Counting cops: estimating the number of police departments and police officers in the USA

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Introduction

Over the past three decades, there have been numerous attempts to count the number of law enforcement officers and agencies in the USA. A quick review of these estimates (see Table I and Table II) shows that they range widely depending on the time period under study, the source of the estimate and the methodology used. Using multiple data sources, this study investigates why different sources produce different estimates. While some of the disparity can be attributed to trivial errors such as inaccurate and duplicate database entries, others are based in more substantive issues, such as how to define a police officer and a police agency. After thoroughly exploring all of the issues involved in counting police, we generate new estimates of the number of police officers and police agencies in the USA.

The difficulty in counting police is in some ways a uniquely American problem. The USA has the most decentralized police coverage of all western democracies. The US federal system of government led thousands of local governments to create their own police forces. Each of these forces is separate and distinct, under autonomous command. Though most have informal or formal mutual aid agreements (in case of emergency) with those in neighboring communities, they are independent entities with their own unique sets of policies and procedures. These departments have a confusing array of conflicting and overlapping jurisdictions, both geographically and functionally. The impact is that, to a greater extent than in other democratic nations, citizens

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Table I.
Published estimates of the number of full-time law enforcement employees

Year	Citation	Total employees	Sworn employees	Civilian employees	Total FT equivalent employees	Types of agencies included in estimate: Local police	State police	Sheriffs	Federal agencies	Special police
1960	Cobern (1973, p. 189)	272,000				✓				
1966	Cobern (1973, p. 189)	319,000				✓				
1966	President's Commission (1967, p. 8)	371,000	325,000	46,000						
1969	Cobern (1973, p. 193)	366,000	320,000	46,000		✓				
1969	Hindelang *et al.* (1974, p. 86)	523,000	395,000	128,000		✓	✓	✓	✓	
1969	LEAA (1970, p. 11)	454,712			466,607	✓	✓	✓		
1971	Cobern (1973, p. 199)	420,000	360,000	60,000		✓				
1972	BJS (1989a, p. xxviii)				547,555	✓	✓	✓	✓	✓
1977	BJS (1989a, p. xxviii)				650,015	✓	✓	✓	✓	✓
1977	BJS (1983, p. 47)				488,832	✓				
1982	BJS (1985, p. 2)	587,556			604,961	✓	✓	✓		✓
1985	BJS (1989a, p. xxviii)				693,245	✓	✓	✓	✓	
1986	BJS (1988, p. 63)				533,247	✓				
1986	Reaves (1993, p. 3)	666,761	496,143	170,618		✓	✓	✓		
1987	BJS (1989b, p. 1)	757,508	555,364	202,144		✓	✓	✓		
1987	US Bureau of the Census (1991, p. 2)				714,000	✓	✓	✓	✓	✓
1988	BJS (1990, p. 6)	728,018			745,935	✓	✓	✓	✓	✓
1990	Lindgren (1992, p. 6)	746,736			764,382	✓	✓	✓	✓	✓
1990	Reaves (1992b, 2)	793,020	595,869	197,151		✓	✓	✓		✓
1992	Reaves (1993, p. 2)	841,099	603,954	237,145		✓	✓	✓		✓
1992	US Bureau of the Census (1994, p. 5)	684,980	529,756	155,224	714,708	✓	✓	✓		✓
1993	Reaves (1994, p. 1)		47,129						✓	
1993	Bayley (1994, pp. 164-5)		560,799-649,037			✓	✓	✓	✓	✓
1993	Reaves (1996, p. 1)	828,435	622,913	205,552		✓	✓	✓		✓

Year	Source	Total agencies	Total by agency type: Federal	State	Local	Sheriff	Special
1940	Smith (1940)	40,000[a]			>36,000	>3,000	
1960	Smith (1960, p. 25)	40,000[a]			>36,000	>3,000	
1966	President's Commission (1967)	40,000	50	200	36,700	3,050[b]	
1971	LEAA (1972, p. 1)	14,901[c]					
1974	LEAA (1974, p. 1)	20,158			14,349	3,114	2,695[d]
1977	BJS (1983, p. 47)	>17,663	>50	52	13,362	3,077	1,122
1986	BJS (1988, p. 63)	>17,707	>50	51	13,641	>3,000	965
1987	BJS (1989a, p. 2)	15,118		49	11,989	3,080	
1990	Reaves (1992b, p. 2)	16,961		49	12,288	3,093	1,531
1992	Reaves (1993, p. 4)	17,358		49	12,502	3,086	1,721
1993	Reaves (1996, p. 1)	17,120		49	12,361	3,084	1,626

Notes:

[a]Estimate includes federal and state agencies, but figures are not enumerated for these categories

[b]Includes a handful of county police agencies

[c]This estimate excluded agencies serving populations less than 1,000 in 1960 (LEAA, 1972, p. 7)

[d]These special police agencies included 500 specialized local agencies, 488 specialized state agencies and 1,707 coroners and medical examiners

Table II.
Published estimates of the number of law enforcement agencies

in the USA are often subject to the authority of multiple general purpose law enforcement agencies at the local, county, state and other specialized levels (Bayley, 1992). Some blame the fragmentation of the US policing industry for hampering professional law enforcement and slowing prospects for the spread of innovation. These critiques have led many reformers to suggest that small agencies should be consolidated into larger, more professional, regional police agencies (Murphy and Plate, 1977; Ostrom and Smith, 1976). Others see it as the hallmark of democracy and federalism that local communities are free to police themselves as they see fit within constitutional boundaries. In either case, the fragmented nature of the US police makes it very difficult to estimate their numbers.

In other ways, the difficulty in counting police is a global problem. As Reiss (1992, p. 54) asserts, "the question of what counts as a police organization continues to bedevil scholars". There are many different types of police, both in the USA and abroad (Bayley, 1992). Some are general purpose police who possess the rights of apprehension, detection and investigation for a wide range of offenses within a particular governmental jurisdiction. Others are more specialized, possessing the same powers, but only authorized to exercise them

within certain geographical or functional boundaries. Hospital police, for instance, are geographically specialized, because their police powers are authorized only within the buildings and grounds of the hospital facilities. Fish and wildlife police, on the other hand, are functionally specialized, because although they are authorized to exercise their police powers over a broad geographic area, these powers are limited to a narrow range of offenses. With the emergence of the private security industry as a growing international movement, confusion over what constitutes a police officer and police agency continues to grow.

