** (.249)	.646 (.349)
Controls						
Sheriff's Department	-.715* (.284)	.845* (.357)	1.116* (.213)	-.446* (.205)	-.604** (.185)	-2.48 (.311)
Applicant Tests	.128 (.104)	-.175 (.122)	-	-	-	-
Officers in Drug Units	-	-	5.912 (3.384)	4.710 (3.187)	7.898* (3.209)	-12.717* (5.534)
Constant	2.442* (1.226)	-1.937 (1.580)	-.217 (.879)	-1.653* (.748)	-.857 (.707)	-1.786 (1.117)
% Correctly Classified	87%	92.3%	77.4%	70.2%	59.0%	86.9%
χ^2	55.352**	43.107**	46.833**	91.172**	31.353**	63.235**
-2LL	482.324	332.653	704.317	796.846	925.758	482.059
Hosmer and Lemeshow Goodness of Fit	5.485	13.157	6.222	6.624	18.418*	2.944
Nagelkerke R ²	.142	.144	.098	.170	.059	.159

Notes: * $p < .05$, ** $p < .01$, two-tailed tests. Standard error in parentheses.

The logit coefficients provide a wealth of information about employee drug testing policies in large police organizations. The size of the department continues to play an important role in shaping testing policy. Larger departments are more likely to engage in universal applicant ($b = .388, p < .05$), random officer ($b = .454, p < .01$), and officer suspicion ($b = .343, p < .01$) testing. In addition, “no

testing” policies are found more frequently in smaller departments. The unexpected inverse relationship between department size and universal officer testing, first revealed in the aggregate sample, still holds in large departments. The racial heterogeneity variable is not a significant contributor for any drug testing strategy used in large organizations. To gain some insight into why racial heterogeneity dropped out of significance, a comparison of coefficients in the large and aggregate samples was made. Menard (1995) notes that unstandardized logistic coefficients may be compared in a rudimentary fashion across samples. In every case, the racial heterogeneity coefficients in the large department sample were lower than those generated in the aggregate sample (some of this may be attributed to the addition of the civilian review board variable to the model). For the social status variables, only starting salary reports effects on the dependent in four of the six models. Collective bargaining continues its dampening influence on random testing ($b=-.676, p<.01$). Unlike the aggregate sample, unions extend their fight against drug testing to include applicant testing. The applicant testing relationships with collective bargaining are weak ($p<.05$) and tend to wash out when subjected to more rigorous significance testing (that is, they have negative BIC scores). The other third party influence specific to large departments, citizen complaint review board, reports two significant coefficients. The presence of a civilian board tends to depress the amount of applicant ($b=-.732, p<.05$) and suspicion-based officer ($b=-.729, p=.01$) testing. Of final note, sheriff’s departments are still associated with lower levels of testing. The five significant coefficients for sheriff’s departments indicate less testing of personnel compared to municipal/county police departments.

Table 6.16 presents the logistic regression results from mid-sized law enforcement agencies ($n=765$). The model statistics again indicate an acceptable fit with the variables. The model chi-squares are all significant ($p<.01$). The Hosmer and Lemeshow Goodness-of-Fit statistics are

insignificant. We fail to reject the null hypothesis that there is no difference between the observed and predicted values of the dependent. In short, each model's estimates fit the data to an adequate degree. The random drug testing model continues to exhibit the strongest association among variables ($R^2=.187$). The suspicion testing model again presents itself as the poorest performer ($R^2=.057$, 59% of cases correctly classified, $-2LL=1027$).

Table 6.16: Logistic Regression Results for Mid-Sized Law Enforcement Agencies (n=765)

	Applicant		Sworn Officer			
	Universal	None	Universal	Random	Suspicion	None
Social Distance						
Size of Department	.248 (.237)	-.004 (.278)	-.072 (.218)	.087 (.246)	-.071 (.190)	-.109 (.238)
Racial Heterogeneity	2.046 (1.063)	-4.102** (1.479)	1.538 (.841)	1.611 (.918)	-.062 (.789)	-2.326* (1.153)
Officer Social Status						
Starting Salary	-.00001 (.000)	.00000 (.000)	-.00003 (.000)	-.00008** (.000)	.00002 (.000)	.00002 (.000)
Counseling Policy	.108 (.197)	-.045 (.231)	-.029 (.187)	.272 (.214)	.321 (.165)	-.269 (.201)
Third Party Influence						
Collective Bargaining	.073 (.228)	.004 (.268)	-.300 (.208)	-1.139** (.231)	.053 (.184)	.488* (.241)
Controls						
Sheriff's Department	-1.163** (.227)	.729** (.266)	-.030 (.213)	-.481* (.235)	-.682** (.195)	.461* (.235)
Applicant Tests	.039 (.078)	-.127 (.088)	-	-	-	-
Officers in Drug Units	-	-	1.576 (1.828)	2.287 (1.996)	-1.464 (1.765)	1.061 (2.089)
Constant	.231 (1.033)	-.853 (1.215)	-.003 (.887)	.515 (1.012)	-.225 (.771)	-1.641 (.976)
% Correctly Classified	78.0%	86.0%	74.4%	80.0%	59.0%	80.5%
χ^2	50.524**	28.275**	22.133**	98.125**	33.188**	20.516**
-2LL	757.413	590.956	842.064	691.792	1027.033	733.878
Hosmer and Lemeshow Goodness of Fit	8.667	5.203	8.506	5.926	5.908	10.013
Nagelkerke R^2	.098	.065	.042	.187	.057	.042

Notes: * $p<.05$, ** $p<.01$, two-tailed tests. Standard error in parentheses.

What is immediately evident from a scan of the mid-size department logistic regression models is the drop-off in the number of statistically significant coefficients. Additionally, the ones that do remain are not as strongly significant as was the case in earlier samples. Department size served as an important determinant for most forms of drug testing in the aggregate and large department samples. Department size does little to inform our understanding of employee drug testing in medium departments (25 to 99 officers). The other social distance variable, racial heterogeneity, is limited to a marginal role in departmental decisions whether to adopt a no testing policy for applicants and officers. Greater racial diversity decreases the likelihood that a department will not test applicants ($b=-4.102, p<.01$) and officers ($b=-2.326, p<.05$). Officer social status is relegated to a very minor role in shaping testing policy in these departments. Collective bargaining still operates as an obstacle to random testing. The logged odds of random testing are -.837 lower for agencies that collectively bargain than those that do not ($p<.01$). The sheriff's department dummy variable provides a valuable explanatory contribution in several models. In particular, there is less universal applicant testing ($b=-1.163, p<.01$) and reasonable suspicion testing of sworn officers ($b=-.682, p<.01$) in sheriff's offices.

The final logistic regression models are for the smallest law enforcement agencies (10 to 24 sworn personnel). Table 6.17 contains the results of the data runs. By all measures, these models do not work as well as those found in the preceding samples. With the exception of universal officer testing, each model sees an improvement by including the independent variables in the model (model chi-squares significant at $p<.01$). The universal officer model has a better fit with only the constant included. As such, the logits will not be evaluated for this model. The predictive accuracy of the models is not terribly impressive (65.5 percent to 74.3 percent). The pseudo-variance is best for universal applicant ($R^2=.176$) and random officer testing ($R^2=.150$).

Table 6.17: Logistic Regression Results for Small Law Enforcement Agencies (n=521)

	Applicant		Sworn Officer			
	Universal	None	Universal	Random	Suspicion	None
Social Distance						
Size of Department	.621 (.360)	-.485 (.378)	.010 (.382)	.463 (.462)	.249 (.357)	-.193 (.366)
Racial Heterogeneity	2.646** (.944)	-3.028** (1.081)	1.219 (.852)	2.893** (.900)	-.107 (.872)	-3.627** (1.057)
Officer Social Status						
Starting Salary	-.00001 (.000)	.00001 (.000)	-.00001 (.000)	-.00007* (.000)	.00004 (.000)	.00000 (.000)
Counseling Policy	.366 (.202)	-.269 (.213)	.210 (.211)	.437 (.254)	.326 (.194)	-.674** (.206)
Third Party Influence						
Collective Bargaining	-.305 (.232)	.267 (.242)	-.474* (.241)	-.837** (.302)	-.096 (.223)	.387 (.230)
Controls						
Sheriff's Department	-1.035** (.213)	.705** (.226)	-.188 (.229)	-.235 (.264)	-.672** (.221)	.633** (.216)
Applicant Tests	.272** (.073)	-.128 (.074)	-	-	-	-
Officers in Drug Units	-	-	-.563 (.952)	1.376 (.909)	-.208 (.889)	.312 (.818)
Constant	-2.528* (1.113)	.775 (1.156)	-.765 (1.121)	-1.275 (1.356)	-2.019 (1.059)	-.218 (1.079)
% Correctly Classified	69.5%	73.7%	74.3%	82.3%	65.5%	68.7%
χ^2	72.444**	31.210**	10.670	49.958**	26.990**	40.181**
-2LL	625.111	581.128	583.380	438.861	644.694	614.933
Hosmer and Lemeshow Goodness of Fit	8.534	7.835	10.323	9.183	14.635	5.951
Nagelkerke R ²	.176	.084	.030	.150	.070	.104

Notes: * $p < .05$, ** $p < .01$, two-tailed tests. Standard error in parentheses.

