

The Distribution of Police Protection

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Abstract

This paper investigates the distribution of police protection in the United States by race and class. By examining police employment and demographic data for every general-service police jurisdiction in the U.S., I find that poor and heavily-nonwhite jurisdictions employ far fewer officers per crime than wealthy and white jurisdictions do. That finding contrasts with an older body of literature on the distribution of police protection, which examined the distribution of police resources across neighborhoods within individual cities and found little inequality. I also find that inequality in police protection has grown since 1970—a finding that contrasts with the increasingly equal distribution of resources for education, the other major claim on local government revenues—largely because criminal victimization became more concentrated in disadvantaged communities. (In the process, I find that contrary to widespread impressions, the crime rate fell very little in the most disadvantaged jurisdictions from 1980 to 2000, and violent crime actually increased.) Finally, by examining data about federal grant programs, I find that the rise of federal contributions to local policing in the 1990s slowed the growth of inequality somewhat, suggesting that revenue-sharing has a real but modest role to play in reducing inequality in police protection. Together these findings highlight a neglected aspect of equality in criminal justice.

Equality is a central ideal of American government. We expect our government to show equal concern for each of its citizens, and we expect it to avoid unequal provision of essential public services. It isn't easy to define these ideals in a way that can command anything close to universal assent, but they play an important role in public policy nonetheless. In education, for example, funding disparities between school districts that educate poor children and those that educate wealthy children became a national concern by the 1970s, and newfound awareness of them sparked a large-scale effort to equalize funding for education.

Inequalities like these have received much less attention in policing, the other major claim on local government revenues. Concerns about equality have, of course, animated controversies about racial profiling and abusive police treatment of poor and black suspects, but these debates focus on inequality in the burdens that policing imposes rather than the benefits it provides. The second type of inequality raises distinct concerns that deserve more attention than scholars have given them. After the urban riots of the 1960s, the Kerner commission concluded that complaints about police abuse “may even be exceeded by the conviction that ghetto neighborhoods are not given adequate police protection” (National Advisory Commission on Civil Disorders 1968: 307), and today poor and minority Americans are still much more likely than their wealthy and white counterparts to tell public opinion pollsters that police do not protect them adequately and that too little money is spent on crime prevention.¹ There are reasons to believe this problem has gotten worse in the four decades since the Kerner commission wrote, since crime victimization became more and more concentrated among the disadvantaged during this period (Levitt 1999; Thacher 2004).

¹ For example, blacks have substantially less confidence than whites in the ability of police to protect them from violence (Jones 2005), and they are more likely than whites to say that we spend “too little” on the crime problem (Maguire 2005: 135). The same is true for low-income respondents.

Systematic research on this topic has been limited to a handful of studies, mostly published in the 1970s, that examined whether local governments provided less protection to poor and black neighborhoods than wealthy and white ones within individual cities (e.g. Weicher 1971; Lineberry 1977; Mladenka and Hill 1978).² These studies mainly concluded that police departments distributed their resources equitably, and as a result this line of research was mostly abandoned. It ignored, however, the most important source of unequal police protection: By focusing on the distribution of policing within cities, it shed no light on inequalities among them (Skogan and Fridell 2004: 117; Rich 1982). Educational research suggests that that is where the largest disparities in resource allocation probably lie: While early analyses of the distribution of resources within individual school districts found few differences between rich and poor neighborhoods (e.g. Levy et. al 1974), later analyses of the distribution of resources across districts found large disparities (e.g. Murray, Evans, and Schwab 1998).

A mundane but important reason why the policing literature has not examined these interjurisdictional disparities lies in the challenges posed by the available data. In education, the census bureau assembles complete demographic information for school districts, making it relatively easy to compare educational resources across school districts according to their demographics. In policing, however, the census bureau provides no comparable data for police jurisdictions, making it very difficult to assemble complete demographic data for the patchwork

² Some studies analyzing the determinants of police strength have also investigated variation across jurisdictions (Maguire 2001 provides a thorough, and generally critical, review), but that literature takes a different form from the educational inequality literature: Instead of examining inequalities in the level of policing directly, this literature aims to develop a comprehensive explanation for variations in police strength. In any case, these studies mostly focus on a small number of cities or even a single jurisdiction (some aggregate the number of officers to the *national* level and attempt to explain variation in police strength over time). None examines the distribution of policing nationwide.

of police jurisdictions that exist in the U.S. As a result, we know much less about the distribution of police protection than we do about the distribution of educational resources.

This paper begins to fill that gap. By assembling a national dataset that describes the number of officers, the number of crimes, and the demographics of the population covered by every police agency in the U.S., I will generate empirical information about the level of police coverage provided to communities of varying economic and racial compositions. In contrast to the older literature about the distribution of policing within cities, I find that the distribution across cities is highly unequal, as disadvantaged communities receive much less police protection than others. This disparity is largest when the level of police strength is measured based on need (e.g., the number of officers per crime) but even the number of police per capita is slightly lower in poor communities than in wealthy ones. Moreover, many of these disparities have grown since 1970. While the U.S. has made substantial progress equalizing educational resources over the past few decades, inequality in police protection has worsened. It has done so despite the rise of federal revenue-sharing programs like Title I of the 1994 crime bill (commonly known as the COPS program), which helped to subsidize the hiring of about 100,000 police officers nationwide from 1994-2004. By analyzing data about that program, I show that it did little to reduce inequality in police protection, though it would have had a slightly bigger impact if it had distributed funding by crime rates rather than population.

This research has implications for our understanding of the nature of public police in federalist systems. Criminal justice scholars who have raised concerns about the distribution of police protection have mostly emphasized the threat posed by the rise of private security (e.g. Shearing and Bayley 2001; Sklansky 1998; but see Kennedy 1997: ch. 2; Kleiman 1992: 155-6), worrying that the commodification of policing makes it possible for the wealthy to buy a level of

protection for their homes and workplaces that the poor cannot afford (Moore 1992: 119). This focus on private security obscures the extent to which public policing is already a market commodity in a federalist system. In a system where local governments provide the vast majority of public policing, and where residence in any particular locality and the bundle of public services it provides are allocated by the housing market, access to police protection is *de facto* subject to the kinds of class disparities that many scholars have associated with private policing. In this respect policing resembles public education in the years before revenue-sharing took hold.³ By documenting these disparities, this paper suggests a need to reconceptualize public policing as, in part, a market commodity. It also adds to recent analyses of the dilemmas and unintended consequences of America's decentralized system of law enforcement (Thacher 2005).

This research also contributes the sociological literature on stratification. By documenting recent trends in police protection, this paper shows how changes in the distribution of police protection have reinforced the growth of inequality in other spheres. It also complements recent sociological work on spatial inequality by clarifying the “structural-territorial bases of inequality” (Hooks, Lobao, and Tickamyer 2007: 254) in one important policy domain, showing how the decentralized structure of American policing allows the distribution of public services to track inequalities in private resources across space.

Before examining the distribution of policing empirically, the next section further examines the importance of this topic and develops a conceptual framework for analyzing it. In

³ William Fischel writes: “Given a stock of numerous and independent districts . . . local public education was converted into an essentially private good. To get the benefits of the schools, you had to buy a home in the community whose property taxes covered the cost of education. . . . Local schools, though nominally in the public sector, became more like a private good. Tuition for education quality differentials was extracted in the housing market, not at the schoolhouse door” (Fischel 2009: 222).

that discussion I try to connect recent political philosophy with observations in the criminal justice literature to clarify why interjurisdictional inequalities in policing are important.

Although this kind of normative argument may seem out of place in an empirical study, Mayer Zald (1991) and others have argued that such arguments play an essential role in social inquiry because they isolate social phenomena worth studying. Section two then describes the data I have used, and section three presents my major findings.

The Meaning and Justification of Equal Protection

The ideal of equality is as contested as it is important. Government should show equal concern for its citizens (e.g., Dworkin 2000), but what does that ideal really require?