Regardless of how many police officers there are in the USA, popular sentiment appears to support the notion that hiring more of them is at least one of the answers to the perceived growing crime problem in this country (Maguire and Pastore, 1995, p. 172). In his 1992 presidential campaign, Bill Clinton promised that if elected, he would initiate legislation to put 100,000 new police officers on the streets of America. Once in office, Clinton succeeded in fulfilling his campaign promise after a lengthy and well-publicized battle with congress. On 13 September 1994, President Clinton signed into law the Violent Crime Control and Law Enforcement Act (the "Crime Act"): the largest single federal investment in the history of local criminal justice. Nearly $9 billion of this appropriation was earmarked for the "Cops on the Beat Program" which promised to "substantially increase the number of law enforcement officers interacting directly with members of the community" (US Congressional Record, 1994). With this legislation, President Clinton set into motion the administrative machinery to put 100,000 new police officers on the streets of the USA.

Weeks later, before an audience of politicians and police chiefs assembled on the South Lawn of the White House, Clinton (1994a) remarked:

> Let me say again that 100,000 police officer is a number that doesn't mean a lot to the average American. Most Americans don't know how many police we have now. They don't know how many that is; they're not sure what it means on their block. There are 550,000 police officers in America today – 100,000 police is nearly a 20 percent increase.

Three estimates of the number of police officers in the USA were available at the time of Clinton's speech (see Table I): the Census Bureau at approximately 525,000; the FBI at about 550,000; and the Bureau of Justice Statistics, at over 600,000. Clinton chose the middle value of the three estimates[1].

At around the same time, Bayley (1994, p. 165) was having a difficult time wrestling with these different sources. Estimating the range of full-time sworn officers as approximately 561,000 to 649,000, Bayley concluded with a rhetorical question: "what does it say when a superpower does not know the number of its police officers within a margin of error of almost 100,000 (14 percent)?". Bayley's experience with trying to count cops is ironic – President Clinton promised to increase the number of police officers in the USA by 100,000 and current estimates of the number of police officers in this country differ by nearly 100,000. If we do not currently know how many police officers are employed in

the USA, how can we evaluate the administration's success at placing 100,000 new officers on the streets?

This is not the first time that this issue has been raised among researchers. Cobern (1973) argued over 20 years ago that accurate estimates of police "manpower" are important for designing public policy. Walker (1983, p. 31) suggests that the estimated number of police forces in the USA is controversial and is one example of the "general lack of reliable data on the American police". In a recent edited volume containing current research on the police by a distinguished slate of authors, three separate chapters mentioned the complexity of counting cops. Reiss (1992) reminds us that for much of the twentieth century, we "vastly overestimated their numbers" and Bayley (1992, p. 512) suggests that in contrast with other nations, counting police forces in the USA "is impossible". Similarly, Geller and Morris (1992, p. 245) note that:

> Attempting to arrive at a reliable tally of all publicly funded, full-time sworn police officers in the USA, despite the efforts of the FBI each year in its *Crime In the United States* publication, is as daunting a task as trying to enumerate the federal agencies empowered to use lethal force in the apprehension and arrest of criminal suspects. Neither the Justice Department, the Labor Department, nor the US Census Bureau is able to provide a complete count of America's police.

Despite these critiques, researchers have acknowledged that our knowledge about the number of police has improved since the late 1960s (Bayley, 1992, p. 512; Reiss, 1992). Bayley credits the Justice Department with stabilizing "this chaotic situation".

For the past several decades, the job of counting cops has rested with a number of government agencies. The FBI, the Census Bureau, the Bureau of Justice Statistics and various segments of the Law Enforcement Assistance Administration have all played a part in estimating the number of police in the USA. These agencies, using different methodologies, have produced a variety of sometimes consistent and sometimes inconsistent estimates. After briefly tracing the history of these attempts to count our police, this study dissects the two most current agency-level databases containing information on American police agencies. The result is a more fundamental understanding of the issues involved in counting cops. Next, we introduce a third data source that has recently been established by the Office of Community Oriented Policing Services (COPS) at the US Department of Justice. Using all three sources, we develop our own estimates of the number of police officers and police agencies in the USA. We then examine how the COPS Office counts law enforcement officers and provide a baseline estimate useful for determining the Clinton Administration's success putting 100,000 new officers on the streets. Lastly, we present a modest set of recommendations that government agencies might implement to produce more consistent estimates when counting cops.

Counting cops: a brief history

Two agencies within the USA Department of Justice – the Federal Bureau of Investigation and the Bureau of Justice Statistics – currently serve as primary sources for national statistics on law enforcement agencies and their employees.

The FBI's annual Uniform Crime Reports database is a compilation of criminal justice data on offenses, arrests and police employees throughout the country. The Bureau of Justice Statistics, like its predecessors under the Law Enforcement Assistance Administration, produces a number of police-related publications based on data collected in concert with the Census Bureau. The Law Enforcement Directory Survey and the Justice Expenditure and Employment series are both directed and reported by BJS based on data collected by the Census Bureau. These sources have historically provided the most comprehensive information on police agencies and their employees.

Uniform Crime Reports

In 1930, the Attorney General designated the Federal Bureau of Investigation as the national clearinghouse for crime data (IACP, 1930). Since then, the FBI has annually published selected data on the number of reported crimes, arrests and police employees in the USA as part of its Uniform Crime Reports series. UCR data collection techniques have become standardized and procedures for reporting have been institutionalized over the past 60 years. Agency participation, though voluntary, is encouraged by both the International Association of Chiefs of Police and the National Sheriff's Association and facilitated by UCR committees within each state (FBI, 1981). Although the FBI does not claim that their data represent a thorough snapshot of crime in the USA, UCR figures are continually relied upon as the best single source of reported crime statistics in the country. For nearly three decades, researchers have criticized the UCR crime data as an inaccurate representation of crime in the USA due to several inherent flaws, including nonreporting and differential reporting practices. The police employee data, to our knowledge, has never been subject to the same levels of scrutiny and/or controversy as the data on offenses and arrests.