A different array of factors seems to influence drug testing policies in small law enforcement agencies. The number of officers on the force no longer plays a significant role. This may be due, in part, to the limited amount of variability in departmental size scores. Racial heterogeneity moves to the forefront of explanatory factors. Small departments with little racial diversity are less likely to require applicant testing ($b=2.646, p<.01$). A racially homogeneous department will more likely

forgo testing applicants for sworn positions ($b=3.028, p<.01$). For existing officers, greater amounts of racial diversity result in more random testing ($b=2.893, p<.01$) and fewer “no testing” policies ($b=-3.627, p<.01$). Departments that engage in collective bargaining with officers tend to have less random testing than non-bargaining departments ($b=-.837, p<.01$). Finally, the type of department continues to exercise much influence over testing policy. Municipal police departments engage in more testing of job seekers ($b=-.1.035, p<.01$) and those suspected of drug use ($b=-.672, p<.01$). Policies that do not require tests of applicants and officers are also more common in sheriff’s departments.

CHAPTER 7: CONCLUSIONS

The purpose of this final chapter is to assess the progress that has been made in achieving the stated research goals. To remind the reader, three objectives were specified at the start of this investigation: a) to build a new theoretical framework for studying public sector drug testing, b) to empirically test aspects of the theory, and c) to identify policy and administrative issues that result from the analysis. The following discussion focuses on how the research findings inform our understanding of drug testing theory, practice, and policy. The chapter concludes with a discussion of new research questions that arise from the study.

Theory Building

A primary goal of this research was to build a new theory of drug testing for the public sector. Some may ask why there is a need for such a theory, especially one that is so narrowly focused on governmental entities. Several reasons can be offered in support of this theory-building exercise. First, as revealed in the literature review, there has been little theorizing about employee drug testing in public sector organizations. This is problematic as the public sector's experience with drug testing was held out as an example for others to follow. The federal government was to "show the way" on the issue. Without a clear understanding of what led the early public sector adopters to embrace drug testing, the growth of worker drug testing outside of government cannot be fully understood.

Second, the general theorizing conducted in psychology, business management, philosophy, and sociology does not take into account important public sector values that contribute to drug testing policy. Public organizations operate within a complex constitutional and political environment. It is a context where power is divided (separation of powers and federalism), organizations such as unions

and drug testing companies have the right to press their demands on policymakers (pluralism), citizens choose their representatives (republicanism), and government action against individuals is constrained (Fourth Amendment protection against illegal government searches). It is this context that distinguishes public entities from other types of organizations. To fully understand a phenomenon such as public sector drug testing, one must take into account the role of all participants including courts, politicians, public employee unions, and citizens in shaping policy. This is where a public administration perspective is of most value. It provides the context that is missing in the other general theories. As such, the best approach is one that marries an existing macro level theory with important contextual elements of public administration.

Public administration's contribution to drug testing theory was developed in the first part of the paper. The political and legal context that facilitated the adoption of drug testing in the public sector was covered in Chapter 1. This was followed in Chapter 2 with an analysis of the competing voices that lined up on either side of the drug testing debate. A comprehensive review of the original political and legal debates surrounding drug testing turned up six justifications for its use in the federal government (a similar list was also found for police organizations, see Chapter 4). The rationales varied widely. For many proponents, drug testing served purely instrumental ends, e.g., ensuring public and worker safety, deterring drug use, and rehabilitating drug abusers. Opponents attributed the rise in government worker drug testing to less savory motives. They saw employee drug testing as symbolic action taken by government against drugs in society, an infringement of privacy spurred on by new technologies, and class warfare. Neither side has been particularly concerned with the efficacy of their favored justifications. There is scant scientific evidence linking drug testing to anticipated benefits (e.g., improved productivity, fewer on-the-job accidents, and higher numbers of rehabilitated workers).

In Chapter 3, the strengths of public administration theory (context) and social control theory (a structured framework for studying societal responses to deviance) were joined together into a new theory of drug testing. The policy justifications coming from the public administration literature were compared at three levels as suggested by social control theory -- form, style, and quantity. Each justification was found to operate in a very distinctive way. Justifications exhibited different grievance structures (unilateral, bilateral, and trilateral), responses to the offending behavior (compensatory, penal, conciliatory, therapeutic, and market), and standards of measurement (absenteeism, level of treatment funding, and percentage of minorities tested). Drug testing is not a single type of social control. Instead, its operation as a mechanism of social control is deeply tied to its policy justification. Thus, it is variable across organizations, sectors, and societies. Other elements of social control theory useful for studying variations in control across jurisdictions were introduced in Chapter 5. Social distance, social status, and third party intervention served as the indicators of social control in organizations that could be measured and compared. In the end, the linkage of social control theory with public administration values provides a solid theoretical mooring for the empirical part of the paper.

Theory Testing

The second research objective was to empirically test aspects of the newly constructed theory. A total of 13 research hypotheses were offered for testing. A summary of the hypotheses and levels of empirical support is provided in Table 7.1. Social control theorists postulate that the amount of social control varies with the social distance and social status among disputing parties and the presence or absence of third parties. The results of the statistical analysis presented in Chapter 6 are discussed in terms of the stated hypotheses. More specifically, the aim is to see how well the social control constructs perform as determinants of police agency testing policies.

Social Distance

Social distance was defined earlier as the level of social connectedness among organizational members. It refers to the frequency and quality of social interactions. Social control theory postulates an inverse relationship between relational distance and law. That is, as the personal relationships between organizational members thin, there is a greater tendency to rely on more formal means to control deviant behavior. Policy directives, employee surveillance, and drug testing are examples of formal controls that are often found in the workplace. The theory also suggests that tests which require a relationship between manager and worker (reasonable suspicion testing) will be more popular in smaller agencies. In contrast, one would expect larger, racially diverse organizations to favor mass screening procedures which do not require individualized suspicion. Two variables were used to measure social distance within police organizations – logged number of sworn officers and racial heterogeneity. The key findings from the empirical analysis are discussed below.

Departments with more sworn officers should be more inclined to test workers (H_1). In the aggregate and large department models, size of department is significantly related to drug testing policy. Smaller departments in these samples are more likely to have a “no testing” policy for applicants and sworn officers compared to larger departments. This indicates strong support for H_1 . The social ties between employees in small departments are tighter. As such, these departments are more likely to rely on informal means of handling worker drug issues rather than more structured approaches like drug testing. In contrast, the impact of department size on the likelihood of not testing is statistically insignificant in the medium and small department models (although the direction of the relationship is in the hypothesized direction). H_1 is not supported in these samples.

There was a strong sense that increased levels of social distance would lead to a) the greater use of mass screening policies and b) reduced reliance on testing strategies that are predicated on a relationship between individuals (manager's suspicion) (H_2). In the aggregate and large department models, random testing is more likely in larger departments. Random testing performs as expected with greater use in larger departments (preliminary support for H_2). However, there was an expectation that there would be greater use of universal testing in these organizations too. In actuality, larger departments are *less likely* to have a universal officer testing policy. Perhaps drug testing all officers every year is a financial burden, thus they rely on a sampling procedure instead. This relationship was statistically significant in the aggregate and large department samples but the weak relationship turned insignificant when subjected to more rigorous significance testing procedures. In another unanticipated turn, reasonable suspicion testing was also more likely in larger departments. Lastly, size of department continues to be a nonfactor in determining testing policy in small and medium multivariate models.

Another hypothesis states that increasing levels of racial heterogeneity will lead to more drug testing in departments (H_3). The aggregate models provide initial evidence to support the hypothesis. More workforce diversity is associated with higher levels of universal applicant testing. Racially homogeneous departments are more likely to report that applicants and officers are not tested. The racial heterogeneity variable does not significantly influence drug testing policy in large department models. It is more salient an issue in the smallest departments (under 24 officers).

Social control theory also suggests a relationship between heterogeneity and the procedure used for selecting test takers. That is, departments with greater amounts of racial diversity will rely on mass screening tests rather than individual suspicion tests (H_4). There is modest support for this

claim. Random testing is higher in departments with greater diversity (aggregate and small models only). There are increased levels of universal applicant testing in small departments that are racially diverse. However, the racial composition of the force does not impact on the propensity to engage in suspicion based testing. Thus, it is accurate to say that racial heterogeneity does increase the likelihood of random testing, especially in very small departments, but its influence is not important in large and medium departments. An important question that remains unanswered is whether random testing functions as a tool for discriminating against racial minorities in the workforce. This issue will be addressed in the final section of the paper.

In summary, social distance variables do impact on the type of drug testing policy that is adopted in police organizations. Department size is an important determinant of testing policy in very large departments. Racial heterogeneity, on the other hand, contributes little to our understanding of testing policy in large departments. The social distance variables appear to work in the exact opposite manner in the smallest departments (10-24 officers). Racial diversity emerges as the salient issue in these agencies while department size is an insignificant factor. The social distance variables exchange places as determinants of drug testing as the number of sworn officers declines.

