

TOWARD A NATIONAL ESTIMATE OF POLICE USE OF NONLETHAL FORCE*

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Research Summary

Despite frequent calls for national data on police use of force, the literature is dominated by unrepresentative samples from a small number of primarily urban jurisdictions, inconsistent definitions of force, and differing universes for the computation of rates. Among 36 publications that report on the amount of nonlethal force used by the police, rates vary from 0.1% to 31.8%. To improve our ability to estimate the amount of nonlethal force in the United States, we employ data from two sources: the Police-Public Contact Survey (PPCS) and the Survey of Inmates in Local Jails (SILJ). Using comparable measures from these surveys, we estimate that the police use or threaten to use force in 1.7% of all contacts and in 20.0% of all arrests. The PPCS accounts for 87% of the total force incidents derived from both surveys. Males, youths, and racial minorities report greater rates of police use of force, but multivariate models highlight the role of potentially provoking behaviors on the likelihood and severity of force.

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Policy Implications

Improved estimates from the combined PPCS-SILJ samples support the proposition that police use force infrequently and at the lower end of the severity scale. Reported amounts of force vary based on respondent race, sex, and age, but greater variation in police use of force is explained by suspect behavior. The combined PPCS-SILJ sample provides a more representative basis for estimating the rate and correlates of nonlethal force. State and local estimates from less representative samples can be interpreted in light of these findings. National estimates could be improved by devoting sufficient resources to support the collection of agency records of both lethal and nonlethal force.

Keywords: police, nonlethal force, measurement, national estimates

In the United States, nearly 18,000 state and local law-enforcement agencies employ more than 730,000 officers who have the legal authority to deprive citizens of their liberty and use a variety of coercive tactics, which include lethal and nonlethal physical force (Reaves, 2007). This authority is implicit in the police role, and the potential for its explicit use is present in every contact between the police and the public (Skogan and Frydl, 2004). The authorization to use physical force is recognized as the core element that defines and distinguishes police work from most other professions (Bittner, 1970).

The extent to which the police use (and misuse) their authority to inflict physical force is a persistent controversy in criminology and in public policy. The traditional focus of this issue has been on deaths caused by police officers (Blumberg, 1989; Fyfe, 1978; Geller and Karalas, 1981; Geller and Scott, 1992; Reiss, 1980; Robin, 1963; Sherman and Cohn, 1984). Recent scholarly and public policy attention has emphasized the more frequent, but less severe, types of verbal and physical force employed by law enforcement officers (Adams, 1995; Durose, Smith, and Langan, 2007; Engel, Sobol, and Worden, 2000; Friedrich, 1980; Garner, Buchanan, Schade, Hepburn, Fagan, and Mulcahy, 1995; Pate and Fridell, 1993; Worden, 1995).

Democratic policing is concerned primarily with the behavior of the police and less so with the behavior of citizens (Bayley, 1996; Manning, 2003). In a democracy, it is critical to have mechanisms to monitor and evaluate the police in order to ensure that democratic ideals are being upheld. Given the centrality of coercive authority in defining the police role, a paramount concern is the collection of information about the nature and extent of police use of force in the United States (Adams, 1995; Alpert and Fridell, 1992; Fyfe, 1988b, 2002; Geller and Scott, 1992; Geller

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and Toch, 1995; Kane, 2007; Klockars, 1995; Matulia, 1982; Pate and Fridell, 1993, 1995; Sherman and Langworthy, 1979). Yet local, state, and federal governments actually collect and report very little information about police use of force, much less than about police behavior in general.

This article takes as its point of departure the concern that the nation's only systematic, national-level indicator of police use of force—which is the Police-Public Contact Survey (PPCS) administered by the Bureau of Justice Statistics (BJS)—underestimates the amount of force because of the exclusion of recently incarcerated persons (e.g., Fyfe, 2002). In so doing, this article provides the first analysis of force experienced by incarcerated persons at the time of their arrest, as captured in the BJS Survey of Inmates in Local Jails (SILJ). Our goal is to contribute to the process of refining the measurement of police use of force and to present a more complete, descriptive portrayal regarding national estimates of police use of nonlethal force.

In the next section, we review the literature reporting rates of physical force by police. We then describe both the PPCS and the SILJ in general and focus in particular on parallel measures of police force from both studies. We combine the two samples and present descriptive statistics and multivariate models from both the separate and the combined data. Finally, we discuss the implications of our analyses and offer some suggestions for the future development of national indicators of nonlethal force.