The FBI does not claim that its list of police agencies is comprehensive. They are only able to provide officer counts for those agencies that report these numbers to either the state UCR reporting agencies, or to the FBI directly[2]. Written FBI reports indicate that in 1993, only 13,041 agencies reported information on law enforcement employment. These agencies employed over 550,000 officers and served a collective population of over 244 million, or nearly 95 percent of the US population (FBI, 1994).

Law Enforcement Directory Survey

Unlike the Uniform Crime Reporting program, the Law Enforcement Directory Survey has been sponsored by several different agencies and has experienced a number of methodological changes since its inception. Title I of Public Law 90-351, the Omnibus Crime Control and Safe Streets Act of 1968, authorized the Law Enforcement Assistance Administration to collect, analyze and disseminate statistics on law enforcement throughout the USA (LEAA, 1972). In response, the LEAA entered into an inter-agency agreement with the Census Bureau to conduct a national survey in order to produce a national directory of

criminal justice agencies (LEAA, 1972). In January 1970, the Census Bureau launched the National Directory Survey of Criminal Justice Agencies project. They mailed surveys to all counties, townships and municipalities with a 1960 population greater than 1,000 asking each government to identify any criminal justice agencies within its jurisdiction (LEAA, 1972). State criminal justice agencies were accounted for through internal research rather than through survey questionnaires (BJS, 1980). This first major agency-level survey identified 14,901 enforcement agencies, including "state, county and municipal police or law enforcement agencies with sworn police officers" (LEAA, 1972, p. 7). The report cautioned, however, that the failure to include agencies serving jurisdictions with fewer than 1,000 people could mean that there were between 10,000 and 25,000 agencies missing from the directory.

Between 1970 and 1974, the Directory Survey project expanded in scope to include agencies serving jurisdictions of less than 1,000. In addition, the Census Bureau made an effort to update the directory over this period, not by conducting a new survey, but instead with continuous in-house research and database maintenance activities (LEAA, 1974; BJS, 1980). By 1974, the expanded coverage and updating processes had increased the size of the directory to include 20,158 separate police agencies (LEAA, 1974). In 1978, a second Directory Survey was conducted, identifying almost 20,000 separate state and local law enforcement agencies.

In 1979, an amendment to Public Law 90-351 created an umbrella agency – the Office of Justice Assistance, Research and Statistics – under which the National Institute of Law Enforcement and Criminal Justice, the Bureau of Justice Statistics and the LEAA were to operate (Feeley and Sarat, 1980, p. 60). Statistical reporting became more formalized under this amendment and was to become housed within the Bureau of Justice Statistics (BJS). The Bureau of the Census maintained its interagency agreement with the Department of Justice in collecting criminal justice data, while BJS rather than the LEAA updated and reported on the information. In 1986, the Census Bureau conducted another mail survey to update the law enforcement sector of their criminal justice agency list, identifying nearly 16,000 separate law enforcement agencies. This list of agencies became known as the Directory Survey of Law Enforcement Agencies. In 1992, the Census Bureau conducted another mail update, this time identifying over 17,000 separate law enforcement agencies. The Directory Survey of Law Enforcement Agencies was updated again in 1996, but neither the data nor the findings of this study were available as this article went to press.

BJS uses the Directory Survey data as a sampling frame for collecting more comprehensive data from a nationally representative sample of approximately 3,000 police agencies in its Law Enforcement Management and Administrative Statistics (LEMAS) series. The LEMAS survey was first distributed in 1987 and subsequent surveys were issued in 1990 and 1993. The next surveys are scheduled for 1997 and 2000. Because the LEMAS data and the Directory

Survey data are typically collected in different years, information gathered during LEMAS is sometimes used to update the Directory Survey.

Justice Expenditure and Employment

Like the Directory Survey project, the Justice Expenditure and Employment series has a complicated history involving the Census Bureau and various components of the Justice Department. Every five years since 1957, the Bureau of the Census has taken a census of governments at the federal, state, county and local government levels (US Bureau of Census, 1991, p. v). One of the primary components within this census is the Compendium of Public Employment, which asks all governments to provide comprehensive information on employment and expenditures in a number of different functional areas including "police protection". This information is collected from a sample of the state and local agencies handling payrolls, thus in most cases, data are not derived from individual law enforcement agencies directly. In 1967, BJS began to extract these data from the Census Bureau and publish them in their annual Expenditure and Employment Data for Criminal Justice Agencies. In 1971, a different sampling strategy was devised so that the expenditure data could be used by the LEAA in making block grant decisions based on a specified allocation formula (BJS, 1991). In late 1980, with the demise of LEAA, the Justice Expenditure and Employment Data series was cancelled for budgetary reasons (BJS, 1988). In 1982, BJS brought back this collection with a reduction in its inclusiveness and entitled it Justice Expenditure and Employment and has published the series ever since on an annual basis (BJS, 1984). Although the census is only mandated to provide information on state and local agencies, it also provides allotted budget information for federal agencies (BJS, 1988).

Summary

The Uniform Crime Reports, the Directory Survey of Law Enforcement Agencies and the Justice Expenditure and Employment series are the three primary sources for counting cops in the USA. The first two sources are agency-level databases that contain information on all police agencies known to each source, while the third produces estimates based on a sample of law enforcement agencies. In this study, we examine the degree of overlap between the first two data sources in order to produce better estimates of the number of police officers and police departments in the USA.

Methodology

This study evolved from an effort by the Office of Community Oriented Policing Services (COPS) to develop a single list of all police agencies in the USA, together with limited information such as mailing addresses, telephone numbers, population served and number of sworn and civilian employees. COPS is a component of the US Department of Justice that was created to implement the community policing and police hiring provisions (title one) of the

1994 Crime Act. COPS needed a comprehensive list of police agencies for three reasons: first, to serve as a central mailing list of all police agencies in the country for mass-distributing grant announcements and other materials; second, the limited data contained in such a list could be used as a watermark for studying the types of agencies who apply (and don't apply) to COPS for federal community policing grants; and third, to serve as a sampling frame for studies seeking to extract a representative sample of American police agencies. To date, over 9,000 police agencies of all types have applied to COPS and thousands more are expected in coming years.