Social Status

Social status is the level of respect that an individual receives. There is a rank order to social status – some have more, others have less. Social control theory predicts that social control flows in the direction of lower status. That is, higher status brings with it the ability to exert social control on those of lower status. An inverse relationship is expected between social status and the likelihood of drug testing. Social status is measured by the minimum salary paid to new officers and the presence of an employee counseling directive.

Lower entry level salaries indicate lower social status. Thus, it is hypothesized that departments holding officers in low regard will subject them to more forms of control including drug testing (H_5). There is some support for this proposition. In the aggregate and large department samples, higher salaries reduce the likelihood of universal applicant testing and increase the odds that the department will not test applicants. Policies that do not require officer testing are also more likely in better paying departments. These relationships do not appear in medium and small departments however.

The existence of an employee counseling policy indicates that the organization has some regard for the well-being of its employees. Employers will only grant this benefit if it views workers as deserving of a higher social status. As such, departments with counseling directives should conduct fewer drug screens (H_6). The multivariate analysis finds that counseling has virtually no influence over an agency's drug testing strategy. This is somewhat surprising as counseling is correlated with other variables that move with it in the hypothesized direction. For example, counseling policy is positively associated with collective bargaining ($r=.15$) and minimum salary ($r=.23$). When counseling policy does show up as a significant factor in the multivariate models, it operates in the opposite direction. In the aggregate and small department samples, the absence of a counseling policy seems to reduce the likelihood that the department will have a "no testing" policy for officers. Counseling policy is associated with *more* random drug testing in the aggregate model. One could infer from these findings that the policy directive may not be there for the benefit of the worker. Instead, it may exist for the sole purpose of protecting the department from worker initiated lawsuits or adverse employment actions when a worker tests positive for drugs. The policy may spell out the procedures that are followed by the agency when conducting drug screens (chain of custody, selection, what happens after a positive screen). Without a policy in place, agencies may open

themselves up to claims that they denied an individual's due process rights or acted arbitrarily. Using this logic, counseling policies may actually facilitate the implementation of more aggressive drug testing programs.

It is hypothesized that social status will influence the type of procedure that is used to select potential test takers. Mass testing will be used more frequently in departments that identify officers as having a low social status (H₇). This does appear to be the case for random drug testing. In each of four samples, random testing is more likely in departments with lower salaries. The other two selection procedures of interest, universal officer and suspicion-based officer, do not achieve statistical significance. As indicated earlier, counseling policy does not function as expected. In the aggregate sample, agencies with counseling policies tend to engage in more random drug testing.

Third Parties

At a very basic level, employee drug testing only involves two groups – managers and test takers. The role for the latter is self-evident while the former is responsible for overseeing the testing process, and in some cases, selecting individuals for testing when there is reasonable suspicion to believe that a person is drug impaired. Other parties outside of these two major actors may also influence drug testing in organizations. Public employee unions represent groups of workers in their dealings with management. Many unions have the right to negotiate issues of the workplace with management, including the agency's drug testing policy. The other outside party that may indirectly influence drug testing in police organizations is a civilian complaint review boards. The very existence of this oversight body indicates some level of citizen distrust with the police. Its presence may indicate a receptivity to place additional controls on police personnel.

The literature suggests that public employee unions grudgingly accept certain forms of drug testing. This implies that they will encourage the development of “no testing” policies for rank and file members (H₈). This hypothesis is supported with data from the aggregate and large department samples. Unions, through the collective bargaining process, appear effective in their efforts to create “no testing” policies. For the largest law enforcement agencies, collective bargaining also increases the likelihood that applicants will not undergo drug tests. The impact of collective bargaining on the adoption of “no testing” policies in smaller departments is negligible.

There was some indication in the literature that unions would use applicant drug testing as leverage against the imposition of invasive testing policies on the sworn workforce. In essence, that applicant drug testing is more prevalent in collective bargaining organizations (H₉). This hypothesis did not find support in any of the multivariate models.

Unions have actively fought drug testing policies that are not based on probable cause or reasonable suspicion. Departments that collectively bargain are less likely to use random and universal testing policies which infringe most heavily on personal privacy (H₁₀). All samples report lower levels of random testing in departments that engage in collective bargaining for sworn officers. In two of the samples (aggregate and small department), universal officer testing is less likely in departments with collective bargaining. This provides some evidence that the construct is having the predicted effect on drug testing policy.

A question about civilian complaint review boards was included in the survey instrument that was sent out to large departments. Smaller departments were not queried on the subject. As such, the impact of civilian boards on drug testing policy is limited to the large department sample. The mere

existence of a board was thought to increase the likelihood of testing since it represented a recognized need to control the police (H₁₁). In practice, the boards exert an unexpected influence over drug testing policy. The presence of a board reduces the odds of conducting applicant testing and lowers the likelihood of suspicion-based testing. It is unclear why the civilian board has these effects on testing policy. In short, the empirical evidence does not support the civilian review board hypothesis.

Controls

Three antecedent controls were included in the models – percentage of officers in drug units, number of applicant tests, and type of department. The first two control variables were expected to move in predicted ways so hypotheses were formulated for them. It was conjectured that a drug problem in a community or easy police access to drugs would lead law enforcement organizations to adopt more comprehensive drug testing programs. The percentage of officers in specialized drug units serves as an indicator of the seriousness of the drug problem in the jurisdiction. It also implies that police officers may have access to large quantities of drugs that are seized through the work of these operations. The U.S. Supreme Court approved of random drug testing for officers who were involved with enforcement of drug laws. Thus, random testing should be more prevalent in organizations with greater numbers of officers engaged in drug enforcement activities (H₁₂). There is little empirical support for this proposition. In the aggregate sample, the number of officers in drug units does predict the likelihood of random drug testing ($p < .05$), but the relationship is not significant using the BIC test of significance. This relationship is not significant in the other samples. The second control variable is a simple count of the number of employment screening tests that an agency uses (psychological, polygraph). Agencies that employ many screening techniques may be said to have a testing culture. Departments that have a strong testing culture are more likely to view drug testing as “just another test” and adopt all types of drug testing (H₁₃). This hypothesis is supported in

the aggregate and small department samples. Departments that use multiple screening procedures tend to drug test all applicants. These findings are not produced in the large and medium department models.

The last control variable distinguishes the drug testing policies of municipal/county police departments from sheriff's departments. This variable was the most consistent factor in explaining drug testing policy throughout all the models. Generally, sheriff's offices engage in less drug testing (applicant, random, suspicion) than municipal police departments. Larger sheriff's offices may use more universal officer testing than municipal police departments however. These findings hold up in all four samples. What explains the influence of agency type? Sheriffs may have to rely less on this type of control to manage personnel. As elected officials, they more directly control the employee selection and performance evaluation processes. Also, the deputies who work for the sheriff may be close political supporters. A sheriff is less inclined to invade the personal privacy of his/her hand-picked staff, many of whom may have a personal relationship with the sheriff. In addition, positive drug test rates would reflect poorly on the sheriff's ability to manage a workforce that he/she hired. In lieu of drug testing, sheriffs may detect drug problems through less formal means (e.g., learning from others in and outside the organization that the deputy has a drug problem).

In the end, there is some empirical support for 9 of the 13 hypotheses. The social control models work the best on random officer and applicant testing. The explanatory power of the models is less impressive for universal and suspicion based testing of officers. Most of the theory-critical independents help to explain the variability in drug testing policies among police organizations. In particular, size of department, racial heterogeneity, starting salary, and collective bargaining perform

according to expectations. Additionally, the impact of agency type on drug testing is an interesting finding that could be worked into the social control framework for future study.