It can't mean that every citizen must receive an equal share of everything that governments provide. In a federalist system like the United States, local governments have considerable autonomy, and the variation in services that results serves an important purpose. As Tiebout (1957) argued, different people value these services to different degrees, so each of us should have the opportunity to live in a place that provides the bundle of services and taxes that suits our own desires. Many people don't care whether they live in a city with public art or public swimming pools, and they are happy to dispose of their piles of fall leaves on their own. It would be absurd to worry about the inequalities in the distribution of public pools, public art, or public leaf collection that result from these preferences. Does the same argument apply to policing?

It clearly does not apply to every public service. In particular, public and professional opinion does not usually tolerate large inequalities in school finances, Tiebout's analysis notwithstanding. Education is a fundamental government service that substantially shapes life chances, so it is intimately bound up with America's meritocratic ideals (Hochschild and Scovronick 2003). A major goal of American government is to provide a fair structure of

opportunity that makes it possible for anyone to succeed in life (Hochschild 1995), and without equal access to education that ideal rings hollow. Another major goal of American government is to provide the baseline of support and protection that make it possible for everyone to participate in a shared democratic community (Elizabeth Anderson 1999: 289), and educational inequality can undermine that ideal as well (Anderson 2007).⁴

Whether or not public safety is as fundamental as education in these respects, it clearly has important implications for both equal opportunity and the possibility of shared community life. With respect to equal opportunity, Mark Kleiman observes that unequal protection from crime substantially affects the life chances of poor and minority communities: “The minority poor pay for crime in their personal victimization and in the fear it engenders; in higher prices, shorter hours, and poorer selections of goods in the stores they patronize; in the virtual absence from their neighborhoods of some kinds of establishments, such as banks; and in diminished job opportunities in retailing, office work, and manufacturing as businesses relocate to lower-crime areas” (1992: 155). Elijah Anderson notes how unequal protection may draw poor children into crime itself: “Feeling that they cannot depend on the police and other civil authorities to protect them from danger, residents [of poor black communities] . . . tend to teach their children to stand up for themselves physically or to meet violence with violence. Growing up in such environments, young people are sometimes lured into the way of the street or become its prey”

⁴ Moreover, the immediate beneficiaries of education are children, and even in Tiebout’s story it is not children but their parents who choose to trade off educational resources against low taxes or better public services in other realms. Perhaps we demand equal opportunities for education because we are unwilling to allow parents to trade this aspect of their children’s life chances against their own tax bill. If so, a similar logic applies to policing. Recent data from the National Crime Victimization Survey shows that minors are the victims in almost half of all violent crimes, and these minors do not choose to live in underpoliced neighborhoods any more than they choose to live in communities with poor schools.

(Anderson 1999: 109; cf. Harding 2009). In these respects police protection, like education, has implications for equal opportunity that many other public services do not.

Protection from crime also helps make a shared democratic community possible. The fear and distrust generated by crime can damage the possibility of shared community life in high-crime neighborhoods (e.g. Elijah Anderson 1999; Smith 2007), and it can stigmatize those neighborhoods in a way that undermines their residents' ability to interact as equals with outsiders (Anderson 1990). It also contributes to cynicism about government that corrodes democratic solidarity. David Bayley and Clifford Shearing warn: "If the distribution of policing coincides with structural divisions of race and class, the legitimacy of government itself may be jeopardized. People may be encouraged not only to take the law into their own hands for their private protection but also to defy laws associated with unresponsive government" (2001: 31). Some commentators have already invoked the underprotection of disadvantaged communities as a reason to support an expansive right to self-defense, arguing that citizens may take matters into their own hands when the state fails to provide sufficient protection. Robert Cottrel and Raymond Diamond expressed this view in an influential article:

[One] reason the Second Amendment has not been taken very seriously by the courts and the academy is that for many of those who shape or critique constitutional policy, the state's power and inclination to protect them is a given. But for all too many black Americans, that protection historically has not been available. Nor, for many, is it readily available today. If in the past the state refused to protect black people from the horrors of white lynch mobs, today the state seems powerless in the face of the tragic black-on-black violence that plagues the mean streets of our inner cities . . . A society with a dismal record of protecting a people has a dubious claim on the right to disarm them (1991: 359, 361).

Other scholars conclude that inadequate protection in disadvantaged neighborhoods has contributed to the gang problem, arguing that gangs serve as compacts of mutual protection in areas where state protection has failed (Kennedy 1994; cf Harding 2009: 458). In all these ways, unequal protection undermines the ideal of a shared political community.

As Gerald Frug (1998) has argued, Tiebout's analysis does not provide a complete normative standard for local government because we are (or ought to be) unwilling to treat many city services as consumer goods. Some of those services are intimately connected with ideals of equal opportunity and democratic solidarity. In those respects, policing arguably has more in common with education than with less-fundamental public services for which a consumer sovereignty model is appropriate.

The Extent of Inequality

Scholars like Bayley and Shearing call attention to the distribution of police protection because they are worried about the growth of private security. This concern presumes that public policing represents a commitment to equality that a private market in security may undermine (cf. Sklansky 1999). In the decentralized system of public policing that prevails in the U.S., however, the distribution of public policing already reflects a market logic. However one judges Tiebout's normative argument, his major descriptive conclusion—that a decentralized system of local governments operates like a competitive market for government services—seems more robust.⁵

The older literature about the distribution of policing within individual cities that I discussed earlier does not, of course, contradict that conclusion. The allocation of police resources across neighborhoods within one city results from conscious decisions by its public officials about where to deploy municipal resources, and those decisions are subject to institutional, political, legal, and ethical pressures to take equality into account. Outside the confines of an individual city, however, few of these pressures operate. The level of policing in

⁵ The Tieboutian literature has identified many preconditions for this conclusion. Most important, jurisdictions must have some way of forcing residents to consume a minimum level of housing or Tiebout sorting will collapse into a game of "musical suburbs", in which the poor chase the rich to free-ride on the services financed by their taxes. In practice, zoning rules serve this purpose (Hamilton 1975).

each city does result from conscious decisions about how much to allocate to the police budget, but that decision gets made within constraints set by the competitive market forces operating on local governments (Peterson 1981). To see the effects of these market forces, we need to examine inequalities among cities rather than within them.

Although local governments provide the largest share of police protection, the rise of federal revenue sharing may have introduced an egalitarian influence on the distribution of policing. It seems reasonable to assume that the federal government distributes police resources more equitably than the fragmented system of local governments does, since the institutional and political pressures that encourage local governments to distribute resources equitably within their boundaries presumably influence federal decision-making too. It is possible, however, that the redistributive potential of federal spending is limited by the geographical and institutional organization of congress, which encourages legislators to distribute benefits according to the distribution of political power rather than the distribution of need (e.g. Holcombe and Zardkoohi 1981). Many observers have argued that constraints like these undermined the redistributive potential of the 1994 Crime Bill's COPS program—by far the largest police revenue-sharing program in U.S. history. Moreover, even if federal spending itself has been relatively egalitarian, it is an open question whether it has been large enough to reshape the distribution of policing in an era when inequality among local jurisdictions has grown. I will examine these questions by analyzing how COPS affected the distribution of policing and how that effect might have differed had the program pursued thoroughly redistributive goals.

Data and Methods

Though the questions I have posed are straightforward, answering them is not. The data needed to describe the distribution of policing by race and class do not exist in any single place, and there is some ambiguity about which information is most appropriate.

One problem is that there are many ways to characterize the level of police protection an agency provides. The simplest approach measures police strength using the number of officers and civilians it employs. That measure has the disadvantage that it ignores non-personnel costs (such as technology designed to increase each officer's productivity) as well as personnel quality. Another approach measures police strength using an agency's total expenditures. That measure has the disadvantage that a dollar's purchasing power varies across the county, both in general and specifically for law enforcement services (in the educational literature this problem has made it necessary to develop complex and sometimes opaque methods for adjusting school district budgets), and it takes strong assumptions to conclude that total expenditures capture variation in personnel quality and other important resources (Ostrom 1983: 103-4). Other approaches focus on measures that capture the quality of police services, such as response time, the types of activities police engage in, or police demeanor towards citizens. Such measures have the disadvantage that it is impossible to find meaningful nationwide data about them, and judgments about which measures are appropriate can be contentious. (Although I have argued that drastically different levels of policing across jurisdictions should be suspect, the argument for different *styles* of policing is stronger.)