When grant applications arrive at COPS, they are immediately assigned a unique seven-character alphanumeric agency identification code (called an "ORI") for tracking purposes. The ORI code is assigned by the FBI's National Criminal Information Center (NCIC) to all police agencies in the country and this code also serves as the primary key for all records in the FBI's Uniform Crime Reports. COPS obtained a copy of the 1993 UCR database directly from the FBI and used this database, among other purposes, to identify grant applicants and assign them the correct ORI code. Thus, the Uniform Crime Reports database served as an important source for checking that applicants were "legitimate" law enforcement agencies and for keeping track of the thousands of grant applications that were received.

One problem that quickly emerged with this system was that many of the applicant police agencies were not listed in the UCR database. To ensure that COPS grant applicants not represented in the UCR were legitimate police agencies, staff members began to check the second comprehensive list of police departments: the 1992 Directory Survey of Law Enforcement Agencies (LEDS). To our surprise, we discovered that some agencies applying to COPS were not represented in either list. Further probing revealed that the the UCR and LEDS database each contained thousands of agencies not listed in the other. Because these two databases serve as primary sources for current estimates of police strength in the USA, we began to suspect that these estimates may be flawed.

In order to produce more valid estimates and at the same time to create a single comprehensive mailing list of all police agencies in the USA, we decided to combine these three rich data sources. Since LEDS professes to be the most comprehensive list, we sought to identify those agencies in the other two lists that were not represented in LEDS. The only organized way to accomplish this task was to match individual records in the UCR and COPS databases to individual records in the LEDS database. Since both the COPS and UCR databases contained an ORI code as a primary key, we decided to use this as a means of matching agencies. Using a variety of database algorithms and a team of trained coders, we assigned an ORI code to every agency in the LEDS database[3]. With all three databases containing the same agency identification code, we were then able to create a single comprehensive list of known law enforcement agencies in the USA. In addition, we were able to extract more accurate estimates of the number of police officers and police agencies in the USA.

Results

Local police

For purposes of this analysis, the term "local police" includes all general purpose police agencies serving towns, townships, villages, boroughs, cities, counties and tribal populations. As shown in Table III, the UCR includes information on 11,771 local police agencies employing a total of approximately 372,000 sworn officers, while LEDS includes 12,503 agencies employing approximately 373,000 officers. Examining these data more closely, we find that the list of agencies in the UCR data contains 1,703 agencies not listed in LEDS, employing a total of 6,820 full-time sworn officers. In addition, COPS contains information on an additional 422 agencies, employing 3,636 full-time equivalent sworn officers, that are not listed in either UCR or LEDS. Combining all three sources, there may be as many as 14,628 local police agencies, employing a total of 383,873 full-time sworn officers.

Table III.
Police agencies by type in 1992-93

Type	Agencies		FT sworn officers	
	FBI	Census	FBI	Census
Local police	11,771	12,503	372,351	373,417
State police	1,409	49	59,858	52,980
Sheriff	3,064	3,084	124,125	137,193
Special police	1,951	1,708	23,154	41,139
Total	18,195	17,344	579,488	604,729

State police

The UCR and LEDS record information from state police agencies in completely different ways and therefore it is difficult to compare the two sources. LEDS contains information on 48 primary state police agencies in the USA[4]. The UCR, on the other hand, contains information on 1,409 state police facilities because it lists individual state police precincts as separate agencies. LEDS estimates that there are approximately 53,000 full-time sworn officers employed by state police agencies, whereas the UCR estimates the number to be nearly 60,000.

There are several reasons for the discrepancies in state police employment estimates. First, the UCR double counted employees in at least four state police agencies: New York, Minnesota, Delaware and Georgia[5]. The exact extent of this error is unknown, but the New York State Police figure is most likely off by 3,457, the Minnesota figure by 432, the Delaware figure by 489 and the Georgia figure by 844, resulting in an error of 5,222 sworn officers. LEDS is missing an entry for Alaska State Police which employs roughly 356 officers, though coding patterns suggest that this agency may have possibly been mis-entered as "University of Alaska-Anchorage Campus Police". Factoring in these errors and omissions, there are 49 state police agencies in the USA that employ approximately 53,336 full-time sworn officers[6].

Sheriffs' agencies

Sheriffs are elected officials with responsibility for a broad array of functions. Unlike local police departments, most sheriffs' agencies are responsible for a variety of duties not directly related to law enforcement. For example, Reaves (1992a, p. 4) found that in the 1990 LEMAS survey, the "percentage of sheriffs' departments with primary responsibility for operating a jail (81 percent) was 16 times higher than the percentage of local police departments (5 percent)". Similarly, sheriffs' agencies were five times as likely to provide court security and nine times more likely to have responsibility for serving civil process. Nearly all sheriffs' agencies have jurisdiction over counties, though a handful serve cities.

Although the UCR and LEDS have fairly similar estimates of the number of sheriffs' agencies, their employee estimates are more problematic. As shown in Table III, the UCR contains information for 3,064 sheriffs' agencies employing a total of approximately 125,000 full time sworn deputies, whereas LEDS lists 3,084 agencies employing approximately 137,000 deputies. In addition, closer examination of the two data sources reveals that the UCR contains information on 35 sheriffs' agencies not listed in LEDS, employing a total of 328 full-time sworn deputies. In addition, COPS contains information on another 37 sheriffs agencies, employing 464 full-time equivalent deputies. Combining all three sources, there may be as many as 3,156 sheriffs agencies in the USA employing up to 137,985 sworn deputies.

The large difference between the number of sworn officers in sheriffs' agencies listed in the UCR and those listed in LEDS is directly related to differences in how each source defines a law enforcement officer. This discrepancy will be further analyzed in subsequent discussions about definitional issues in counting cops.