Table 7.1: Empirical Support for Research Hypotheses

	Hypotheses	Aggregate	Large	Medium	Small
	<i>Social Distance</i>				
H ₁	As the size of the sworn workforce increases, the likelihood of having an employee drug testing program increases	Yes	Yes	No	No
H ₂	Larger police departments will adopt more drug testing policies that do not require individualized suspicion (universal, random) compared to smaller agencies	Yes/Random No/Universal	Yes/Random No/Universal	No	No
H ₃	As the racial heterogeneity of a police force increases, the likelihood of drug testing increases	Yes	No	No	Yes
H ₄	Departments that have greater amounts of racial diversity will engage in more suspicionless drug testing	Yes/Random Yes/Universal	No	No	Yes/Random Yes/Universal
	<i>Social Status</i>				
H ₅	Organizations that pay lower starting salaries are more likely to screen workers for drugs	Yes	Yes	No	No
H ₆	Departments that do not have an employee counseling policy are more likely to test	No	No	No	No
H ₇	As the recognized social status of individual officers increases (salary, counseling policy), the probability of drug testing without individualized suspicion decreases	Yes/Salary No/Policy	Yes/Salary No/Policy	Yes/Salary No/Policy	Yes/Salary No/Policy
	<i>Third Parties</i>				
H ₈	Agencies that require collective bargaining will report more frequent use of “no testing” policies for sworn officers than those that do not bargain	Yes	Yes	No	No
H ₉	Departments that engage in collective bargaining are more likely to test job applicants compared to departments that do not bargain	No	No	No	No
H ₁₀	Departments with collective bargaining are less likely to have testing programs that provide the greatest infringement on worker privacy (random, universal)	Yes/Random Yes/Universal	Yes/Random No/Universal	Yes/Random No/Universal	Yes/Random Yes/Universal
H ₁₁	Departments that have external civilian review boards will have more rigorous drug testing programs	No	No	No	No
	<i>Controls</i>				
H ₁₂	Departments with greater numbers of officers working in drug interdiction units and interagency drug task forces will conduct more random drug tests	No	No	No	No
H ₁₃	Departments that use many types of applicant screening techniques (i.e., a testing culture exists within the organization) will be more likely to screen job applicants for drugs	Yes	No	No	Yes

Policy, Administrative, and Research Implications

The typology developed in Chapter 3 (see Table 3.2 for a summary of theory) has significant implications for public personnel administrators and first-line supervisors. The theory encourages personnel administrators to expand their information systems to include quantity measures across several different policy justifications. This may mean going beyond the normal performance, safety, and rehabilitation metrics (e.g., absenteeism, accidents, and funds spent on drug counseling) to include elements from the symbolic and conflict rationales (e.g., what impact does our drug testing policy have on our public image and are there disparities in the implementation of drug testing in our organization). In this way, the personnel manager can determine if a certain form or style is more effective in a specific context (e.g., does the penal or therapeutic style better match the culture of our organization) and whether the testing is being implemented in an equitable fashion. First-line supervisors play an important role in implementing the drug testing policy, especially in organizations that permit “for-cause” testing. The supervisor may be placed in a situation where the drug testing policy is decidedly penal, but the situation calls for a more therapeutic approach. The typology provides the supervisor with alternative ways of approaching street-level situations (forms and styles) while insisting that administrative discretion be carried out in a consistent and fair manner.

It is also possible to match rationales to different types of drug testing. The deterrence justification works well for preemployment testing and random screens. Treatment is not a useful justification for preemployment testing. Candidates who test positive on a preemployment screen are simply removed from the process. The testing strategy may have simultaneous effects for the parties. From the perspective of the job seeker who is denied employment due to a positive screen, the policy has a punitive effect. However, from the agency’s point of view, the policy is simply in place to discourage drug users from applying.

The most important issue arising from this study crosses over policy and administrative domains. The controversy centers on the potential to use drug testing in a discriminatory way. As described earlier in Chapter 6, racial heterogeneity is a factor that influences drug testing policy in many police agencies. Increasing levels of racial diversity in the sworn workforce results in more rigorous drug testing. This relationship is especially prominent in small departments (10-24 officers). While it is not possible to discern from the data exactly why this relationship exists, there is the potential for mischief. Contextual discrimination, a subtle form of discrimination, could be at work in some departments. There are ways to determine if drug testing is having an adverse impact on racial minorities – positive hit rates by race, drugs included in the panel, and final disposition by race (see Table 3.2). It is necessary to make a distinction between intentional and unintentional discrimination. Harris and Heft (1992, 250) note that the “Civil Rights Act of 1991 seems to permit drug screening unless it is used to intentionally discriminate, suggesting that it will not be possible to advance an adverse impact case on the basis of drug test results.” Either way, administrators have an ethical obligation to fight discrimination in all its forms. With the knowledge that drug testing may be misapplied, administrators can fight its effects by first analyzing the measures described above. Cultural competency and sensitivity training may also be in order for first-line supervisors.

As is often the case in social science research, the investigator ends the project with more questions than answers. This is the situation here. There is still much work to be done on the issue of employee drug testing.

As the first attempt to construct a comprehensive theory of drug testing for the public sector, this research provides a jumping off point for future studies of drug testing as well as other forms of social control. For one, there is no research that studies the differences in the policy justifications

offered by public and private institutions. The impact of employee drug testing on citizen perceptions of public administrators is also unknown. Does drug testing deliver the symbolic effect that is sometimes offered as justification for its implementation? Does drug testing improve the standing of public administration in the eyes of the citizenry? Another promising area for future study involves a comparative analysis between drug testing and another recent method of social control, the monitoring of employee email and internet activities (see Cozzetto and Pedliski 1996). There are many similarities on the surface. Both are driven by fast-changing technologies. Also, the courts have been actively involved in setting the parameters for acceptable monitoring. At the present time, very few restrictions have been placed on management's monitoring of employee email usage. In the end, both employee drug testing and email monitoring involve important privacy considerations that are largely driven by new technologies.

Returning to the present study, there is still much work that needs to be done on both the theory building and theory testing ends of spectrum. Future research may address any number of pressing questions:

- Are there other variables that should be included in the social control model? The pseudo-variance statistics indicate that there is plenty of room to expand the explanatory power of the model.
- What other metrics can be developed to measure the quantity of social control? The list of measures (see Table 3.2) is by no means an exhaustive one.

- How do different drug testing policies impact officer morale? How do officers view drug testing? Police officer recruits? Are there certain drug testing policies that attract and repel job candidates?
- Does the theory hold up in other drug testing contexts (e.g., testing of state and municipal government workers who work outside of law enforcement)?
- What is the nature and extent of police drug use? How does drug testing influence the drug use patterns of officers?
- Is there a relationship between the use of certain drug testing mechanisms and the type of punishment? Are there “therapeutic” departments and “punitive” departments? Do our variables predict these? Is there a relationship between normative justifications and type of punishment? This investigation only scratches the surface of all social control relationships. Horwitz (1990) offers a series of propositions that would require a close review of individual departmental policies. Penal style is more likely as the relational distance between grievants grows (28). Are policies that require immediate dismissal upon the return of a positive screen more likely in racially diverse and highly populated departments?

Improvements in the dependent variable are also in order. The present use of six different binary variables is an improvement over studies that only look at one binary variable. However, it fails to capture the true intensity of an agency’s overall drug testing program. The creation of a continuous drug testing scale would be a further enhancement to this line of inquiry. The scale would operate in the following manner. Departments that did not screen employees for drugs under any

circumstances would be at the low end of the scale. This would include the small number of police departments that have “no testing” policies for applicants and officers. Departments in the middle of the drug test scale would most likely require some combination of applicant and officer testing. The “normal policy” would probably require applicants to submit to drug tests but limit the circumstances that trigger tests for sworn officers (e.g., after an accident or if a manager suspects abuse). At the high end of the drug testing intensity scale are departments that employ multiple testing procedures including those that most infringe upon individual privacy (i.e., random).

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ENDNOTES

¹ Urinalysis has been used as a medical diagnostic tool for thousands of years. See Haber (1988) for a fascinating history of its use.

² Ethicists and unionists would concur with the placement of random testing at the end of an intrusiveness continuum. However, they would take a more critical view of tests that were not based on individualized suspicion (see Chapter 2).

³ While Nixon is credited with initiating the first “war on drugs,” his overall drug policy balanced drug enforcement with new investments in drug treatment.

⁴ The litigation costs also mounted for the government. The U.S. Department of Justice estimated that its testing-related litigation costs for 68 drug testing cases between FY 1987 and 1991 was \$724,995 (U.S. General Accounting Office 1992, 8).

⁵ This is not to imply that these rulings completely settled all the constitutional issues surrounding drug testing. For a discussion of unanswered questions about government initiated drug testing after *Von Raab* and *Skinner* see Bible 1989; Anderson 1998; Kelly and Kelly 1989; and Yurow 1989. Some lower courts continue to find aspects of drug testing unconstitutional (Knowles and Riccucci 2001).

⁶ President George H. Bush’s own “drug-free federal workforce” initiative spurred on additional testing in the federal executive branch. The National Park Service and U.S. Fish and Wildlife Service mandated drug testing for certain law enforcement positions (Murrell, Dwyer, and Wages 1991).

⁷ Interestingly, the CDC blind study program was discontinued after the critical performance data were published.

⁸ Much of the theorizing about employee drug testing has proceeded without regard for the actual prevalence of drug use by workers. Compared with workers in other industries, those employed in government have traditionally reported much lower rates of drug use while at work (see Gleason, Veum, and Pergamit 1991). Federal job applicants and employees are also less likely to test positive for drugs in comparison to those who work elsewhere. According to the most recent figures, the positive drug use rate for federal applicants and employees is 0.5 percent versus five percent for workers in other industries (U.S. Department of Health and Human Services 1999a).

⁹ The GAO report also found wide variation in the costs associated with different treatment modalities. For example, long term residential care (140 days) cost \$6,800 per treatment episode while 120 days of outpatient treatment averaged \$1,800 (U.S. General Accounting Office 1998a, 24).

¹⁰ A common fear among drug testing critics was that blood or urine samples could reveal information about an individual that would in turn be used against the test-taker. This fear may not have been too far-fetched. In one of the earliest articles about drug screening, Sohn (1972) projected that preemployment drug tests would be used to screen out applicants who had certain medical problems (heart attacks, epilepsy). These tests would help rein in the soaring cost of health and retirement plans and prevent unjustified workers’ compensation awards (18).