The bottom line is that each of these alternatives offers a different lens on my topic, and all of them deserve analysis even if no single study can do that alone. For this initial study, I focus on the most widely-used measure of police strength—the number of officers and civilians employed by an agency—which I view as the most intuitive and accessible measure.

That measure of total police strength, in turn, needs to be compared with the need for police services. No single standard of need is obviously correct (Levy et. al 1974; Ostrom 1983), so I will analyze police strength per unit of need in three ways—as the number of police per

capita, the number of police per index crime, and the number of police per violent crime.

Different measures of distribution are essential because the literature about equality often comes to different conclusions depending on the measure used: The distribution of public services often looks progressive when measured per capita but regressive when measured against the distribution of the relevant social problems (Rae 1981). Such complications raise difficult normative questions, but by providing multiple measures I hope to allow readers to come to their own conclusions and provide the bases for informed debate.

These data are all available from the Uniform Crime Reports, which compiles information on police personnel and crimes reported to the police that are provided by police departments themselves, often through state agencies that mandate reporting. I gathered these data for ten-year intervals from 1970 to 2000. In 1970, agencies covering only 75% of the U.S. population reported data, so that year's figures must be treated with caution. (Footnote 9 discusses this problem in more detail.) By 1975, however, a national push to improve criminal justice data had raised reporting rates dramatically, and agencies representing 97% of the U.S. population participated in the UCR; reporting rates remained within 2% of that figure ever since.

Throughout this period, I focused on all agencies that provided general-purpose police services—most commonly, uniformed patrol, investigations, emergency call response, and community problem-solving. For the most part, that meant focusing on municipal police (primarily city, township, and village police) and county sheriffs (which typically police both unincorporated areas and incorporated municipalities that contract with the sheriff).⁶ This

⁶ I tried to exclude any county sheriffs that do not provide general-purpose police services. (These agencies typically operate a county jail and provide security for courts and other county buildings.) Most of them can be easily identified in the UCR dataset because the FBI codes their jurisdiction's population as zero. Occasionally, however, the UCR has erroneously assigned nonzero population to these agencies. When my own algorithm for identifying the population policed by county sheriffs assigned an agency zero population, I reviewed its website to

criterion excludes several categories of police contained in the UCR dataset. Most important, my analysis excluded state police, which in most states do not provide general-purpose law enforcement services but focus on specialized tasks like highway patrol.⁷ I also excluded special-purpose police forces such as transit police, fish and game police, and university police. This decision is largely practical: These agencies do add to the law enforcement strength of the area where they work, but there is often no practical way to determine the boundaries and socioeconomic composition of the geographic areas they protect. They also serve different functions from most local police, making it difficult to quantify their contribution to an area's police strength; many of them resemble private security forces more than public police, and while the distribution of private security is an important topic, it is beyond the scope of this paper. Here I intend to analyze the distribution of public police protection provided by the most prominent general-purpose law enforcement agencies—i.e. municipal police and county sheriffs.

Having assembled these data about police employment, the next step is to determine the demographic composition of the population each agency serves. I did that by matching each agency with data from the decennial U.S. Census. In 1996, the Bureau of Justice Statistics

verify that it did not in fact provide general purpose law-enforcement services anywhere in the county. Of course, even sheriffs that do provide general-purpose police services may spend more time than municipal police on other tasks such as operating a jail, providing court security, or serving civil processes (Hickman and Reaves 2006), and these additional duties make their personnel counts hard to compare with a municipal agency's. The FBI asks agencies to leave employees who mainly perform ancillary functions out of their employee counts, but some may do so imperfectly. In the end, there is unavoidable variation in the functions that different police agencies perform, and my analysis suffers from this problem to the same extent as other studies that rely on the UCR (e.g. most studies of the effect of police on crime). Nevertheless, the inequalities I will identify are large enough that this problem is unlikely to change my qualitative findings. Maltz (1999) provides a detailed critique of the UCR, and Maguire *et al.* (1998) provides a useful analysis focused on police employment data.

⁷ In a few states such as Pennsylvania, state police rather than county sheriffs serve unincorporated areas. Unfortunately, there is usually no way to determine how many state police officers are assigned to an area, so my analysis excludes these areas; together they represent about 1.5% of the U.S. population. Practical considerations also made it necessary to eliminate Indian reservations. Some tribal police are included in the UCR dataset, but many of these areas also receive police services from the Bureau of Indian Affairs, which is not; these agencies police less than 0.1% of the U.S. population.

developed a Law Enforcement Agency Identifiers Crosswalk that makes this task easier by associating each agency's ORI code with a FIPS code (a unique code, used widely in the Census, for every state, county, and place in the nation) (Lindgren and Zawitz 2001). Unfortunately, the crosswalk file often provides an imperfect match between census areas and law enforcement jurisdictions. The most common problem involves county sheriffs, which provide general-purpose policing only for areas in the county that lack their own local police department. To generate demographic information for the population policed by a county sheriff, I began with data for the whole county population and then subtracted data for all areas within the county covered by a local police department.⁸ (A similar problem arises for New York and Ohio towns and townships, which can contain villages partly or wholly within their boundaries.)

Comparisons with FBI population estimates suggest that this algorithm yields accurate results.⁹

⁸ In cases where a locality crosses county lines, the necessary data appear in the summary level 55 (place-county level) Census files. In cases where a New York or Ohio village crosses town or township lines, the data appear in the summary level 070 (place-remainder level) files. In addition to the difficulties with county sheriffs discussed in the text, several other complications make it inappropriate to rely exclusively on the crosswalk FIPS codes. For example, hundreds of localities across the country—most of them very small—contract with their neighbors for police protection, and dozens more have banded together to form regional departments. Many of these arrangements are identified in the UCR dataset (I tried to identify the rest by contacting relevant state officials, such as the Governor's Center for Local Government Services in Pennsylvania and the California Contract Cities Association), but the crosswalk file often does not provide the FIPS code for the jurisdictions involved in them; instead it assigns each regional department the FIPS code for one of its participating localities or for the entire county that contains it. Details about these and other matching complexities are available from the author.

⁹ The UCR file presents the FBI's own estimate of the total population served by each agency—though not, crucially, the economic or racial composition of that population. The correlation between my population estimates and the FBI's for all agencies was at least 0.99 for every year in my analysis. The correlation for county sheriffs was 0.96 for 1970, 0.95 for 1980, 0.93 for 1990, and 0.95 for 2000. In many cases where my estimate diverges from the FBI's, my estimate appears to be more accurate (see e.g. footnote 6). My algorithm does, however, suffer from one systematic error: In years when a municipal agency does not appear in the UCR dataset at all, my algorithm will not subtract its population from the total county population when estimating the population served by the county sheriff. Since agencies serving over 97% of the population reported personnel data from 1975-2000, this problem is unlikely to be large, but in 1970 missing data is more common. To check whether these gaps affected my conclusions, I analyzed how my results would change if I replaced my own population estimates with the FBI's. To do that, I first estimated the composition of the county sheriff's jurisdiction using my usual algorithm, and then I scaled down each demographic datum (e.g., the number of blacks in the jurisdiction) according to my best estimate of the total population living in nonreporting jurisdictions in the county. (Specifically, I multiplied each datum by the ratio of (1) the FBI's estimate of the total population served by the sheriff to (2) my own estimate of that population.) For 1980, 1990, and 2000, this adjustment had almost no effect on my findings, and even in 1970 it had only a modest effect. In all cases my qualitative conclusions persisted.

With these data on police strength and the composition of the population served by each agency, I am able to describe the distribution of policing by race and class in the same way that the educational literature has analyzed the distribution of educational resources. Once again, there are many ways to summarize these distributions, but here I focus on two.