Special police

Special police are those that serve specialized jurisdictions or enforce only a small subset of laws. Agencies can be functionally specialized, enforcing only alcoholic beverage statutes for instance, or they can be geographically specialized, with jurisdiction over a limited area, such as the buildings and grounds of a university. Airport police, school police, drug task forces and District Attorney investigation units are just a few examples of the types of special police agencies in the USA. Table IV lists some of the special police agencies listed in the LEDS and UCR databases. Altogether, the UCR lists 1,951 special police agencies employing a total of approximately 23,000 full-time sworn officers, whereas LEDS lists 1,708 special police agencies employing approximately 41,000 officers. Surprisingly, most of the agencies listed in the UCR are not listed in LEDS. Altogether, the list of special police agencies in the UCR data contains 1,442 agencies not listed by LEDS, employing a total of 11,008 full-time sworn officers. In addition, COPS data include 130 agencies not listed in either of the other two sources, employing a total of 6,542 sworn

Type	Agencies FBI	Agencies Census	FT sworn officers FBI	FT sworn officers Census
Airport	33	22	968	1,563
Alcoholic beverage control	172	12	839	959
Capitol	9	13	354	806
College and university	547	638	9,103	9,754
Constable/Marshal	39	755	388	1,721
Fire investigation	2	8	40	437
Housing	1	8	0	2,978
Marine	74	28	580	2,935
Medical facilities	27	16	465	468
Natural resources	151	38	2,011	5,845
Parks and recreation	192	56	1,902	1,987
Prosecutor/court	23	35	1,668	720
Roads, bridges and trains	247	5	1,217	550
School	22	42	315	3,794
Social service/welfare	2	1	8	326
Transit	38	9	746	5,698
Other	372	22	2,550	598
Total	1,951	1,708	23,154	41,139

Table IV.
Special police agencies and police officers by agency type in 1992-93

officers. Combining all three of these sources, there may be as many as 3,280 special police agencies, employing a total of 58,689 full-time sworn officers.

Federal law enforcement

The number of federal agencies with policing responsibilities and the number of federal employees engaging in such duties is very difficult to estimate. Neither the Uniform Crime Reports nor the Law Enforcement Directory Survey track federal law enforcement employees or agencies. The Justice Expenditure and Employment data series estimates these levels, though in the past, their estimates have contrasted widely with other estimates. Walker (1983, p. 43), arguing that there "is no agreement about the exact size of federal law enforcement activities", cites a GAO report that estimates the number of federal employees engaged in police protection activities in 1977 at 169,625 (including civilian and sworn). The Expenditure and Employment Data estimate for that same year places the figure at 73,559. The discrepancy between estimates, Walker notes, "arises from different interpretations of the meaning of law enforcement. In the broadest sense, the terms law enforcement or police refers to the general regulatory functions of government". A narrower estimate of federal law enforcement, Walker argues, would include only agencies whose primary mission is protection, enforcement or investigation. In between is a

large gray zone of agencies whose primary mission is not law enforcement, but that contain segments responsible for law enforcement functions (e.g. Geller and Morris, 1992).

Fortunately, the Bureau of Justice Statistics has stepped in to fill this obvious gap in our knowledge of federal law enforcement. Reaves (1994) conducted a census of federal law enforcement agencies, examining their myriad duties and estimating their employment levels within a variety of functional areas. According to his estimates, as of December 1993, 30 separate federal agencies employed approximately 69,000 sworn law enforcement personnel authorized to carry weapons and make arrests. Of these, 40,002 worked in criminal investigation and enforcement, 7,127 performed police response and patrol functions and 20,870 worked in security and protection duties, corrections, or work related to courtroom operations. For purposes of this study, only those that perform actual law enforcement functions such as criminal investigation and enforcement and those that engage in police patrol and response duties, will be counted as federal law enforcement officers. Thus, about 30 separate federal agencies, bureaus and departments employ 47,129 full-time sworn federal law enforcement officers[7].

Total agencies and officers

This study used the LEDS database as a baseline list of police agencies and then examined the FBI Uniform Crime Reports and COPS databases to identify agencies not listed in LEDS. Tables V and VI report the baseline LEDS estimates of the number of agencies and the number of officers, together with estimates for the "unique" agencies found in the UCR database (which includes all agencies not in LEDS) and the COPS database (which includes all agencies not in LEDS or UCR).

Taking into account all three data sources and the estimates covered within each agency type, there may be as many as 21,143 law enforcement agencies in

Agency type	Agencies in in LEDS	Unique agencies in FBI	Unique agencies in COPS	Total agencies
Local	12,503	1,703	422	14,628
State	48	1	0	49
Sheriff	3,084	35	37	3,156
Special	1,708	1,442	130	3,280
Federal	[a]	[a]	[a]	30[b]
Total				21,143

Notes

[a]None of these sources contain data on federal law enforcement agencies

[b]This figure comes from the recent census of federal law enforcement agencies conducted by the Bureau of Justice Statistics (Reaves, 1994)

Table V.
New agency estimates based on multiple sources

Agency type	Sworn officers in LEDS agencies	Sworn officers in FBI agencies	Sworn officers in unique COPS agencies	Total full-time sworn officers
Local	373,417	6,820	3,636	383,873
State	52,980	356	0	53,336
Sheriff	137,193	328	464	137,985
Special	41,139	11,008	6,542	58,689
Federal	[a]	[a]	[a]	47,129[b]
Total	604,729	18,512	10,642	681,012

Notes

[a]None of these sources contain data on federal law enforcement agencies

[b]This figure comes from the recent census of federal law enforcement agencies conducted by the Bureau of Justice Statistics (Reaves, 1994)

Table VI.
New sworn officer estimates based on multiple sources

the USA employing up to 681,012 full-time sworn officers. Excluding federal agencies and employees, which none of these three sources estimates, this is a 21 percent difference in the number of agencies identified by LEDS and a 4.9 percent difference in the number of full-time sworn employees. While these figures should only be construed as rough estimates based on information available in the three databases examined for this study, they do show that the numbers of police agencies and officers in the USA have been systematically underestimated in previous studies. Using more restrictive definitions of what constitutes a police officer or a police agency would result in lower estimates.

Later in the paper we discuss how different definitions impact officer and agency counts. Readers are cautioned that these numbers were obtained from existing official government databases and not from a thorough original census of police agencies. Therefore, if any of these three databases contains agencies that no longer exist (which is likely), then these figures overestimate the number of police officers and agencies in the USA. These estimates should be considered as "ceilings".

Discussion

While examining these three data sources, we encountered hundreds of problems, issues and dilemmas in trying to arrive at an accurate count of police officers and agencies. While some of the problems involved minor inconsistencies and petty nuisances in each of the databases, many involved more serious issues. For the most part, these problems were of three general types: first, quality control in the UCR and LEDS databases could be improved; second, various characteristics of certain law enforcement agencies and/or jurisdictions make counting difficult; and third, the databases contain some fundamental differences in how they define police. In this section, we discuss some of these issues and their implications for policy and research on the police.