¹¹ Somewhat surprisingly, drug testing has not been a major subject of concern for postmodernist thinkers. Only one paper (Schehr 1995) evaluates drug testing from a postmodern perspective. Since there a paucity of work in this area, postmodernism is not included in the analysis of theoretical alternatives.

¹² The perceived fairness of alternatives to urinalysis including personality tests has also been studied (Rosse, Ringer, and Miller 1996). Personality inventories were viewed as the least acceptable selection procedure, a ranking that placed it below urine screens.

¹³ Carter and Stephens (1988) found varying levels of support among police chiefs for different drug testing strategies. Most chiefs approve of “for cause” (87.7 percent) and job applicant (76.4 percent) testing. Less enthusiasm was reported for random (50.5 percent) and “serious incident” testing (42.6 percent).

¹⁴ While often cited as a reason to initiate drug testing in police departments, courts have since rejected the argument that the prevalence of drug use in the population can be used to justify police drug testing (Richman 1994).

¹⁵ Over a five-year period from FY 1993-1997, FBI-led investigations resulted in the conviction of 325 state and local law enforcement officers on drug-related offenses (U.S. General Accounting Office 1998b, 35).

¹⁶ Babbie (1995, 260) indicates that a response rate of 70 percent is a very good indication of the representativeness of the sample respondents.

¹⁷ Other types of police departments including constables, tribal police departments, and special purpose agencies (e.g., transit or campus) are omitted.

¹⁸ In his classic work, Mosher (1968, 121) notes that in organizations which are dominated by a profession, tensions may run between “politically appointed officials and the elite profession (or its elite segment), especially if the political leaders are not members of the profession (or segment).” Since most sheriffs are elected and not necessarily selected based upon technical competence, it may be posited that there could be tension between a sheriff and existing workforce. Sheriffs may feel a need to exert more formal control over the dominant profession (i.e., career law enforcement officers).

¹⁹ The impact of using the unlogged and logged sworn officer variable was assessed by running the multivariate models with each variable separately. There were only minor differences in results.

²⁰ For an example of the use of dummy variables in a correlation matrix, see Kim (2002).

APPENDIX A:
1997 SAMPLE SURVEY OF LAW ENFORCEMENT AGENCIES

RETURN TO

Bureau of the Census
1201 East 10th Street
Jeffersonville, IN 47132-0001

FORM **CJ-44**
(6-19-97)

1997 SAMPLE SURVEY OF LAW ENFORCEMENT AGENCIES

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR
BUREAU OF JUSTICE STATISTICS
U.S. DEPARTMENT OF JUSTICE

In correspondence pertaining to this report, please refer to the number at the top of the address label

(Please correct any error in name, mailing address, and ZIP Code)

INFORMATION SUPPLIED BY

Name					Title			
OFFICIAL ADDRESS	Number and street or P.O. box/Route number				City	State	ZIP Code	
TELEPHONE	Area code 017	Number	Extension	FAX NUMBER	Area code 018	Number		
E-MAIL ADDRESS								

FROM THE DIRECTOR
BUREAU OF JUSTICE STATISTICS

On behalf of the Bureau of Justice Statistics (BJS), U.S. Department of Justice, the Bureau of the Census is conducting a sample survey of law enforcement agencies in the United States. The survey will obtain current information on the workload and resources of the Nation's law enforcement agencies. BJS first conducted this survey in 1987 as part of its Law Enforcement Management and Administrative Statistics (LEMAS) program. The survey was repeated in 1990 and 1993.

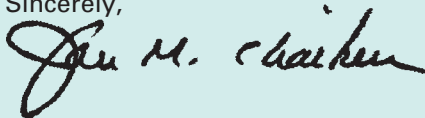
As in past years, your agency and other agencies in the scientifically selected sample will represent the characteristics and work of all law enforcement agencies in the United States. Federal, State, and local officials will use the data to assess the needs of law enforcement agencies and to keep informed of their status. BJS will publish the data in a series of reports.

So that we can complete data collection and publish the survey results as soon as possible, please complete this questionnaire within 3 weeks and return it in the enclosed envelope. If answers to questions are not readily available, provide reasonable estimates marked with an asterisk (*). You may wish to retain a photocopy of your completed reply. If you need assistance with the questionnaire, call Carolyn Gates at the Census Bureau on 1-800-352-7229.

Public reporting burden for this collection of information is estimated to average 2 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate, or any other aspects of this collection of information, including suggestions for reducing this burden, to the Director, Bureau of Justice Statistics, 633 Indiana Avenue, NW, Washington, DC 20531.

The Omnibus Crime Control and Safe Streets Act of 1968, as amended (42 USC 3732), authorizes this information collection. Although this survey is voluntary, we urgently need and appreciate your cooperation to make the results comprehensive, accurate, and timely.

Sincerely,



Jan M. Chaiken, Ph.D.
Director

Enclosures

SECTION I – OPERATIONS

1. Enter the number of facilities or sites, separate from headquarters, operated by your agency as of June 30, 1997.

District/Precinct stations.	019	<input type="text"/>
Fixed neighborhood/community sub-stations. . .	020	<input type="text"/>
Mobile neighborhood/community sub-stations. .	021	<input type="text"/>
Other – Specify ↘		
023		<input type="text"/>
	022	<input type="text"/>

2. Indicate the functions for which your agency has PRIMARY responsibility. Exclude functions which your agency performs only upon request such as aiding another agency in an emergency. *Mark (X) all that apply.*

- | | |
|--|--|
| 024 <input type="checkbox"/> Enforcement of traffic laws | 040 <input type="checkbox"/> Court security |
| 025 <input type="checkbox"/> Traffic direction and control | 041 <input type="checkbox"/> Jail operations |
| 026 <input type="checkbox"/> Accident investigations | 042 <input type="checkbox"/> Serving civil process |
| 027 <input type="checkbox"/> Dispatching calls for service | 043 <input type="checkbox"/> Civil defense |
| 028 <input type="checkbox"/> Emergency medical services | 044 <input type="checkbox"/> Fire services |
| 029 <input type="checkbox"/> Vice enforcement | 045 <input type="checkbox"/> Animal control |
| 030 <input type="checkbox"/> Fingerprint processing | 046 <input type="checkbox"/> Responding to citizen calls for service |
| 031 <input type="checkbox"/> Ballistics testing | |
| 032 <input type="checkbox"/> Crime lab services | Crime investigation for: |
| 033 <input type="checkbox"/> Underwater recovery | 047 <input type="checkbox"/> Homicide |
| 034 <input type="checkbox"/> Bomb disposal | 048 <input type="checkbox"/> Other violent crimes |
| 035 <input type="checkbox"/> Search and rescue | 049 <input type="checkbox"/> Arson |
| 036 <input type="checkbox"/> School crossing services | 050 <input type="checkbox"/> Other property crimes |
| 037 <input type="checkbox"/> Tactical operations (SWAT) | 051 <input type="checkbox"/> Environmental crimes |
| 038 <input type="checkbox"/> Parking enforcement | |
| 039 <input type="checkbox"/> Executing arrest warrants | |

3. Does your agency have primary responsibility for the enforcement of drug laws in the area under its jurisdiction?

052 1 Yes 2 No

4. As of June 30, 1997, how many officers did your agency have assigned to a special unit for drug enforcement or to a multi-agency drug enforcement task force?

	Full-time	Part-time
a. Special drug enforcement unit	054	055
b. Multi-agency drug task force	056	057

5. Are any persons arrested by your agency tested for illegal drugs prior to jail admission?

058 1 Yes 2 No

6. Enter the number and capacity of temporary holding or lockup facilities, physically separate from a jail, operated by your agency as of June 30, 1997, and the maximum holding time for adults and juveniles.

	Adults	Juveniles
a. Number of facilities	059	060
b. Total capacity	061	062
c. Maximum holding time	063 hours	064 hours

7. During the 12-month period ending June 30, 1997, which of the following types of patrol units did your agency use? Mark (X) all that apply.

	Routine patrol	Special events	Did not use
Automobile	065 <input type="checkbox"/>	066 <input type="checkbox"/>	067 <input type="checkbox"/>
Motorcycle	068 <input type="checkbox"/>	069 <input type="checkbox"/>	070 <input type="checkbox"/>
Foot	071 <input type="checkbox"/>	072 <input type="checkbox"/>	073 <input type="checkbox"/>
Horse	074 <input type="checkbox"/>	075 <input type="checkbox"/>	076 <input type="checkbox"/>
Bicycle	077 <input type="checkbox"/>	078 <input type="checkbox"/>	079 <input type="checkbox"/>
Marine	080 <input type="checkbox"/>	081 <input type="checkbox"/>	082 <input type="checkbox"/>

8. Using the most recent week available with NORMAL patrol activity (excluding holidays and special events), report the number of patrol units for each type deployed on shifts of 7 hours or longer during the two 24-hour days listed below.