Literature Review

Research on Nonlethal Force

The research on police use of nonlethal force addresses a variety of research questions about the frequency, types, and levels of force used by the police as well as about the individual, situational, organizational, and environmental correlates of force. Prior reviews of this research (Adams, 1995; Garner, Maxwell, and Heraux, 2002; Riksheim and Chermak, 1993; Worden, 1995) have reported little consistency on either the amount of nonlethal force used or the correlates of nonlethal force. However, the variation in findings may be caused by the heterogeneity of approaches used in measuring nonlethal force, the sources of data about uses of force, the types of situations studied, the jurisdictions included, and the time period of the study.

Measuring Nonlethal Force

Although little controversy surrounds what constitutes lethal force, the research literature does not agree on what types of police behavior constitute nonlethal force. For instance, some determinations of the existence of nonlethal force rely on expert judgments (Friedrich, 1980), whereas other studies use the existence of charges for resisting arrest as a measure of force (Kavanagh, 1994). More specifically, Lundstrom and Mullan (1987) define nonlethal force as the use of any police weapon, which includes “fists or hands.” Terrill and Mastrofski (2002) include handcuffing, searches, and pat downs in their definition of force. Hickman (2006) measures force indirectly, using official citizen complaints about police use of force. Finally, Smith (1986) as well as Terrill and Mastrofski (2002) include threats of arrest (but not arrest itself) in their definitions of force.

Some of this research has moved beyond defining simple dichotomous measures of nonlethal force and has attempted to create categorical measures that capture gradations in the severity of different types of nonlethal force (Alpert and Dunham, 1999; Garner, Schade, Hepburn, and Buchanan, 1995; Klinger, 1995; Terrill and Mastrofski, 2002). None of these measures of the force continuum are even roughly equivalent. Garner, Schade et al. (1995) used the continuum of the Phoenix Police Department, whereas the other studies created their own sets of categories. In addition, Alpert and Dunham’s (1999) categorical measure only pertains to incidents in which some force is used, and this measure cannot be used to generate an incident-based rate of force. Similarly, Hickman’s (2006) measure can be used to compute a rate of force per agency or per officer, but not an incident-based (i.e., arrest or encounter) rate. Whether the measures were dichotomous or categorical, Garner et al.’s (2002) review (which includes studies by the same author or those that use data from the same sample) of 15 publications found that no two studies used the same definition or measure of force. Our updated review (see Appendix A) reveals that each author or research team continues to use noncomparable measures of force.

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Sources of Data on Use of Force

We have identified 36 publications that report an incident-based rate of force. For those studies, Table 1 displays the sources of data used, the types of situations studied, the jurisdictions included in the research, and the dates of data collection.¹ We found six sources of data: arrest reports, household surveys, independent observations, police surveys, suspect surveys, and use-of-force forms. Nearly half (15 of 36) of the publications are based on independent observations of the police, 10 are based on surveys of police officers or arrested suspects, 8 derive data from official police use of force forms, and 3 use household surveys.

Data from independent observers are presumably less biased than self-reports by officers, suspects, or citizens; however, observations are expensive, require permission from participating agencies, and tend to be limited to a small and unrepresentative proportion of beats, shifts, and officers within a particular jurisdiction. In addition, most systematic observational studies were conducted during the summer months only. Official arrest reports and use-of-force forms typically capture more incidents of police uses of force over a longer period of time but are dependent on departmental definitions of force and on the submission of reports by officers (Pate and Fridell, 1995). Suspect surveys are also expensive and typically involve interviewing suspects while they are in police custody. Household surveys are based on a nationally representative sample of households but are dependent on survey response rates as well as on citizen definitions of use of force; also, they do not include the recently arrested or incarcerated populations.

These 36 publications varied even more in the types of incidents used to compute rates of force. Among the 15 studies that used independent observations, the rate of force was based on five types of incidents: citizen encounters, disputes, police stops, potentially violent mobilizations, and suspect encounters. Fourteen publications, which mostly used data from police surveys, suspect surveys, and use-of-force forms, used arrests as the type of incident on which to base a rate of force. One study (International Association of Police Chiefs [IACP], 2001) based its rate of force on calls for service. Each of these incident types presents methodological and substantive strengths and weaknesses in computing rates of police use of nonlethal force. Arrests, stops, and calls for service are presumably easier to identify but may not adequately represent the preferred sample of incidents with real potential for violence by or against the police.

1. Some research data files are used in multiple publications in Table 1. In addition, one publication (Garner, Buchanan et al., 1995) includes data on police use-of-force from two sources.