Quality control issues

Both databases contain a host of coding errors, mis-spellings, inconsistencies and other mistakes that make it difficult to reach an accurate tally of police officers. In LEDS, some agency name entries do not include the jurisdiction name and are therefore unidentifiable (e.g. "Department of Public Safety" and "Department of Public Services Police/Fire"). There is no standard for how agency names should be entered and how abbreviations should be handled, thus making it extremely difficult to match information from one data source with other databases[8]. Jurisdiction names are sometimes spelled wrong, thus hampering efforts at identifying agency names. All of these issues make it very difficult to match agencies across multiple data sources.

More serious than these simple quality control issues is the problem of duplicate entries. The UCR, as discussed earlier, double counted employees in at least four state police agencies, for a total error of over 5,000 sworn officers. Fortunately, the UCR's ORI code system prevents duplicate entries in all but state police agencies, where individual state police precincts are listed as separate entities. The LEDS database contains several duplicate entries. Some are based on confusing jurisdiction names, such as Hamilton Township Police Department in New Jersey. The FBI contains listings for two separate agencies of this name, one with 171 sworn officers and another with 38. LEDS contains two listings, both have 171 sworn officers – an error of 133 officers. Many other agencies are listed twice in LEDS as well, most without any confusing issues at the source of the duplicate entry[9]. By double-counting, duplicate entries directly affect the accuracy of police officer and agency estimates.

Agency and/or jurisdiction characteristics

In some cases, certain characteristics of individual agencies or jurisdictions make it difficult to maintain accurate records of police agencies and their employees. For instance, many agencies and/or jurisdictions within states have the same or very similar names. Some examples of this in the UCR database include the five Washington Township Police Departments in both New Jersey and Pennsylvania (each a separate police agency) and the four Union Township Police Departments in Pennsylvania[10]. Because of its well-developed ORI code system, the FBI does a good job of distinguishing between these agencies in the UCR. The LEDS database contains a number of errors associated with confusing jurisdiction names.

Another feature of law enforcement agencies in the USA that makes it difficult to keep accurate tallies is the predominance of very small police departments employing only a handful of full-time or part-time staff. According to the LEDS database, 4,367 separate agencies employed two or fewer full-time sworn officers in 1992. Of these, 967 employed none full-time sworn officers, relying solely on part-time employees for law enforcement services. Some of these tiny agencies float in and out of existence based on budget and personnel issues[11]. Some establish contracts for police service with local state police or sheriffs' agencies, while others break off such contracts to police themselves.

Because the various methods of obtaining police protection that tiny jurisdictions arrange are sometimes temporally unstable, it is very difficult to keep accurate counts of their numbers.

Another issue that sometimes makes it difficult to compare separate data sources is that many agencies do not know the size of the population that they actually serve (Maguire *et al.*, 1997). For specialized agencies, this makes sense, since it is difficult to estimate the population of a park or an airport. County sheriffs and county police agencies often do not know the proportion of the county population for whom they normally provide police services. In many counties, the sheriffs' agency or county police department may only patrol or respond to calls-for-service in unincorporated areas or jurisdictions without their own police force. Nevertheless, when asked to list the population that they serve, nearly all county agencies will invariably respond with the full population of the county. When the Justice Department called several hundred sheriffs' departments in late 1994 to get accurate estimates of population served by asking departments to "back-out" the populations of jurisdictions within the county that had their own police force, many had difficulty producing such a figure[12]. Fortunately, the FBI has made a virtual science out of producing accurate population-served estimates for all police agencies and automatically backs-out the populations of incorporated areas from county population estimates. The sum of all population estimates in the UCR database is slightly over 261 million people. LEDS on the other hand, relies on self-reported population figures, therefore, the sum of all population-served estimates in LEDS is over 1.2 billion people – nearly five times the true US population. In all fairness, neither BJS nor the Census Bureau claims that the LEDS study contains accurate population figures. However, researchers should be aware that due to this issue, police officer-to-citizen ratios that are derived from the LEDS database will sometimes be smaller (because they contain a larger population denominator) than those derived from the UCR. For city agencies, these estimates will be very similar, but for county agencies they will vary widely.

Definitional differences

Much of the difference in the total sworn officers figure can be attributed to the way each agency defines a law enforcement agency and a law enforcement officer. The FBI, recognizing that many agencies perform duties unrelated to law enforcement such as serving civil process, providing courtroom security and staffing jail facilities, asks agencies, when tallying sworn officers, to exclude employees who are not responsible for performing primary law enforcement functions. The LEDS on the other hand, does not back-out these figures and therefore includes within the sworn officer category many employees who do not perform law enforcement functions[13]. Sheriffs, for example, are included in the directory without regard for the types of duties that they perform (BJS, 1980, p. 7). Although sheriffs' agencies in some states such as Massachusetts, Connecticut, New Jersey, Rhode Island and

Pennsylvania serve virtually no law enforcement functions[14], they are still represented in LEDS as sworn law enforcement officers.

Even more so than sheriffs' agencies, it is often difficult to determine whether certain special police organizations can truly be considered law enforcement agencies. Some special police officers carry guns and some do not. Some wear uniforms and some do not. Some are authorized to use force, whereas others are not. Some respond to calls-for-service and conduct routine patrol activities, whereas others conduct criminal investigations or provide security for personnel, buildings and grounds. Some have police powers that apply only to certain sets of laws, while others only have police powers within certain limited jurisdictions. Differences in the number and types of special police agencies included in the UCR and LEDS databases are the primary source of disparity between police agency and employment estimates derived from each of these data sources. Clearly, the federal agencies responsible for counting cops in the USA need to either:

(1) coordinate to develop explicit definitions for "special" police officers and police agencies; or

(2) explain why their estimates are different from one another.

While making no judgment about which agency is doing a "better job" of defining special police officers and agencies, we recommend that they take steps to account for these discrepancies.

Implications for police research

The problems discussed in this paper have direct relevance for police research. Of particular importance is the impact of these problems on efforts to draw random samples of police agencies using the FBI or LEDS databases as a "population" of all known police agencies. Researchers drawing random samples of large urban police departments probably do not have much cause for concern, since these agencies appear to be adequately represented (for the most part) in both FBI and LEDS databases (Maguire, 1997). However, those interested in drawing random samples that contain small or specialized police agencies should pay particular attention to sample selection bias issues, since a large number of these agencies are missing from one or more of the databases. In addition, researchers are cautioned to be careful when using ratios of police officers per unit population derived from these different sources. Both the numerator (officers) and denominator (population) of such ratios will differ depending on the agency type and source used. We now discuss how the issues raised in this paper apply to one important research issue: evaluating the Clinton Administration's efforts to increase the number of police officers on American streets by 100,000.