Enter the sum for ALL units deployed during the 24-hour period, not just for one shift. For example, if there were 10 one-officer automobile units deployed for the 8-hour morning shift on Wednesday, 10 units for the 8-hour afternoon shift, and 10 units for the 8-hour night shift, you should enter 30 in that cell.

Type of unit	Wednesday	Saturday
Automobile	083	084
One-officer units		
Two-officer units	085	086
Motorcycle	087	088
One-officer units		
Two-officer units	089	090
Foot	091	092
One-officer units		
Two-officer units	093	094
Horse	095	096
One-officer units		
Two-officer units	097	098
Bicycle	099	100
One-officer units		
Two-officer units	101	102
Marine	103	104
One-officer units		
Two-officer units	105	106
Other – Specify ↘	107	108
109		

9. Does your agency participate in an operational 911 emergency telephone system or its equivalent (i.e. units can be dispatched as a result of a call)?

110 *Mark (X) only one.*

- 1 Yes – Basic 911 system
 2 Yes – Expanded 911 system
 3 No

10. As of June 30, 1997, which of the following types of systems did your agency have? Mark (X) all that apply.

- 111 3-digit phone number for non-emergency calls (e.g., 311)
 112 Phone-based mass notification system (e.g., reverse 911)
 113 Fax-based mass notification system

SECTION I – OPERATIONS – Continued

11. For the 12-month period ending June 30, 1997, enter the number of calls/requests for service received by your agency that originated from a 911 system, non-emergency phone number, alarm, or other source. For each, enter the number that resulted in the dispatch of 1 or more officers from your agency. Mark (*) estimates with an asterisk.

NOTE: The sum of lines b + c should equal a

	Total	911 system	Non-emergency phone numbers	Alarms	Other
a. Total calls/requests for service received	114	115	116	117	118
b. Calls/requests with officer(s) dispatched	119	120	121	122	123
c. Calls/requests with no officer dispatched (i.e., calls handled in other manner)	124	125	126	127	128

SECTION II – EQUIPMENT

1a. Does your agency SUPPLY sidearms to its regular field/patrol officers?

129

- 1 Yes
- 2 No – SKIP to question 2a

b. Which of the following types of sidearms does your agency SUPPLY to its regular field/patrol officers?

Caliber – Mark (X) all that apply.

Type	.357	.38/.380	.40	.45	9mm	10mm	Other caliber Specify
(1) Revolver	130	131	132	133	134	135	136
(2) Semi-automatic	137	138	139	140	141	142	143

2a. Are there any sidearms authorized, but not supplied by your agency, for use by its regular field/patrol officers while "on duty"?

144

- 1 Yes – Mark (X) all that apply
- 2 No – SKIP to question 3

Caliber – Mark (X) all that apply.

Type	.357	.38/.380	.40	.45	9mm	10mm	Other caliber Specify
(1) Revolver	145	146	147	148	149	150	151
(2) Semi-automatic	152	153	154	155	156	157	158

b. Does your agency give a cash allowance to regular field/patrol officers for purchase of any of the sidearms listed in 2a?

159

- 1 Yes
- 2 No

3. What are your agency's body armor policies for field/patrol officers? Mark (X) one per line.

	All	Some	None
160 Field/patrol officers supplied with body armor	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
161 Field/patrol officers given cash allowance for body armor	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
162 Field/patrol officers required to wear body armor	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

4. Which of the following types of non-lethal weapons are authorized for use by your agency? Mark (X) all that apply.

a. Impact devices

- 163 Traditional baton
- 164 PR-24 baton
- 165 Collapsible baton
- 166 Soft projectile
- 167 Rubber bullet
- 168 Other

b. Chemical agents **Personal issue** **Tactical operations**

- OC (pepper spray) 169
- CN (tear gas) 171
- CS 173
- Other 175
- 170
- 172
- 174
- 176

c. Other non-lethal weapons/actions

- 177 Hand-held electrical device-direct contact
- 178 Hand-held electrical device-stand off (e.g., taser)
- 179 Choke/carotid hold or neck restraint
- 180 Capture net
- 181 Flash/bang grenade
- 182 Other – Specify ↘

183

5. Mark (X) each vehicle type operated by your agency. Include owned, leased, rented and confiscated vehicles.

- 184 Marked cars – Enter the number operated 185
- 186 Unmarked cars – Enter the number operated 187
- 188 Fixed-wing aircraft – Enter the number operated 189
- 190 Helicopters – Enter the number operated 191
- 192 Boats – Enter the number operated 193
- 194 All-terrain vehicles (ATV)
- 195 Armored vehicles
- 196 Mobile command post vehicles
- 197 Buses
- 198 Motorcycles
- 199 3-wheel motorized vehicles
- 200 Vans
- 201 Other – Specify ↘

202

SECTION II – EQUIPMENT – Continued

6a. Does your agency allow officers to take marked vehicles home?

- 203 Yes
 No – SKIP to question 7

b. Does your agency allow marked vehicles to be driven by officers for personal use during off-duty hours?

- 204 Yes
 No

7. Enter the number of animals regularly maintained by your department for use in activities related to law enforcement.

205 Dogs

206 Horses

8. Does your agency use any of the following technologies on a regular basis? Mark (X) all that apply.

Video Camera

- 207 In patrol cars
 208 Mobile surveillance
 209 Fixed-site surveillance
 210 Other

Night Vision/Electro-Optic

- 215 Image intensifiers
 216 Infrared (thermal) imagers
 217 Laser range finders
 218 Other

Digital Imaging

- 211 Fingerprints
 212 Mug shots
 213 Suspect composites
 214 Other

Vehicle Stopping/Tracking

- 219 Tire deflation spikes
 220 Electrical/engine disruption
 221 Stolen vehicle tracking (e.g., LoJack)
 222 Other

SECTION III – COMPUTERS AND INFORMATION SYSTEMS

1. Indicate whether your agency does or does not use each computer type listed below. Mark (X) one per line.

Type of computer	Agency uses	Agency does not use
223 a. Mainframe computer	1 <input type="checkbox"/>	2 <input type="checkbox"/>
224 b. Mini-computer	1 <input type="checkbox"/>	2 <input type="checkbox"/>
225 c. Personal computer (PC)/ or Microcomputer	1 <input type="checkbox"/>	2 <input type="checkbox"/>
226 d. Laptop computer (in-field)	1 <input type="checkbox"/>	2 <input type="checkbox"/>
227 e. Car-mounted mobile digital/ data terminal (MDT)	1 <input type="checkbox"/>	2 <input type="checkbox"/>
228 f. Car-mounted mobile digital/ data computer (MDC)	1 <input type="checkbox"/>	2 <input type="checkbox"/>
229 g. Hand-held digital terminal	1 <input type="checkbox"/>	2 <input type="checkbox"/>
230 h. Other – Specify <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>

231

2. Mark (X) the functions for which your agency uses computers.

- | | |
|--|--|
| 232 <input type="checkbox"/> Crime analysis | 237 <input type="checkbox"/> In-field communications |
| 233 <input type="checkbox"/> Crime mapping | 238 <input type="checkbox"/> In-field report writing |
| 234 <input type="checkbox"/> Criminal investigations | 239 <input type="checkbox"/> Internet access |
| 235 <input type="checkbox"/> Dispatch (CAD) | 240 <input type="checkbox"/> Records management |
| 236 <input type="checkbox"/> Fleet management | 241 <input type="checkbox"/> Resource allocation |

3. Mark (X) the types of computerized files maintained by your agency.

- | | |
|--|---|
| 242 <input type="checkbox"/> Alarms | 254 <input type="checkbox"/> Stolen vehicles |
| 243 <input type="checkbox"/> Arrests | 255 <input type="checkbox"/> Stolen property other than vehicles |
| 244 <input type="checkbox"/> Calls for service | 256 <input type="checkbox"/> Summonses |
| 245 <input type="checkbox"/> Criminal histories | 257 <input type="checkbox"/> Traffic accidents |
| 246 <input type="checkbox"/> Department inventory | 258 <input type="checkbox"/> Traffic citations |
| 247 <input type="checkbox"/> Driver's license information | 259 <input type="checkbox"/> Uniform Crime Reports – Incident-Based (NIBRS) |
| 248 <input type="checkbox"/> Evidence | 260 <input type="checkbox"/> Uniform Crime Reports – Summary |
| 249 <input type="checkbox"/> Field interview information | 261 <input type="checkbox"/> Vehicle registration |
| 250 <input type="checkbox"/> Incident reports | 262 <input type="checkbox"/> Warrants |
| 251 <input type="checkbox"/> Linked files for crime analysis | |
| 252 <input type="checkbox"/> Payroll | |
| 253 <input type="checkbox"/> Personnel | |

4a. Does your agency have exclusive or shared ownership of an Automated Fingerprint Identification System (AFIS) that includes a file of digitized prints? Mark (X) only one box.

- 263 Yes – Exclusive 3 No
 Yes – Shared

b. Does your agency operate an AFIS terminal that has access to a remote AFIS site?