Table 1. Sources of Data about Police Use of Force

Data source	Unit of analysis	Jurisdiction(s)	Years	Publications
Arrest Reports	Arrests	New York City	1990	Kavanagh, 1994
Household Surveys	Contacts	United States	1999	Langan et al., 2001
			2002	Durose et al., 2005
			2005	Durose et al., 2007
	Citizen Encounters Disputes	Cincinnati	1997–1998	Frank et al., 2001
		Dade County, FL	1985–1986	Fyfe, 1988b; Klinger, 1995
	Police Stops Potentially Violent Mobilizations	Savannah, GA	2002	Alpert et al., 2008
		New York City	1986	Bayley and Garofalo, 1989
		Boston, Chicago, and Washington, DC	1965	Friedrich, 1980
		Rochester, St. Louis, Tampa/St. Petersburg	1977	Smith, 1986; Worden, 1995; Engel et al., 2000
		Richmond, VA	1992	Mastrofski, 1997 Engel, 2000; Terrill and Mastrofski, 2002; Terrill, 2003a; Terrill and Reisig, 2003; Paoline and Terrill, 2007
Independent Observations	Suspect Encounters	Indianapolis and St. Petersburg	1996–1997	
		St. Paul	1985–1986	Lundstrom and Mullan, 1987
		Phoenix	1994	Garner, Buchanan et al., 1995; Schuck, 2004
		Charlotte, Colorado Springs, Dallas, St. Petersburg, San Diego City and County	1996–1997	Garner et al., 2002; Schuck and Rabe- Hemp, 2005
Police Surveys	Arrests	Southeastern city	2000–2001	Kaminski et al., 2004
		Phoenix	1994	Garner, Buchanan et al., 1995; Schuck, 2004
Suspect Surveys	Arrests	Queensland, Aus.	1999	Edwards, 2000
		El Salvador	2002	Phillips et al., 2006
		Rochester	1973–1979	Croft, 1985
	Citizen Encounters	Montgomery County, MD	1993–1999	Hickey and Garner, 2002
		Polk County, FL	1999	Williams and Hester, 2003
		Seattle	2000	Seattle Police Department, 2001
		Midwestern city	2002–2004	Terrill et al., 2008
		San Antonio, TX	2001–2002	Terrill, 2003b
		Polk County, FL	1999	Williams and Hester, 2003
		Midwestern city	2001–2003	Leinfelt, 2005
Use of Force Forms	Calls for Service	238 U.S. jurisdictions	1999	IACP, 2001

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Twenty publications in Table 1 are based on data from only one jurisdiction, and 12 studies are based on data from two to six jurisdictions. One publication is based on reports from 238 law enforcement agencies, and another publication is based on reported uses of force by U.S. immigration authorities against individuals deported to El Salvador. Three publications are based on a representative sample of U.S. households, and they are the only studies of police use of nonlethal force to include incidents from rural and suburban jurisdictions. Although most publications in Table 1 use data on police use of nonlethal force from the 1990s, some data were collected as early as 1965, and other data were collected as recently as 2006.

If anything, the categories in Table 1 oversimplify the heterogeneity of the available research on the amount of police use of nonlethal force. In addition, the unique definitions of force used in each study, as well as the simple ways we have defined incidents, obscure variation. For example, “suspect encounters” are defined differently within the 10 publications that use that term, and equally dissimilar meanings for behaviors are captured under the term “arrest.” Moreover, Table 1 also uses city and national labels for jurisdictions when data were often collected from only parts of the jurisdiction listed. For details on sample types and sizes, definitions of force, and reported rates of force, see Appendix A.