The 1994 Crime Act: 100,000 new police officers

Through the 1994 Crime Act, the Office of Community Oriented Policing Services (COPS) is responsible for providing funds for an additional 100,000

new law enforcement officers and for implementing community policing nationwide. Through its grant programs, COPS has already provided over $3.5 billion to law enforcement agencies to hire or redeploy over 61,000 law enforcement officers.

The COPS Office solicits proposals from law enforcement agencies who want to hire or redeploy law enforcement officers. Two basic "hiring" programs have been implemented by the COPS Office. The first program, the Universal Hiring Program (UHP), provides grants that will pay 75 percent of an officer's entry-level salary and benefits, subject to a maximum of $75,000 per officer, over the three-year period of the grant. The second program, COPS MORE (Making Officer Redeployment Effective), provides funds to agencies for equipment, technology and civilians, if the agencies can demonstrate that current officers will be redeployed to community policing activities.

For all programs, all state, local, Indian Tribal, public law enforcement agencies, consortia of agencies and jurisdictions serving special populations (e.g. transit, university, public housing, schools and natural resources) are eligible to apply. Jurisdictions that wish to "start up" a policing agency are also eligible. Federal agencies are not eligible.

In its review of grant applications, the COPS Office, among other criteria, carefully determines:

(1) whether a law enforcement agency is a legal entity;

(2) whether the agency has a community oriented policing strategy; and

(3) whether it is likely that a law enforcement officer will actually be visible and on the street conducting community policing activities.

The COPS Office defines a law enforcement officer as "a person hired on a permanent basis who is authorized by law or by a state or local public agency to engage in or oversee the prevention, detection, or investigation of violations of criminal laws".

By using the above mentioned criteria, a number of applications are deemed ineligible. In particular, county sheriffs, transit, private colleges and universities, schools, public housing, parks and recreation, district attorney offices and other non-traditional agencies may not be awarded grants. These are all determined on a case-by-case basis.

Sheriffs' agencies are called to determine whether they have primary coverage over an area and whether deputies are engaged in non-patrol related activity. In at least three states, Massachusetts, New Jersey and Pennsylvania, sheriffs agencies do not have primary jurisdiction for an area and are not eligible for consideration for hiring grants. In other sheriffs' agencies, the percentage of time varies for non-patrol activities, such as court and jail operations. Although the exact number of sheriffs' deputies participating in non law-enforcement functions is unknown, a reasonable estimate can be derived from the 1993 LEMAS data (Bureau of Justice Statistics, 1996). Data from 831 large law enforcement agencies nationwide show that the mean percentage of

sworn personnel in sheriffs' agencies (n = 582) assigned to jail and court functions is 45 percent, compared to a mean of .58 percent for all other agency types together (n = 249). Because the mandate of the COPS Office is to use funds for new cops for community policing, the position of the office was to avoid funding bailiffs, process servers and jailers and others, even though they might be considered "law enforcement officers". This further reduces the baseline number for counting cops.

When we take out the ineligible agencies and officers, we reduce the baseline of cops from 681,012 officers to 562,349. This is the approximate number to use when determining whether 100,000 officers have been added to the nation's law enforcement agencies by 2001. This number is derived using the following calculations:

- The COPS Office does not fund federal law enforcement agencies (681,012 minus 47,129 federal officers equals 633,883).
- The COPS Office does not provide funding for sheriffs' agencies in states where these agencies do not have primary jurisdiction for providing law enforcement services to an area (633,883 minus 7,374 deputies from ineligible states equals 626,509)[15].
- Even in states where sheriffs' agencies do provide primary police services for some areas, the COPS Office does not provide funding for sworn officers whose primary function is related to court or jail operations (45 percent of 130,611 deputies equals 58,775[16]; 626,509 minus 58,775 equals 567,734).
- The COPS Office does not provide funding for airport police, alcohol beverage control officers, prosecutors or court investigators and fire investigators (567,734 minus 5,385 equals 562,349)[17].

Because the 1994 Crime Act focuses only on certain types of law enforcement officers and agencies, these are the kinds of steps that researchers must follow when trying to determine whether the Clinton Administration successfully increased the number of law enforcement officers on American streets by 100,000. These steps clearly illustrate the complexity of counting cops in the USA.

Conclusion

Counting cops is not easy. The government agencies that have traditionally provided estimates on the number of American police have made no egregious errors and their efforts have provided an abundance of data that criminal justice scholars and researchers can use to further our understanding of the police. Nevertheless, there are some modest steps that these and other agencies can take in order to produce more consistent estimates of the number of police officers and agencies in the USA.

First and most importantly, every database of police agencies compiled by the Census Bureau, government agencies and other criminal justice researchers,

should make use of the FBI's ORI Code as an agency-level identifier. COPS uses this alphanumeric code as the primary key for all of its databases and the LEMAS series produced by the Bureau of Justice Statistics included these codes in their most recent database. Other agencies should follow this example. This will enable researchers to quickly and easily link separate databases together to produce potentially fruitful studies that will enhance our knowledge of the police. The ORI code is to police agencies as the social security number is to individuals. By taking advantage of this existing coding scheme, the Census Bureau could implement some relatively easy error-detection routines into its record-keeping system (i.e. automatically comparing their data to the FBI's in order to identify mis-keyed or otherwise problematic information) and therefore reduce the likelihood that database errors will produce inaccurate estimates of the number of American police. The Bureau of Justice Statistics reports that the 1996 LEDS, which was not available as this article went to press, has already begun to use the ORI code in its list of agencies (Reaves, 1997). Researchers who collect agency-level data from the police should implement this practice as well, so that other researchers can easily merge separate databases in the future (Maguire, 1997).