First, I present information about the average level of police strength for agencies serving populations with different racial and class compositions. I will focus on what I call the “income 20-20 ratio” and the “racial 20-20 ratio”, defined as the ratio of (1) the average police strength for agencies serving the 20% of the population in the wealthiest (or whitest) jurisdictions to (2) the average strength for agencies serving the 20% of the population in the poorest (or least-white) jurisdictions.¹⁰ This focus on the most- and least-advantaged quintiles is common in related literatures, including research on educational inequality (e.g. Murray, Evans, and Schwab 1998) and inequality in crime victimization (Thacher 2004). I will also examine the 5-5 and 50-50 ratios, which divide the population into the top and bottom 5% and 50% of the population, respectively. Those data help gauge whether my findings are robust to different cutpoints, and they clarify how the distribution of policing varies throughout the income and racial distribution.

These ratios have the advantage of simplicity and intuitive interpretation, but they also have several weaknesses; for example, most are insensitive to changes in victimization at the middle of the income or racial distribution. To supplement them, I also use a measure of inequality called the Concentration Index (CI), which is conceptually similar to the Gini

¹⁰ The results I will discuss in this paper measure how “wealthy” a jurisdiction is using its per-capita income. Household income is arguably a better measure, but the necessary data were not available for 1970. To check the robustness of my results, I reanalyzed my findings for 1980-2000 using average household income in place of per-capita income, and I reanalyzed my findings for 1970 using average family income in place of per-capita income. None of these re-analyses changed my results substantially. I also reanalyzed the findings about race using the fraction of each jurisdiction’s population that is black rather than the fraction of the population that is nonwhite. Again, my basic findings persisted.

coefficient and has been used widely by health economists to measure inequality in health across economic groups (Kakwani, Wagstaff, and van Doorslaer, 1997). As used here, the CI varies from -1.0 to 1.0 , and as it becomes larger and more positive, it indicates a greater concentration of police protection in high-income jurisdictions (or in jurisdictions with large percentages of white residents). A CI of zero indicates that, on average, jurisdictions at every income level (or racial composition) have the same distribution of police protection.¹¹

After presenting this descriptive information about the distribution of policing, I move on to a counterfactual analysis that investigates whether revenue-sharing programs such as the federal COPS program might reduce the inequalities I uncover. To that end, I received data from the COPS office about every grant made from 1994-2000 (including the ORI number of the grantee agency, which allows me to match information about COPS grants to the dataset I have constructed). I explain how I analyzed these data below.

Findings

Table 1 describes the distribution of policing in 2000, and Table 2 puts that information in historical context. I discuss the data for 2000 first and then move on to trends over time.

The Distribution of Policing Today

The top panel of Table 1 shows how the level of police protection varies between wealthy and poor jurisdictions. When police strength is measured as the number of police per 1,000 residents, jurisdictions with the highest per-capita incomes employ about the same number of

¹¹ Some school finance research has used the Gini coefficient and related measures like the Thiel index (Murray, Evans, and Schwab 1998), but these measures were developed to study income inequality, not the distribution of other goods. The Gini coefficient can be misleading in other contexts because it quantifies inequality in resources regardless of who benefits from it. (For example, a distribution of teachers that favored the poor could yield the same gini coefficient as a distribution that favored the rich.) Since inequality in the distribution of any social good matters mainly when it exacerbates the inequalities that accumulate in other spheres of life (Walzer 1973), the important question is not whether the distribution of policing is unequal but whether that distribution

police per capita as jurisdictions with the lowest per-capita incomes. For example, the wealthiest and poorest jurisdictions comprising 20% of the population each had about 2.8 police employees per 1,000 residents, so the 20-20 ratio is close to one. The CI of 0.03 confirms that jurisdictions at every level of per-capita income have about the same level of police protection. When police strength is measured as the number of police per crime, however, it varies substantially between rich and poor areas. First, wealthier jurisdictions tend to have far more police employees per 100 index crimes: Among the richest jurisdictions comprising 20% of the population, the average number of police per 100 index crimes was 15.0, while in the poorest jurisdictions that figure was 10.3. These figures translate into a 20-20 ratio of 1.45, indicating that wealthy jurisdictions had 45% more police per index crime than poor jurisdictions. Second, the level of police protection per violent crime strongly favors wealthy jurisdictions: The wealthiest jurisdictions comprising 20% of the population had 2.7 police per violent crime, while the poorest had only 1.1. These figures translate into a 20-20 ratio of 2.37, indicating that wealthy jurisdictions had 137% more police per violent crime than poor jurisdictions. The other measures of inequality shown in Table 1 indicate that these inequalities appear throughout the income distribution, and they are most severe at the extremes. For example, on average the wealthiest communities comprising 5% of the population have three-and-a-half times as many police per violent crime as their least-wealthy counterparts.

The distribution of policing across jurisdictions with different racial compositions (shown in the bottom panel of Table 1) is even more unequal. Police strength per capita actually favors non-white communities: For example, while the whitest police jurisdictions comprising 20% of

favors whites and the wealthy. The CI provides the information needed to answer that question, but the Gini does not. The same criticism applies to Coulter's (1980) Coefficient of Inequity, discussed in the policing literature.

the population had an average of 2.1 officers per 1,000 residents, the least white jurisdictions comprising that share of the population averaged 4.0 police employees per 1,000 residents. The associated racial 20-20 of 0.53 indicates that heavily-white jurisdictions had only 53% as many police per-capita as their least-white counterparts. When police strength is measured per index crime, however, the racial 20-20 jumps to 2.52, indicating that on average the whitest jurisdictions comprising 20% of the population have 2.52 times as many police per crime as their least white counterparts. When police strength is measured per violent crime, the level of inequality is severe: The whitest police jurisdictions comprising a fifth of the population had more than five times as many officers per violent crime as their least-white counterparts: The former had almost three police officers for every violent crime, while the latter had only one-half of an officer for each violent crime. Once again, these patterns persist across multiple measures of inequality, which is again most severe at the extremes. For example, the whitest cities comprising 5% of the population had nearly ten times as many police per index crime as their most heavily non-white counterparts, and they had seven times as many police per violent crime.

These findings contrast with those of earlier studies that examined the distribution of police protection within individual cities. With few exceptions, those studies found that rich, poor, white, and black residents all received an equitable share of police resources from their police departments. Cities generally allocated police protection according to neighborhood crime rates, and as a result poor and black residents (who often live in higher-crime neighborhoods because they have fewer residential choices) actually had more police protection per capita than their wealthy and white counterparts, and they had a comparable level of police protection per crime (e.g. Lineberry 1977; Mladenka and Hill 1978). Some scholars took these findings as evidence that policing is a heavily redistributive and egalitarian public service

(Weicher 1971). The data presented in Table 1, however, show that the picture is very different once we look across cities rather than within them. Police protection per capita is not redistributive between rich and poor jurisdictions, and police protection per crime heavily favors the advantaged. In particular, predominantly-white jurisdictions receive much more police protection per crime than the least-white jurisdictions.

How Has the Distribution of Policing Changed since 1970?

Table 2 places these findings in historical perspective by presenting similar information about the distribution of policing in 1970, 1980, and 1990. Four patterns stand out.

First, with a few important exceptions, police protection has become more concentrated in the most advantaged communities—those with the highest per-capita incomes and the largest share of white residents.¹² That trend appears most clearly when police strength is measured per crime. The income 20-20 for index crimes changed little from 1970 to 1990, when it stood at 0.68, but it rose to 1.45 in 2000. Thus although poor communities on average had *more* police employees per index crime from 1970-1990, by 2000 they had substantially fewer. Similarly, the racial 20-20 for index crimes was 1.6 in 1970, but this surplus of police protection in white communities had grown by 2000, when the racial 20-20 for index crimes reached 2.5. For violent crimes, the racial 20-20 changed more modestly from the beginning to the end of this

¹² One source of uncertainty about this and other findings from my analysis inheres in all analyses of UCR data: The underreporting of crime to the police. Homicide is usually considered the best-reported crime, so it might seem useful to examine trends in police protection per homicide, but unfortunately more than three-quarters of all jurisdictions (representing more than one-third of the U.S. population) reported no homicides in 2000. Vehicle theft, however, is much more widespread and also very well-reported: The most recent NCVS found that over 90% of vehicle thefts were reported to the police, and reporting rates did not vary much by race or income (U.S. Dept. of Justice 2010: 97-100); the same was true in the 1970s (e.g. U.S. Dept. of Justice 1977: 76-77). While vehicle theft suffers from its own problems as a proxy for the overall crime rate—in particular, rates of car ownership vary across cities, and carless households are particularly common in big cities like New York and Boston—it may be worth noting that the trends reported in the text for police per index crime also hold for police per vehicle theft: The income 20-20 for police per vehicle theft grew from 0.50 in 1970 to 2.03 in 2000, while the racial 20-20 for police per vehicle theft grew from 2.70 to 3.83. This trend makes it harder to see how changes in reporting rates could account for the trends I discuss in the text.

period, falling from 5.7 in 1970 to 5.5 in 2000. The equivalent income 20-20, however, grew substantially over this period—from 1.3 in 1970 to 2.4 in 2000. Thus while the richest jurisdictions comprising one-fifth of the population had 30% more police employees per violent crime than the poorest in 1970, by 2000 the gap had grown to 140%.