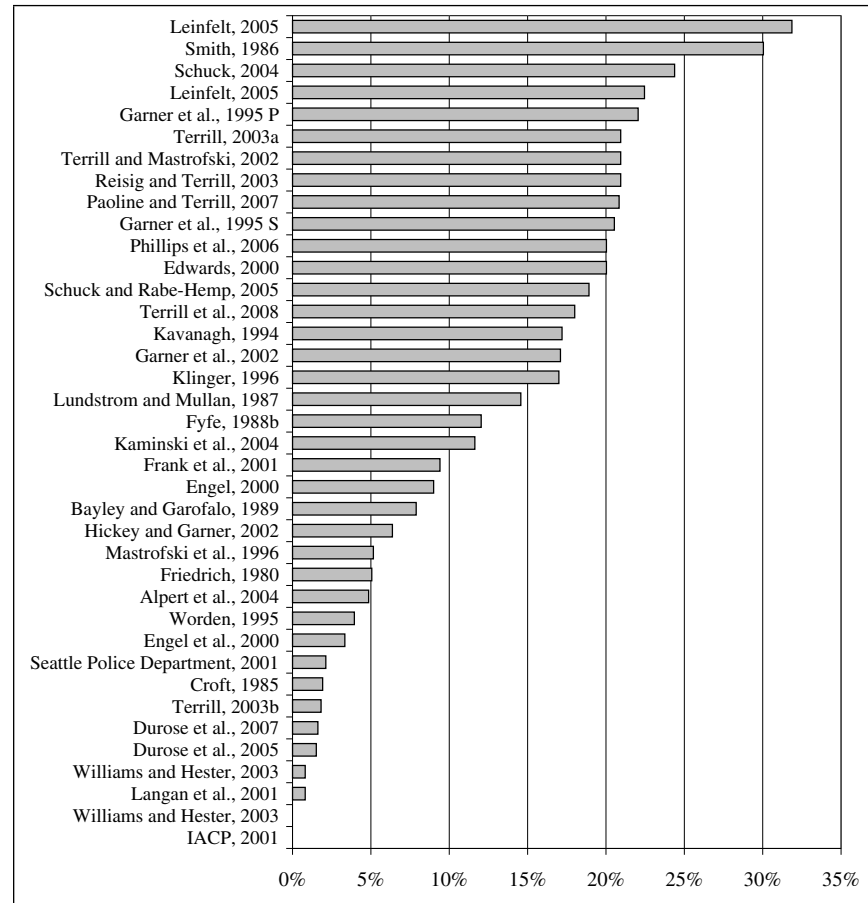
Reported Rates of Police Use of Nonlethal Force

Given the diversity in methods and measures employed by the 36 publications displayed in Table 1, it would be surprising if any similarities were observed in the reported rates of police use of nonlethal force. Figure 1 displays the rates of physical force reported in these 36 publications. These rates vary from 0.1% of reported calls to the police in 238 U.S. jurisdictions in 1999 (IACP, 2001) to 31.8% of arrests made in a midwestern U.S. city during 2001–2003 (Leinfelt, 2005).

Of the 15 publications that used data from field observations to report the amount of force used, the rates of physical force range from 3.4% (Engel, 2000) to 30.0% (Smith, 1986). Most force rates in these publications are computed based on researcher-defined encounters; none are computed based on arrests. Of the 10 reports of police use of force derived from surveys of police officers or suspects, the rates of physical force ranged from 14.6% (Lundstrom and Mullan, 1987) to 24.4% (Schuck, 2004). One publication (Garner, Buchanan et al., 1995) reports the rate of force from two sources of data: A survey of police officers generated slightly greater rates of force (22.4%) than a survey of arrested suspects (20.5%). The rates reported in the survey-based publications are all computed using arrests, not encounters. The reported rates of physical force

among the nine publications that compiled data from official police use-of-force forms vary from 0.08% (IACP, 2001) to 22.4% (Leinfelt, 2005). Most of these publications reported rates based on arrests, but two studies (Leinfelt, 2005; Williams and Hester, 2003) reported rates based on both arrests and encounters.

Figure 1. Reported Rates of Physical Force in 36 Studies



Notes. P = Police Surveys. S = Suspect Interviews.

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Nationally Representative Samples

All publications that obtained data on police use of force from observational data, police surveys, and arrestee surveys relied on permission from the participating agencies and from the individual officers and arrestees. Although data from arrest reports and official police use-of-force forms are sometimes available through state and local open-records legislation, most of the publications in Table 1 that used these types of data obtained them with the permission of the agency or agencies being studied. For this reason, even if all of these publications had used the same definitions and measures of force and had reported similar rates of force, the use of a relatively small number of volunteer jurisdictions limits the likelihood that their reported findings regarding the amount of force reasonably could be generalized to all U.S. jurisdictions.

The lack of national-level data on police use of force is one of the most severe criticisms of this entire body of research and a continuing theme in research on both lethal and nonlethal use of force. Researchers (Adams, 1995; Alpert and Fridell, 1992; Fyfe, 1988a; Geller, 1985; Geller and Scott, 1992; Geller and Toch, 1995; Klockars, 1995; Matulia, 1982; Pate and Fridell, 1993, 1995; Sherman and Langworthy, 1979) and big-city police chiefs (James, 1991), as well as law enforcement reform advocates (Crime Control Digest, 1991), have called for expanded databases at both the local and national levels on all uses of force, not just lethal force. With regard to the use of lethal force, Fyfe (2002:99) asserts that it is shameful that “we still live in a society in which the best data on police use of force come to us not from the government or from scholars, but from the *Washington Post*.” Kane (2007) argues that departments should adopt data collection and dissemination not for research purposes, but as a professional standard for policing.