- 264 Yes 2 No

5. Which of the following types of data does your agency geocode and map? Mark (X) one per line.

	Yes	No
265 Calls for service	1 <input type="checkbox"/>	2 <input type="checkbox"/>
266 Arrests	1 <input type="checkbox"/>	2 <input type="checkbox"/>
267 Incidents	1 <input type="checkbox"/>	2 <input type="checkbox"/>

6. Do your agency's patrol officers have direct access to the following types of information via computer while in the field? Mark (X) one per line.

	Yes	No
268 Motor vehicle records	1 <input type="checkbox"/>	2 <input type="checkbox"/>
269 Driving records	1 <input type="checkbox"/>	2 <input type="checkbox"/>
270 Criminal history records	1 <input type="checkbox"/>	2 <input type="checkbox"/>
271 Linked files for crime analysis	1 <input type="checkbox"/>	2 <input type="checkbox"/>
272 Calls for service	1 <input type="checkbox"/>	2 <input type="checkbox"/>

7. How is field report data primarily transmitted to the department's central information system? Mark (X) one per column.

	Criminal incident reports	Traffic accident reports
	273	274
Paper report	1 <input type="checkbox"/>	1 <input type="checkbox"/>
Wireless transmission (e.g., cellular, UHF)	2 <input type="checkbox"/>	2 <input type="checkbox"/>
Telephone line (voice)	3 <input type="checkbox"/>	3 <input type="checkbox"/>
Computer medium (e.g., disk transfer)	4 <input type="checkbox"/>	4 <input type="checkbox"/>
Data device (e.g., laptop download)	5 <input type="checkbox"/>	5 <input type="checkbox"/>

8. Does your agency maintain an official site (i.e., "Home Page") on the World Wide Web/Internet?

- 275 Yes 2 No

SECTION IV – PERSONNEL

	Sworn personnel		Nonsworn personnel		
	Full-time (1)	Part-time (2)	Full-time (3)	Part-time (4)	
1. Total authorized positions on June 30, 1997	276	277	278	279	
2. Enter the actual number of full-time and part-time agency employees during the pay period that included June 30, 1997. Sum of lines a through f.	280	281	282	283	
a. Administration – Chief of police or sheriff, assistants, and other personnel who work in an administrative capacity. <i>Include finance, personnel, and internal affairs.</i>	284		285		
b. Field operations – Police officers, deputies, detectives, inspectors, supervisors, and other personnel providing direct law enforcement services. <i>Include traffic, patrol, investigations, and special operations.</i>	286		287		
c. Technical support – Dispatchers, records clerks, data processors, and other personnel providing support services. <i>Include communications, fleet management, and training.</i>	288		289		
d. Jail operations – Correctional officers, guards, cooks, janitors, and other personnel who work in the jail.	290		291		
e. Court operations – Bailiffs, security guards, process servers, etc.	292		293		
f. Other , (e.g., crossing guards, parking monitors, etc.) – <i>Specify</i> ↘ 296	294		295		
3. Of the total number of FULL-TIME sworn personnel working in field operations (2b(1) above), enter the number of uniformed officers whose regular assigned duties included:					
a. Responding to calls for service	297				
b. Serving as a Community Policing Officer	298				
c. Serving as a School Resource Officer	299				
4. Enter the number of FULL-TIME agency employees BY RACE AND SEX during the pay period that included June 30, 1997. If counts are not available from records, indicate estimates with an asterisk (*).	Sworn personnel		Nonsworn personnel		
	Male (1)	Female (2)	Male (3)	Female (4)	
a. Total number of full-time agency employees – <i>Sum of lines b through f below.</i>	300	301	302	303	
b. White, not of Hispanic origin	304	305	306	307	
c. Black, not of Hispanic origin	308	309	310	311	
d. Hispanic origin ¹	312	313	314	315	
e. American Indian/Alaskan Native	316	317	318	319	
f. Asian/Pacific Islander	320	321	322	323	
¹ Persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, excluding Brazilian, Jamaican, and Haitian.					
5. For applicants (sworn positions only), regular field/patrol officers, and nonsworn personnel, indicate the types of drug testing programs that are authorized by your agency's written policy. Mark (X) all that apply, but at least one per line.	Universal (all are tested) (a)	Random selection (b)	Reasonable suspicion of use (c)	Other (d)	Not tested (e)
(1) Applicants for employment (sworn positions)	324 <input type="checkbox"/>	325 <input type="checkbox"/>	326 <input type="checkbox"/>	327 <input type="checkbox"/>	328 <input type="checkbox"/>
(2) Regular field/patrol officers.	329 <input type="checkbox"/>	330 <input type="checkbox"/>	331 <input type="checkbox"/>	332 <input type="checkbox"/>	333 <input type="checkbox"/>
(3) Nonsworn personnel	334 <input type="checkbox"/>	335 <input type="checkbox"/>	336 <input type="checkbox"/>	337 <input type="checkbox"/>	338 <input type="checkbox"/>
6. Mark (X) all the following screening techniques that are used by your agency in selecting new officer recruits.					
339 <input type="checkbox"/> Personal interview	343 <input type="checkbox"/> Physical agility test	347 <input type="checkbox"/> Medical exam			
340 <input type="checkbox"/> Psychological screening	344 <input type="checkbox"/> Written aptitude test	348 <input type="checkbox"/> Driving record check			
341 <input type="checkbox"/> Polygraph exam	345 <input type="checkbox"/> Criminal record check	349 <input type="checkbox"/> Other – <i>Specify</i> ↘			
342 <input type="checkbox"/> Voice stress analyzer	346 <input type="checkbox"/> Background investigation				
					350

SECTION IV – PERSONNEL – Continued

7. Indicate your agency's residency requirement for new officer recruits that goes into effect at the time of employment or within one year of employment. Mark (X) only one.

- 1 Within State 4 Within metropolitan area
 2 Within county 5 Within specified miles or driving time
 3 Within municipality 6 No residency requirement

8. Indicate your agency's education requirements for new officer recruits. Mark (X) only one.

- 1 Four-year college degree required
 2 Two-year college degree required
 3 Some college but no degree required 353
 Enter number of semester hours required . . .
 4 High school diploma or equivalent required
 5 No formal education requirement

9a. How many hours of training does your agency require for new officer recruits? If no training of that type is required by your agency, then enter 0.

Enter number of classroom training hours required 354
 Enter number of field training hours required . . . 355

b. Does your agency operate its own training academy for the training of its new officer recruits?

- 1 Yes 2 No

10. What is the amount of in-service training required for your agency's field/patrol officers?

357 358
 hours every months

11. Is collective bargaining authorized for your agency's employees? Mark (X) one per line.

- | | | |
|------------------------|----------------------------|----------------------------|
| | Yes | No |
| 359 Sworn | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 360 Nonsworn | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |

12. Does your agency authorize membership by sworn officers in any of the following types of organizations? Mark (X) one per line.

- | | | |
|----------------------------------|----------------------------|----------------------------|
| | Yes | No |
| 361 Police union | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 362 Nonpolice union | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 363 Police association | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |

13. Does your agency provide any of the following to sworn full-time personnel? Mark (X) one per line.

- | | | |
|--|----------------------------|----------------------------|
| | Yes | No |
| 364 a. Hazardous duty pay | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 365 b. Shift differential pay | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 366 c. Education incentive pay | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |
| 367 d. Merit pay | 1 <input type="checkbox"/> | 2 <input type="checkbox"/> |

SECTION V – FINANCIAL INFORMATION

1. Enter your agency's expenditures for the most recently completed fiscal year. If data are not available, provide estimates and mark with an asterisk(*). Include expenditures of jails administered by your agency.

	Amount
a. Gross salaries and wages, including employer contributions to employee benefits. If employer contributions to employee benefits are NOT included in the amount above, estimate the percentage of gross salaries necessary to account for these costs (e.g., 15%, 20%). 368 %	369 \$
b. Other operating expenditures (e.g., purchase of supplies, food, and contractual services, etc.)	370 \$
c. Equipment (e.g., purchase of cars, radios, computers, etc., with a life expectancy of 5 years or more)	371 \$

2. Enter the total estimated value of money, goods, and property received by your agency from a drug asset forfeiture program during the 12 months ending June 30, 1997. If no money, goods, or property were received, enter 0.

Amount
372 \$

3. Enter total overtime hours worked, total overtime monetary payment, and total compensatory hours earned by FULL-TIME sworn personnel who worked overtime during the most recently completed fiscal year. If data are not available, provide estimates and mark with an asterisk(*).

a. Total overtime hours worked	373 Hours
b. Total overtime monetary payment	374 \$
c. Total overtime compensatory hours earned	375 Hours

4. Enter your agency's salary schedule for the following full-time positions. If a position does not exist in your department, enter "N/A".