Second, throughout this period the distribution of police protection by race differs from the distribution by income. In general, the inequality between the whitest and the least-white jurisdictions has been much larger than the inequality between the richest and poorest jurisdictions. (The exception is the distribution of police per capita.) For example, while the whitest jurisdictions comprising 20% of the population had more than five times as many police per violent crime in 2000 compared with their least-white counterparts (racial 20-20=5.5), the disparity for rich and poor jurisdictions was much smaller (income 20-20=2.4). Class inequality is, however, gaining ground on racial inequality. While racial inequality in the number of police per violent crime has remained fairly constant since 1970, and racial inequality in police per index crime only increased modestly, class-based inequality in both measures of police protection has grown more substantially: The income 20-20 for index crimes rose from 0.6 to 1.5 from 1970 to 2000, and the income 20-20 for violent crime nearly doubled over that period, rising from 1.3 to 2.4. Over the same period, the racial 20-20 for violent crimes actually fell slightly. In short, class-based inequality remains less severe than racial inequality in 2000, but the former grew substantially during this period while the latter remained fairly stable.

Third, these trends in the level of inequality reflect a complex mix of trends in absolute levels of police protection for advantaged and disadvantaged communities. In general, however, the distribution of policing became more unequal because police strength grew substantially in wealthy and white jurisdictions while it changed little in their poor and nonwhite counterparts.

Consider the trends in the level of police per index crime. In the poorest jurisdictions comprising 20% of the population, the number of police employees per index crime barely changed from 1970 to 2000, remaining close to 10 police per 100 index crimes. During the same period, however, this measure of police strength almost tripled in the richest communities: The wealthiest jurisdictions comprising 20% of the population only employed about 6 officers per 100 index crimes in 1970, but by 2000 they employed 15. In this respect, the income 20-20 for index crimes grew from 1970 to 2000 because the level of police protection grew dramatically in wealthy communities while it stagnated in their poor counterparts. A similar pattern emerged across communities with different racial compositions. While police strength per crime did grow modestly in the least-white jurisdictions, it grew much faster in their whitest counterparts. For example, the number of police per index crime grew almost three times as fast in the whitest jurisdictions comprising one-fifth of the population (from 10.1 police per 100 crimes in 1970 to 25.0 in 2000, or 147%) as it did in their least-white counterparts (from 6.5 to 9.9, or 52%). In sum, on average disadvantaged communities have as much or more police protection as they did in the past, but they have not kept pace with the dramatic growth in police protection elsewhere

Finally, the growth in class-based inequality noted earlier has more to do with the changing distribution of crime than it does with the changing distribution of police employees. The difference between the trends in police protection per capita and police protection per crime already points to this conclusion. Measured as the number of police employees per 1,000 residents, the distribution of police protection between rich and poor communities has not changed much from 1970 to 2000, and what little redistribution has occurred favors the poor. For example, in the poorest jurisdictions comprising one-fifth of the population, the number of police per 1,000 residents grew 86% from 1970 to 2000 (from 1.5 to 2.8), but in the richest

jurisdictions that number grew by only 44% (from 2.0 to 2.8); thus while rich jurisdictions had many more police per capita than poor jurisdictions did in 1970, by 2000 that disparity had nearly disappeared. Police resources *per crime*, however, became less and less egalitarian during this period, as crime itself became more concentrated in the poorest communities. For example, while the number of police per 100 violent crimes grew by one-third in the richest jurisdictions comprising one-fifth of the population (from 204 in 1970 to 270 in 2000), it fell at about the same rate in their poorest counterparts (from 161 to 114, a 29% drop).

Table 3 provides more information about the trends in crime and police employment in wealthy and poor jurisdictions. The top panel repeats the data on police per capita from Table 2, which show that by this measure police strength grew everywhere; in fact it grew fastest in poor jurisdictions. The other two panels, however, show that crime became more concentrated in poor communities over time. In the wealthiest jurisdictions comprising 20% of the population, the index crime rate fell by almost half from 1970 to 2000 (from 4,500 to 2,500 per 100,000 population), but in their poor counterparts it grew by one-third (from 3,200 to 4,100). In particular, the much-heralded crime drop of the 1990s was quite dramatic in the wealthiest jurisdictions, where the index crime rate fell 42% from 1990 to 2000; but it was much more modest in the poorest jurisdictions, where index crimes fell only 14%. The trends in rich and poor jurisdictions diverged even more for violent crimes: Between 1970 and 2000 the violent crime rate fell by 21% in the wealthiest jurisdictions (from 293 to 230 per 100,000 population) but almost doubled in the poorest (from 297 to 578), and during the 1990s it fell almost twice as fast in the wealthiest jurisdictions as in the poorest. All of this corroborates my earlier analysis of NCVS data, which also found that crime victimization became more concentrated among the

poor during this period and that the crime drop of the 1990s disproportionately benefited the wealthy (Thacher 2004).

These trends mean that the share of the nation's crime that takes place in the poorest police jurisdictions has grown substantially over time, and although the share of police who work there has also grown, it has not grown as quickly. The result is a growing workload disparity between rich and poor jurisdictions. In rich jurisdictions each police officer has responsibility for fewer and fewer crimes over time, while in poor jurisdictions this part of the police workload has either remained constant (in the case of index crimes) or grown (in the case of violent crimes). If the crime rate in poor jurisdictions had followed the same trend as the crime rate in rich jurisdictions while everything else remained the same, the inequalities in police protection would have been eliminated.¹³

The Impact of the 1994 Crime Bill

One way to reduce these disparities might be to finance a larger share of police protection at the federal level. With that possibility in mind, it is worth examining the distribution of funds

¹³ The claim in the text is purely compositional, not causal: It says that the "police per crime" ratio for poor jurisdictions would have tracked the ratio for rich jurisdictions if its denominator had not grown so much. (One way to make this counterfactual precise is to imagine a world in which police per capita remained at their actual 2000 levels but the average violent crime rate in the poorest quintile fell at the same rate as the richest quintile—*i.e.*, it fell 21% from 1970 to 2000 rather than growing 95%. On these assumptions, the bottom quintile would have had 283 police per 100 index crimes rather than 114, yielding a 20-20 of 0.96 rather than the actual value of 2.37.)