One bureaucratic hindrance that makes it difficult to use the ORI Code as an agency-level identifier is the NCIC's reluctance to release their database of police agencies, even to other segments of the Justice Department. The NCIC assigns the ORI Code to all police agencies in the country and then the FBI uses this code as its primary key in all UCR data. The UCR database contains over 18,000 separate ORI codes, but unfortunately, the list does not contain agencies that do not respond to the UCR survey. ORI codes exist for these agencies, but they are only listed in the NCIC database, not in the UCR. NCIC refuses to release this information, because it is considered confidential. In the interest of expanding knowledge of the police, the Attorney General should request the NCIC to release unclassified portions of their database to the public.

Second, the FBI and the Census Bureau should implement more stringent quality control measures into their database operations. Both databases are filled with misspellings and other assorted mistakes that sometimes make it very difficult to work with the data. The UCR should implement an agency-type field to facilitate estimates within types and comparisons with other data sources. The LEDS should implement measures to eliminate duplicate entries, agencies without names (i.e. "Dept of Public Safety") and other coding errors, as well as adopting a uniform standard for abbreviations and data entry methodology. The Bureau of Justice Statistics reports that the 1996 LEDS has implemented stricter quality control measures (Reaves, 1997).

Third, the Census Bureau should take advantage of other existing data sources on American police agencies, including the UCR and COPS databases. One of the key premises of the reinventing government movement and Vice President Gore's National Performance Review is to eliminate duplication of effort and enhance efficiency and effectiveness through interagency cooperation. COPS and the FBI are both valuable alternative sources of

information (and confirmation) for any agency interested in compiling information on American police agencies. Again, we have learned from BJS that the latest LEDS database was constructed, in part, using some of these alternative sources (Reaves, 1997).

Lastly, the Bureau of Justice Statistics should take the lead in reconciling some of the disparate estimates of the number of police. BJS is well positioned, as sponsor of the Census Bureau's criminal justice data-collection activities and as a component of the Justice Department, to mobilize the resources and expertise to produce cutting edge estimates. These estimates should be published, together with a detailed accounting of the methodology used to produce them. Only then, when we know how many police officers we have, can we accurately track changes in police strength over time. Only then can we truly evaluate the Clinton administration's success at putting 100,000 new police officers on the streets of the USA.

Notes

1. In most other speeches, Clinton (1994b) has said that 100,000 new police officers would represent a 20 percent increase. For 100,000 to represent a 20 percent increase, the implication is that there are currently 500,000 police officers.
2. While the FBI lists over 18,000 agencies in its 1993 UCR database, over 5,000 show the number of employees as zero. What this means is not always clear. In some cases it means that the agency did not report numbers for that year, while in other cases it means the agency no longer exists. Additionally, it may either mean that the agency is not responsible for performing generalist law enforcement functions (like sheriffs in some states), or it may simply mean that the agency is a subsidiary whose employee counts are listed under the larger parent agency.
3. In the early days of the LEDS project, the Census Bureau used these codes as unique identifiers for every agency in their list (LEAA, 1974). At some point, this coding process was dropped. Recent Bureau of Justice Statistics databases have begun once again to use these codes (Maguire, 1997; Reaves, 1997).
4. Hawaii does not have a state police agency and LEDS is missing an entry for the Alaska State Police.
5. Although the raw data file for the 1993 Uniform Crime Reports contained these errors, the publication emerging from the analysis of these data contains corrected figures (FBI, 1993) for these agencies.
6. Also, LEDS counts only "primary" state police agencies, so the list excludes California State Police, which has 252 sworn officers, in lieu of the California Highway Patrol, which has 5,726 officers. While California State Police is not listed as a primary state police agency in LEDS, it is included in the list of state capitol police agencies and is therefore not included in this tally.
7. In 1997, the General Accounting Office (USA GAO, 1997) conducted a limited study of federal law enforcement agencies pursuant to a congressional request. Looking only at those agencies employing between 25 and 699 "law enforcement investigative personnel", they identified 32 separate agencies with a total of 4,262 law enforcement investigative employees.
8. For example, the phrase "police department" can be found in the LEDS database in the following ways: "pol dept", "pol department", pol. dept.", "pol. dept", "police dept", "police dept.", "police department", "police depart.", "police depart", "dept. police", "police", "department of police", "dept. of police", "dept of police", "dept police". Sometimes the

name of the jurisdiction comes before this phrase and sometimes it comes after. While this is clearly a quibble, these inconsistencies make it very difficult to design algorithms capable of matching LEDS data to other sources.

9. These include Elk Grove Village, Illinois; Camden Wyoming, Delaware; Lincoln County, Kansas; Biddeford, Maine; Ishpeming, Michigan; Farmington Hills, Michigan; International Falls, Minnesota and Mooresville, North Carolina.
10. Others include Penn Township, PA (4); Jackson Township, PA (4); Perry Township, OH (3); Union Township, OH (3); Alleghany Township, PA (3); Butler Township, PA (3); Jefferson Township, PA (3); Scott Township, PA (3); and Springfield Township, PA (3). There are dozens of other agencies with only two duplicate names and dozens more with similar names, but at other levels of government like cities, towns, villages and boroughs.
11. COPS staff members have frequently encountered agencies on the "fringe" of existence. One agency, for example, filled out a grant application in October reporting that they had three part-time officers. In December, only two months later, they had none.
12. Under the 1994 Crime Act, COPS is required to grant an equal amount of funding to agencies serving jurisdictions above and below 150,000. Therefore, it was important to obtain accurate population counts from all agencies.
13. When asked by Justice Department officials to "back-out" counts of employees who do not perform law enforcement functions, some sheriffs correctly emphasized that all law enforcement agencies contain some sworn personnel who do not engage in primary law enforcement functions.
14. Several Pennsylvania sheriffs' agencies have reminded us that they recently gained statutory authority to make motor vehicle stops.
15. There are approximately 7,374 sheriffs' deputies in Connecticut, Massachusetts, New Jersey, Pennsylvania and Rhode Island.
16. According to Table VI, there may be up to 137,985 full-time sworn officers in sheriffs' agencies in the USA. Subtracting the 7,374 officers from ineligible states results in 130,611 officers from the remaining states.
17. The LEDS database contained 77 agencies of these types with 3,679 officers (see Table IV). Our matching procedures found that the FBI data contained another 47 agencies not listed in LEDS, with a total of 1,606 officers. Finally COPS data contained another 10 unique agencies with 100 officers. The three sources contain information on 134 separate agencies with 5,385 officers.

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