	Base annual salary	
	Minimum	Maximum
a. Chief of police or sheriff	376 \$	377 \$
b. Sergeant or equivalent first-line supervisor	378 \$	379 \$
c. Field/patrol officer or deputy with 1 year post-academy experience	380 \$	381 \$
d. Entry-level officer or deputy (post-academy)	382 \$	383 \$

SECTION VI – POLICIES AND PROGRAMS

1. Does your agency have a separate special unit with one or more employees assigned FULL-TIME for any of the following problems or tasks? If YES, enter the number of employees assigned full-time as of June 30, 1997, in columns (1) and (2). If NO, mark one (X) box only in either column (3), (4), or (5).

Type of problem/task	Agency has a special unit with full-time personnel		Agency does not have a special unit with full-time personnel <i>Mark (X) one per line.</i>			
	Enter the number of personnel assigned full-time.		Agency has personnel who have been specially designated to handle this problem/task as needed. (3)	Agency has special policies or procedures that address this problem/task, but no specially designated personnel. (4)	Agency has no special policies or procedures, or specially designated personnel for this problem/task. (5)	
	Sworn (1)	Nonsworn (2)				
a. Bias/hate crime	384	385	386	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
b. Child abuse	387	388	389	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
c. Community crime prevention	390	391	392	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
d. Community policing	393	394	395	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
e. Crime analysis	396	397	398	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
f. Domestic violence	399	400	401	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
g. Drug education in schools	402	403	404	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
h. Drunk drivers	405	406	407	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
i. Environmental crime	408	409	410	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
j. Gangs	411	412	413	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
k. Juvenile crime	414	415	416	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
l. Missing children	417	418	419	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
m. Police-prosecutor relations	420	421	422	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
n. Repeat offenders	423	424	425	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
o. Research and planning	426	427	428	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
p. Victim assistance	429	430	431	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
q. Youth outreach	432	433	434	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

2. Does your agency have written policy directives on the following? Mark (X) one per line.

	Yes	No
435 a. Use of deadly force/firearm discharge	1 <input type="checkbox"/>	2 <input type="checkbox"/>
436 b. Handling the mentally ill	1 <input type="checkbox"/>	2 <input type="checkbox"/>
437 c. Handling the homeless.	1 <input type="checkbox"/>	2 <input type="checkbox"/>
438 d. Handling domestic disputes	1 <input type="checkbox"/>	2 <input type="checkbox"/>
439 e. Handling juveniles.	1 <input type="checkbox"/>	2 <input type="checkbox"/>
440 f. Use of less-than-lethal force	1 <input type="checkbox"/>	2 <input type="checkbox"/>
441 g. Relationships with private security firms	1 <input type="checkbox"/>	2 <input type="checkbox"/>
442 h. Off-duty employment of sworn personnel	1 <input type="checkbox"/>	2 <input type="checkbox"/>
443 i. Strip searches	1 <input type="checkbox"/>	2 <input type="checkbox"/>
444 j. Code of conduct and appearance	1 <input type="checkbox"/>	2 <input type="checkbox"/>
445 k. Use of confidential funds	1 <input type="checkbox"/>	2 <input type="checkbox"/>
446 l. Employee counseling assistance	1 <input type="checkbox"/>	2 <input type="checkbox"/>
447 m. Citizen complaints	1 <input type="checkbox"/>	2 <input type="checkbox"/>
448 n. Maximum hours worked by officers.	1 <input type="checkbox"/>	2 <input type="checkbox"/>
449 o. Discretionary arrest power	1 <input type="checkbox"/>	2 <input type="checkbox"/>

3. Which of the following best describes your agency's pursuit driving policy? Mark (X) only one.

- 1 Judgmental (leaves decisions to officer's discretion)
- 2 Restrictive (restricts decisions of officers to specific criteria (e.g., type of offense, top speed, etc.))
- 3 Discouragement (discourages all pursuits)
- 4 Other – Specify ↴
451
- 5 Agency does not have a written policy pertaining to pursuit driving

4a. Is there a civilian complaint review board/agency in your jurisdiction that reviews excessive force complaints against your department?

- 452 1 Yes
- 2 No – SKIP to question 5

b. To whom does the civilian complaint review board/agency report? Mark (X) all that apply.

- 453 Law enforcement executive (chief, sheriff, etc.)
- 454 Government executive (mayor, commissioner, city manager, etc.)
- 455 Governmental body (city/county council, commission, etc.)
- 456 Other – Specify ↴
457

c. Does this civilian complaint review board/agency have independent investigative authority with subpoena powers?

- 458 1 Yes
- 2 No

5. Who conducts administrative (non-criminal) investigations of citizen complaints about police use of excessive force? Mark (X) all that apply.

- 459 Law enforcement executive (chief, sheriff, etc.)
- 460 Internal affairs unit
- 461 Other sworn agency personnel (not listed above)
- 462 Other – Specify ↴
463

SECTION VI – POLICIES AND PROGRAMS – Continued

6. Who has the final responsibility for acting on the recommendations for disciplinary action in cases involving the use of excessive force, prior to appeal (non-legal)? *Mark (X) all that apply.*

- 464 1 Law enforcement executive
 465 2 Other sworn agency personnel
 466 3 Government executive
 467 4 Other – *Specify* ↘

468

7. Does your agency have a policy requiring that citizen complaints about excessive force receive separate investigation outside the chain of command where the accused officer is assigned?

- 1 Yes 2 No

8. Who has the right to administrative appeal in cases involving the use of excessive force?

Yes No

- 470 Citizens 1 2
 471 Officers 1 2

SECTION VII – COMMUNITY POLICING ACTIVITIES

1. Does your agency have a community policing plan? *Mark (X) only one.*

- 472 1 Yes, formally written
 2 Yes, not formally written
 3 No

2. During the 3-year period ending June 30, 1997, what proportion of each of the following types of agency personnel received at least 8 hours of community policing training (e.g., problem solving, SARA, community partnerships, etc.)? *Mark (X) one per line.*

	All	More than half	Less than half	None
475 New officer recruits	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
476 In-service sworn personnel . .	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
477 Civilian personnel.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

3. During the 12-month period ending June 30, 1997, which of the following did your agency do? *Mark (X) all that apply*

- 478 Train citizens in community policing (e.g., community mobilization, problem solving)
 479 Give patrol officers responsibility for specific geographic areas/beats
 480 Assign detectives to cases based on geographic area/beat
 481 Actively encourage patrol officers to engage in SARA-type problem-solving projects on their beats
 482 Include collaborative problem-solving projects in the evaluation criteria of patrol officers
 483 Form problem-solving partnerships with community groups, municipal agencies, or others through specialized contracts or written agreements
 484 None of the above

4. During the 12-month period ending June 30, 1997, which of the following groups did your agency regularly meet with to address crime-related problems? *Mark (X) all that apply.*

- 485 Neighborhood associations
 486 Tenants' associations
 487 Youth service organizations
 488 Advocacy groups
 489 Business groups
 490 Religious groups
 491 School groups
 492 Other – *Specify* ↘

493

- 494 Did not meet with any groups

5a. During the 12-month period ending June 30, 1997, did your agency survey the citizens in its jurisdiction to gather any of the following information? *Mark (X) all that apply.*

- 495 Public satisfaction with police services
 496 Public perceptions of crime/disorder problems
 497 Personal crime experiences
 498 Other – *Specify* ↘

499

- 500 Did not survey the general public – *SKIP to question 6*

b. For which purposes, does your agency use the survey information described in 5a. above? *Mark (X) all that apply.*

- 501 Allocating resources to targeted neighborhoods
 502 Prioritizing crime/disorder problems
 503 Formulating agency policy and procedures
 504 Redistricting beat/reporting areas
 505 Providing information to patrol officers
 506 Other – *Specify* ↘

507

6a. As of June 30, 1997, did your agency provide citizens with regular access to crime statistics or crime maps?

- 508 1 Yes – *GO to 6b*
 2 No – *STOP here*

b. Can citizens routinely access crime statistics or crime maps through any of the following methods? *Mark (X) all that apply.*

- | | |
|--|---|
| 509 <input type="checkbox"/> In-person | 514 <input type="checkbox"/> Newspaper |
| 510 <input type="checkbox"/> Telephone | 515 <input type="checkbox"/> Radio |
| 511 <input type="checkbox"/> Internet/web-page | 516 <input type="checkbox"/> Television |
| 512 <input type="checkbox"/> Public kiosk/terminal | 517 <input type="checkbox"/> Other – <i>Specify</i> ↘ |
| 513 <input type="checkbox"/> Newsletter | 518 |

c. What level of crime statistics/maps can citizens in your jurisdiction routinely access? *Mark (X) all that apply.*

- | | |
|---|---|
| 519 <input type="checkbox"/> County | 525 <input type="checkbox"/> Neighborhood |
| 520 <input type="checkbox"/> City | 526 <input type="checkbox"/> Apartment complex |
| 521 <input type="checkbox"/> District | 527 <input type="checkbox"/> Census block |
| 522 <input type="checkbox"/> Precinct | 528 <input type="checkbox"/> Street |
| 523 <input type="checkbox"/> Census tract | 529 <input type="checkbox"/> Block |
| 524 <input type="checkbox"/> Patrol beat | 530 <input type="checkbox"/> Other – <i>Specify</i> ↘ |

531