Of course, if crime had actually fallen in the poorest jurisdictions, the decline might have had a variety of consequences, and those consequences could provide the basis for alternative counterfactual scenarios. In particular, the poorest jurisdictions might not have hired so many police if their crime rates had fallen. That thought suggests an alternative counterfactual: If the level of police per capita in the poorest jurisdictions had tracked level of police in the richest (*i.e.* if it had grown only 44% rather than 86% from 1970 to 2000), then the bottom quintile would have had 219 police per violent crime in 2000, yielding a 20-20 of 1.24; thus even in this conservative counterfactual, the lion's share of the inequality in police protection would vanish. Of course, this counterfactual suffers from its own difficulties, and not just because of uncertainties about how many police the bottom quintile would have hired: Large changes in crime would presumably affect other factors as well, such as the population and median income of these jurisdictions. I leave exploration of such possibilities for future research, which would require different data, appropriate instrumental variables, and a more comprehensive framework for understanding the relationships among crime, residential composition, and police hiring than I can muster here; for now rigorous description and interpretation may be a more appropriate goal (*cf.* Freedman 1991; Berk 1991).

provided by the largest federal revenue-sharing program in criminal justice—the COPS program in the 1994 crime bill, which aimed to fund 100,000 new police officers with nearly \$9 billion in federal grants. Obviously future policies designed to equalize the distribution of police protection might be larger or smaller than the COPS program, and they might distribute resources in different ways than COPS did. Moreover, the distribution of COPS funding provides an incomplete picture of the impact that program had on local police employment, since the jurisdictions that received federal support might have hired more police without it. (Although the COPS legislation insisted that grant recipients must use federal money to supplement rather than replace local expenditures, the risk of supplantation always dogs revenue-sharing programs.¹⁴) Despite these significant caveats, a simple analysis of the distribution of COPS funding can provide a rough sense of the impact that a plausible revenue-sharing policy might have. In particular, since I will estimate COPS’s impact in a way that ignores supplantation, my estimate of COPS’s impact can be viewed as an upper bound. Since my main conclusion will be that COPS’s impact was small, the likelihood of supplantation only reinforces it.

To conduct this analysis, I received a database from the Department of Justice that listed the dollar value, the number of officers, and the identity of the police department associated with every COPS grant made from 1994 to 2000. I merged these data with my UCR and Census data to conduct two counterfactual analyses: one that asked what the distribution of policing would have been in 2000 if departments had received no COPS funding, and another that asked what the distribution would have looked like if the COPS program had distributed funding to every jurisdiction according to its violent crime rate. (In reality the COPS funding formula was

¹⁴ Unfortunately, the literature on revenue-sharing has produced no consensus about the extent to which federal funds supplant local expenditures, though the current conventional wisdom suggests that supplantation is less extensive than economic theory would predict (Hines and Thaler 1995).

somewhat opaque, and some agencies never applied for funding at all. Some observers have suggested that COPS funding could have been distributed more equitably, so my second counterfactual analysis attempts to investigate this question.)

First, to estimate the number of officers each department would have employed in 2000 if the COPS program had never existed, I simply subtracted the number of officers funded by COPS from the department's total number of employees in 2000. I made that calculation in two different ways: (1) By subtracting the number of full-time officers (plus one-half the number of part-time officers) funded by COPS hiring grants, and (2) By subtracting the total dollar award from all COPS grants divided by \$75,000 (the standard amount that COPS paid a jurisdiction for a new hire over three years). The second procedure, while crude, makes allowance for the large amount of COPS funding that bought resources other than new hires (e.g. technology). The two procedures yield qualitatively similar conclusions, so I will only present data from the second.

Second, to estimate how many officers each department would have employed in 2000 if the COPS program had distributed funding according to need, I added up the total dollar value of COPS grants made to agencies in my dataset from 1994 to 2000 and allocated these funds based on each agency's share of the nation's violent crime. I then divided this dollar value by \$75,000 to estimate the number of full-time equivalent officers it would support. Finally, I adjusted the agency's employment total by adding (or subtracting) the difference between this number and the number of full-time equivalent officers the COPS program had actually funded.

Table 4 presents data for these counterfactual analyses. The first analysis suggests that COPS had a small but real effect on the distribution of police protection. For example, if the COPS program had not existed, I estimate (ignoring supplantation) that the wealthiest jurisdictions comprising one-fifth of the population would have had 50% more officers per index

crime than their least-wealthy counterparts (20-20 ratio=1.50), while in reality the wealthiest jurisdictions had only 45% more officers (20-20 ratio=1.45). Similarly, without COPS the whitest jurisdictions comprising one-fifth of the population would have had 167% more officers per index crime than their least-white counterparts (20-20 ratio=2.67), while in reality the disparity was only 152% (20-20 ratio=2.52).

The second counterfactual analysis suggests that COPS could have had a slightly larger impact on the distribution of police protection if it had single-mindedly distributed funding according to need. For example, if COPS had distributed funding according to violent crime rates, the income 20-20 for index crimes would have been 1.43 instead of the actual value of 1.45: The wealthiest jurisdictions comprising one-fifth of the population would have had only 43% more police per index crime, while in reality they had 45% more. Turning to racial inequality, the whitest jurisdictions comprising that share of the population would have had 143% as many police per index crime as their least-white counterparts, while in reality they had 152% more. The small size of these effects suggests that even though COPS was not explicitly designed to have a strong redistributive impact, in practice its effect was not much smaller than the maximum possible effect a program this size. (The requirement for agencies to apply for COPS funding may have contributed to this pattern: Earlier research found that agencies with high crime rates were especially likely to apply for large grants [Roth *et. al.* 2000: 10].)

In short, and subject to the caveats mentioned earlier, the COPS program did have an egalitarian effect on the distribution of police protection in the United States, but the effect was not large. (If it were possible to account for supplantation of local funding, the effect would be even smaller.) If COPS had distributed funding exclusively on the basis of violent crime rates, it

might have reduced disparities in police protection slightly more than it actually did, but again the impact would have been modest.

Conclusion

This paper has shown that the distribution of police protection is far less egalitarian than earlier studies suggested. In the 1970s, criminologists and political scientists investigated complaints that black and poor communities did not receive the same level of police protection as others, and most of them concluded that the complaints were overblown (see esp. Lineberry 1977; Skogan and Fridell 2004). This paper suggests that there is more truth to the complaints than this early literature suggested, but the relevant inequalities only become visible when we look at the distribution of policing across cities rather than within them. Wealthy police jurisdictions receive much more police protection per crime than poor jurisdictions, and the whitest jurisdictions receive much more protection per crime than the least-white jurisdictions. At the extreme, the whitest jurisdictions comprising 5% of the population employ 10 times as many police per index crime as their largely-nonwhite counterparts.

As I suggested in the introduction, this finding suggests that public policing is more of a market commodity than policing scholars commonly recognize, in that wealthy households can in fact buy their way into well-policed neighborhoods. While many scholars have worried that the rise of private security will replace the egalitarian logic of public provision with the inegalitarian logic of the market (e.g. Sklansky 1999; Bayley and Shearing 2001), I have tried to show that public policing itself already has an inegalitarian cast. The decentralized system of government that prevails in the U.S. creates a competitive market for public services that shares important features with a competitive market for private security.

Although the level of police protection per crime heavily favors whites and the wealthy, the distribution of policing per capita is relatively egalitarian or even progressive: On average,

jurisdictions with the poorest populations have about the same number of police per capita as their wealthy counterparts, and jurisdictions with the largest nonwhite populations actually have more police per capita than their whitest counterparts. The distribution of policing does not seem regressive until we examine the number of police per crime, and it generally looks most regressive when we examine the number of police per violent crime. What to make of these patterns depends on the evaluative standard that one finds most compelling. In the end, reasonable people will differ about this issue, and I have tried to provide information relevant to many different standards.¹⁵

For those who find the arguments for distributing police protection according to need compelling, this paper's findings raise the question of how public policy might make reshape the distribution of policing. Any answer to this question would involve shifting the financial responsibility for policing from the local level to some broader unit of geography. One approach would consolidate local police departments into larger regional agencies, which pool together funding from poorer central cities and wealthier suburbs. This kind of consolidation occasionally succeeds (an example is the 1993 merger of the Charlotte, North Carolina Police Department with the Mecklenburg County Sheriff), but enthusiasm for this approach apparently

¹⁵ It is worth noting, however, that the need-based standard has at least two different justifications, and only one of them is commonly appreciated. The simplest justification rests on the claim that each *individual* should receive benefits proportional to her level of need—for example, that a needier student should receive more attention from her teacher because it will take more effort to help her reach a given level of competence. A different justification derives from the collective nature of many public services. In the case of a collective service like police protection, an individual who lives in a high-need area will typically find that her own access to public services gets crowded out by the heavy demands made by her neighbors. For example, if I live in a jurisdiction with a high burglary rate, and my neighbor just across city lines lives in a low-burglary jurisdiction, then I will receive less protection from burglary even if the two jurisdictions have the same number of police per capita. If my neighbor's house is burglarized her police department will be able to devote considerable time and effort to investigating her case, but my case will receive little attention because my department has so many other burglaries to investigate. The problem is not that *I* have an above-average need for services that police cannot meet; I am not like the disadvantaged pupil who needs more attention from his teacher to succeed as well as his better-prepared peers. My police department simply has fewer investigative resources to devote to me when I do need its help. The same logic applies to community problem-solving, order maintenance, and preventative patrol.

peaked in the 1970s, and many of its critics have pointed out important benefits of decentralized policing (e.g. Ostrom and Whitaker 1973).

A less radical way of redistributing police protection would follow the model of education policy, which has left local school districts intact as an organizational model but increased state and federal contributions to the districts' budgets. By distributing their contributions according to need, state and federal governments have been able to alleviate the financial inequalities associated with local responsibility for education. My findings suggest that a larger federal role in police finance could in fact reduce inequalities in police protection, but they also suggest that expectations need to be modest. As I have shown, the largest experiment in federal revenue-sharing to date—the \$9 billion COPS program—had at best (i.e. ignoring the supplantation of local expenditures by federal funds) only a modest impact on the distribution of policing. COPS might have had a bigger effect if it had pursued more single-mindedly egalitarian goals, but the added benefit would have been modest. (Indeed it would have been so modest that it might not be worth engaging the political difficulties that an overtly-redistributive funding formula would face.) For revenue-sharing to influence the distribution of police protection more substantially, federal and state expenditures on policing would have to be much larger or longer-running than COPS. By way of comparison, state and federal funding accounts for more than half the nation's educational spending (Snyder 2008), but the \$1 billion-a-year COPS program accounted for about 1% of the total amount spent on policing (Hughes 2006).

This research also suggests a subtler limitation of revenue-sharing as a tool for equalizing the distribution of police protection: Much of the fluctuation in the level of police per crime results from fluctuations in crime rates rather than fluctuations in police employees. Wealthy communities did not employ a larger share of the nation's police officers in 2000 than they did in

1970; indeed their share actually fell slightly. Instead, inequality grew because crime itself—particularly violent crime—became substantially more concentrated in poor communities. Thus the distribution of police employees has shifted only modestly while the distribution of crime has changed dramatically.

The challenge for public policy is that it may prove very difficult to reallocate police protection substantially and rapidly enough to keep up with the large and possibly short-term shifts in crime rates that rich and poor communities experience. Within a single police jurisdiction, a department can fairly easily reallocate its resources annually or even weekly based on current information about where the greatest needs lie. That kind of reallocation is much more difficult across jurisdictions, since in the U.S. context it would mean relocating officers among distinct and autonomous police agencies. (One possibility might be a kind of centralized “police corps” that would annually send groups of officers to the neediest jurisdictions. Such an arrangement might have the added benefit of helping to disseminate innovative ideas across agencies.) Thus while revenue-sharing may reshape the distribution of policing at the margins, its ability to respond to rapidly-changing patterns of need has limits. None of this is to say that revenue-sharing cannot make an important difference in the distribution of police protection, but it is to say that its goals need to be modest.

Future research can help to improve our understanding of the distribution of policing. I have concluded that this distribution is highly unequal in the U.S., at least when police strength is measured as the number of police per crime, and that the disparity has generally grown since 1970. That conclusion must be qualified in a number of ways beyond the controversial normative issues involved, and future empirical research may be able to examine how important these qualifications are. Most important, the number of police officers is an imperfect measure

of the level of police protection. As the literature on the distribution of policing within cities wound down in the 1980s, many scholars called for more sophisticated measures of police service, arguing that an equal distribution of expenditures or personnel might coexist with an unequal distribution of service quality or effectiveness. This concern clearly applies to my own study. Limitations of the available data make it difficult to overcome, but future research may want to consider analysis of different measures of police workload by turning to additional data sources such as the Census of Government and the Law Enforcement Management and Statistics survey. It seems unlikely that this research would reverse the basic picture presented here, since there is little reason to believe that the quality of policing is systematically better in black and poor communities compared with white and wealthy communities, and even less to think it is so *much* better that the difference could counterbalance the large inequalities in the raw number of officers per crime documented here. Nevertheless, the level of police protection that residents experience depends on the quality of police as well as their quantity, and insofar as quantitative disparities are exacerbated by differences in quality the picture for disadvantaged communities may be even worse than I have described. For these reasons, this study offers only one window on the distribution of policing.

Future research can also investigate the factors that contribute to unequal protection in more detail. Like much of the literature on urban service delivery, this study has mainly focused on descriptive and interpretive questions rather than explanatory ones, so causal explanations of the patterns described here remain for future research. It seems unlikely that simple explanations exist: Inequality in the U.S. has grown across many domains for many reasons during this period, and the patterns documented here are undoubtedly related to those broader forces in complex ways. Nevertheless, one factor linking the broader sources of social inequality to inequality in

police protection may be the decentralized system of government I stressed earlier. Because that system allows the most-advantaged households to buy their way into well-protected neighborhoods, socioeconomic inequality breeds inequality in police protection. Of course, the Tieboutian model underlying this hypothesis is an idealization that does not hold exactly anywhere (Tiebout himself called it “extreme”). It fits empirical reality best insofar as residents are highly mobile and many jurisdictions compete for them, and for that reason some researchers have investigated whether regions with many small jurisdictions approximate Tiebout’s predictions more closely than less-fragmented regions do (e.g. Basolo 2000). With additional data and different measures of inequality (which would need to account for the varying ways in which such regions carve up their total population into jurisdictions) it may be possible to pursue this line of inquiry in policing. The extensive literature on Tiebout’s hypothesis provides many other approaches that criminologists could use to explain the (changing) distribution of police protection (see e.g. Dowding, John, and Biggs 1994; Banzhaf and Walsh 2008).¹⁶

Efforts like these to study the causes of inequality may or may not help identify the best way to reduce it, and in the end it is the latter that matters most. Here I have examined the potential of federal revenue-sharing, but in education the states have played a more important role in reducing inequality. That experience suggests the need to examine the potential for state-level intervention in the distribution of policing. First, future researchers should investigate the extent of existing state revenue sharing programs and how these programs affect the distribution

¹⁶ Alternatively, future research on the distribution of police protection might investigate other analyses of local policy choices. The most influential alternative to the dominant Tieboutian tradition focuses on the internal political dynamics of individual jurisdictions rather than competition among local governments for residents (Stone 2004), and although it is difficult to study those dynamics in large-n quantitative studies like this one, case study research could analyze how regional patterns in the distribution of police protection arise out of the internal politics of individual jurisdictions (including the way each unit of government mimics, reacts to, and exchanges ideas with its neighbors [Leicht and Jenkins 2007: 71-2]).

of police protection—or how they could affect it under alternative distribution formulas. Some states do provide revenue sharing for local police departments, but I am aware of no comprehensive study of the scope and impact of such programs. Second, for the reasons given earlier, this study has ignored the role of state police in local law enforcement. Particularly in poor rural areas, that role might be substantial, and since state police could regularly reallocate officers across districts it may offer one of the few realistic ways to adapt police resources to rapid changes in the distribution of crime. Future research should try to study the general-purpose policing role played by different state police agencies and the impact it has, or potentially could have, on the distribution of police protection.

Finally, some studies of revenue sharing in education conclude that the drive to equalize funding may have had unintended consequences, particularly by reducing the overall amount of revenue available for schooling and other government services (Fischel 1989; but see Kirk and Zasloff 2003) and by reducing the quality of education (Hoxby 2000; but see Rothstein 2007). Any effort to equalize the distribution of policing would undoubtedly raise similar objections, and future research could try to investigate whether such concerns are warranted.

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Table 1
Police Protection by Race and Class Composition of Jurisdiction, 2000

	<u>Average # of police employees per</u>		
	1000 residents	100 Index crimes*	100 Violent crimes*
<u>Per-capita income</u>			
Richest jurisdictions comprising 5% of the U.S. population	2.78	21.48	418.04
Poorest 5% . . .	2.69	11.97	120.01
5:5 ratio	1.03	1.79	3.48
Richest 20%	2.84	14.97	270.43
Poorest 20%	2.78	10.31	113.90
20:20 ratio	1.02	1.45	2.37
Richest 50%	2.99	14.89	174.87
Poorest 50%	2.82	11.45	128.27
50:50 ratio	1.06	1.30	1.36
Concentration Index	0.03	0.16	0.34
<u>Percent white</u>			
Whitest jurisdictions comprising 5% of the U.S. population	1.93	58.96	336.77
Least-white 5% . . .	3.66	6.16	46.81
5:5 ratio	0.53	9.58	7.19
Whitest 20%	2.13	24.95	287.89
Least-white 20%	4.04	9.91	52.56
20:20 ratio	0.53	2.52	5.48
Whitest 50%	2.40	17.85	237.16
Least-white 50%	3.40	9.08	77.87
50:50 ratio	0.71	1.96	3.05
Concentration Index	-0.24	0.38	0.55

* The "police per crime" figures exclude jurisdictions that reported fewer than 3 months of crime data.

Table 2
Police Protection by Racial and Class Composition of Jurisdiction, 1970-2000

	Average number of police employees per											
	1,000 residents				100 Index Crimes*				100 Violent Crimes*			
	1970	1980	1990	2000	1970	1980	1990	2000	1970	1980	1990	2000
Per-capita income												
Richest 5%	2.14	2.44	2.75	2.78	7.61	13.99	9.96	21.48	336.88	187.47	242.91	418.04
Poorest 5%	0.93	1.51	2.05	2.69	12.91	14.26	18.47	11.97	169.71	123.69	132.39	120.01
5:5 ratio	2.30	1.62	1.34	1.03	0.59	0.98	0.54	1.79	1.99	1.52	1.83	3.48
Richest 20%	1.98	2.35	2.56	2.84	5.69	6.94	7.89	14.97	204.27	127.99	157.13	270.43
Poorest 20%	1.50	1.88	2.26	2.78	9.74	11.57	11.56	10.31	161.35	121.53	127.10	113.90
20:20 ratio	1.32	1.25	1.13	1.02	0.58	0.60	0.68	1.45	1.27	1.05	1.24	2.37
Richest 50%	2.35	2.36	2.68	2.99	5.57	5.50	6.81	14.89	149.22	98.94	110.41	174.87
Poorest 50%	1.85	2.14	2.41	2.82	8.39	8.70	10.41	11.45	150.47	108.40	118.26	128.27
50:50 ratio	1.27	1.10	1.11	1.06	0.66	0.63	0.65	1.30	0.99	0.91	0.93	1.36
CI	0.14	0.07	0.08	0.03	-0.27	-0.26	-0.18	0.16	0.11	0.02	0.08	0.34
Percent white												
Whitest 5%	1.18	1.46	1.75	1.93	18.56	11.44	18.06	58.96	312.25	252.73	315.54	336.77
Least-white 5%	3.26	3.65	3.60	3.66	4.76	5.42	6.40	6.16	53.34	40.04	33.08	46.81
5:5 ratio	0.36	0.40	0.49	0.53	3.90	2.11	2.82	9.58	5.85	6.31	9.54	7.19
Whitest 20%	1.31	1.62	1.85	2.13	10.11	10.13	12.79	24.95	306.24	215.28	251.74	287.89
Least-white 20%	2.97	3.19	3.58	4.04	6.52	4.97	5.58	9.91	53.98	36.40	30.40	52.56
20:20 ratio	0.44	0.51	0.52	0.53	1.55	2.04	2.29	2.52	5.67	5.91	8.28	5.48
Whitest 50%	1.50	1.84	2.09	2.40	8.03	9.22	11.55	17.85	236.64	160.04	181.99	237.16
Least-white 50%	2.70	2.65	3.00	3.40	5.92	4.99	5.69	9.08	67.17	49.50	49.97	77.87
50:50 ratio	0.56	0.70	0.70	0.71	1.36	1.85	2.03	1.96	3.52	3.23	3.64	3.05
CI	-0.38	-0.27	-0.26	-0.24	0.21	0.34	0.40	0.38	0.69	0.67	0.73	0.55

* The "police per crime" figures exclude jurisdictions that reported fewer than 3 months of crime data.

Table 3
Trends in Crime and Police Protection by Economic Composition of Jurisdiction
1970-2000

Police Employees Per 1,000 Population					Change	
	1970	1980	1990	2000	1970-2000	1990-2000
Richest 20%	1.98	2.35	2.56	2.84	+44%	+11%
Poorest 20%	1.50	1.88	2.26	2.78	+86%	+23%
20:20 Ratio	1.32	1.25	1.13	1.02	-23%	-10%

Index Crimes per 100,000 Population					Change	
	1970	1980	1990	2000	1970-2000	1990-2000
Richest 20%	4,486	5,928	4,377	2,520	-44%	-42%
Poorest 20%	3,176	4,249	4,792	4,124	+30%	-14%
20:20 Ratio	1.41	1.40	0.91	0.61	-57%	-33%

Violent Crimes per 100,000 Population					Change	
	1970	1980	1990	2000	1970-2000	1990-2000
Richest 20%	293	437	359	230	-21%	-36%
Poorest 20%	297	482	647	578	+95%	-11%
20:20 Ratio	0.99	0.91	0.56	0.40	-60%	-28%

Table 4
Police Protection by Racial and Class Composition of Jurisdiction
2000 Actual and Counterfactual Scenarios

	Police per 1,000 residents			Police per 100 index crimes			Police per 100 violent crimes		
	<u>2000 Actual</u>	<u>Without COPS</u>	<u>Hypothetical COPS*</u>	<u>2000 Actual</u>	<u>Without COPS</u>	<u>Hypothetical COPS*</u>	<u>2000 Actual</u>	<u>Without COPS</u>	<u>Hypothetical COPS*</u>
<i>Measure of advantage</i>									
Per-capita income									
Top 5%	2.78	2.63	2.70	21.48	20.52	20.87	418.04	392.95	398.55
Bottom 5%	2.69	2.35	2.64	11.97	10.80	11.66	120.01	110.25	115.85
5:5 ratio	1.03	1.12	1.02	1.79	1.90	1.79	3.48	3.56	3.44
Top 20%	2.84	2.65	2.77	14.97	14.02	14.48	270.43	251.13	256.73
Bottom 20%	2.78	2.47	2.80	10.31	9.36	10.14	113.90	104.44	110.03
20:20 ratio	1.02	1.07	0.99	1.45	1.50	1.43	2.37	2.40	2.33
Top 50%	2.99	2.73	2.96	14.89	13.98	14.60	174.87	161.66	167.26
Bottom 50%	2.82	2.55	2.85	11.45	10.48	11.19	128.27	118.88	124.48
50:50 ratio	1.06	1.07	1.04	1.30	1.33	1.30	1.36	1.36	1.34
CI	0.03	0.04	0.02	0.16	0.17	0.16	0.34	0.35	0.34
Percent white									
Top 5%	1.93	1.75	1.80	58.96	57.15	57.64	336.77	311.57	317.17
Bottom 5%	3.66	3.20	3.84	6.16	5.43	6.38	46.81	41.93	47.53
5:5 ratio	0.53	0.55	0.47	9.58	10.52	9.04	7.19	7.43	6.67
Top 20%	2.13	1.95	2.02	24.95	23.67	24.12	287.89	266.17	271.77
Bottom 20%	4.04	3.57	4.13	9.91	8.86	9.94	52.56	47.31	52.91
20:20 ratio	0.53	0.55	0.49	2.52	2.67	2.43	5.48	5.63	5.14
Top 50%	2.40	2.22	2.33	17.85	16.75	17.22	237.16	220.09	225.69
Bottom 50%	3.40	3.06	3.47	9.08	8.28	9.11	77.87	71.54	77.13
50:50 ratio	0.71	0.72	0.67	1.96	2.02	1.89	3.05	3.08	2.93
CI	-0.24	-0.23	-0.28	0.38	0.41	0.36	0.55	0.56	0.53

* "Hypothetical COPS" scenario reallocates COPS funding according to violent crime rates -- i.e., each jurisdiction receives a share of the total COPS budget that is proportional to its share of the nation's violent crime.