In the early 1990s, Pate and Fridell (1993) explored the scope and depth of existing requirements for reporting use of force within individual law enforcement agencies, as a basis for a national reporting system. Calls for a national reporting system were enhanced with the 1994 Violent Crime Control and Law Enforcement Act’s provisions calling on the U.S. Attorney General to “acquire data about the use of excessive force by law enforcement officers” and to “publish an annual summary of the data” (Title XXI, Subtitle D, Section 210402).

Unfortunately, Congress has provided no funds to support this mandate, and the Justice Department has issued no annual summaries of national-level data about police use of force, excessive or otherwise. In anticipation of the congressional mandate, Klockars (1994) drafted for the National Institute of Justice a list of requirements for a reliable and efficient

national reporting system, but this plan was neither developed nor implemented. The implementation of a national reporting system was attempted and then abandoned after 3 years (IACP, 2001) largely because of a lack of funding to support the system.

The only remnant of the 1994 congressional mandate is the PPCS, which was implemented first in 1999 and subsequently in 2002 and 2005. The PPCS is a supplement to the National Crime Victimization Survey (NCVS), which employs a nationally representative sample of households. Three publications used data from the PPCS to obtain information on police use of force (Durose, Smith, and Langan, 2005, 2007; Langan, Greenfeld, Smith, Durose, and Levin, 2001). Of the studies based on surveys of households, the reported rates of force ranged from 1.6% (Durose et al., 2007) to 0.8% (Langan et al., 2001). These rates are based on police-public contacts, not on arrests or encounters. Unlike most of the publications listed in Table 1, those based on household surveys do not depend on the cooperation of law enforcement agencies or officers. However, the PPCS is not without its critics. Lichtenberg (2007), for example, has provided evidence that the PPCS may underestimate police contacts in general, traffic stops and tickets, DUI arrests, and traffic accidents, when compared with data from the National Center for State Courts and the Uniform Crime Reports. Moreover, Lichtenberg pointed out that all of the long-standing criticisms of the NCVS sample exclusions (e.g., Maxfield, 1999) also apply to the PPCS because it is an NCVS supplement.

Summary of Existing Research

Despite long-standing support for the collection and reporting of national-level data on police use of force, the existing research literature—although extensive and informative for other purposes—does not provide a reasonable basis for estimating either the amount of force used by police in the United States or the correlates of force. The highest estimate of the amount of force is more than 30 times greater than the lowest estimate, and the reported rates vary depending on the measure of force used, the types of incidents studied, and the jurisdictions included. Publications that measure police use of force typically rely on data from a single jurisdiction, and those that collect data from more than one jurisdiction typically report summary findings, not site-specific findings. Excluding publications based on the PPCS, our knowledge about police use of nonlethal force comes from about 300 of the 18,000 law enforcement agencies in the United States. Only the PPCS provides a nationally representative sample to study the use of force by the police.

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For the purposes of measuring the amount of police use of force, a more salient criticism of the PPCS sample is that recently incarcerated individuals are excluded (Fyfe, 2002). Virtually all of these individuals will have had contact with the police, and most will have been arrested; thus, given that their current offenses or career patterns are sufficiently serious to warrant jail time, a substantial proportion will constitute a high-risk population for police use of force. However, Fyfe did not estimate the size of the recently incarcerated population or the extent and nature of the force used against them. Thus, to some unknown extent, the exclusion of recently incarcerated individuals from the PPCS likely results in an underestimation of police use of force. In the course of providing a refined national estimate of nonlethal force, this article will empirically assess this criticism. In the next section, we describe our data and methods.

Data

As mentioned, we used the PPCS in conjunction with the SILJ. To ensure comparability, we used data from both sources for 2002 (U.S. Department of Justice, 2005, 2006). The NCVS-based sample for the 2002 PPCS included 93,410 persons aged 16 years or older, with completed interviews for 76,910 persons. The sample was weighted to represent a national estimate of about 215.5 million persons aged 16 years or older (see Durose et al., 2005).

The SILJ was a computer-assisted personal interview conducted with a nationally representative sample of jail inmates. The inmates were selected using a two-stage, systematic sample design (James, 2004). A total of 6,982 interviews were conducted for the 2002 SILJ, with adjustments and weighting to represent the population of 631,241 inmates in local jails as of June 30, 2001. Some inmates were not asked interview questions that pertained to police use or threat of force at the time of their arrests because they either did not have a controlling offense (i.e., "unconvicted," $n = 1,996$) or did not report an offense in earlier interview questions (i.e., "no offense," $n = 86$). Skip patterns in the SILJ interview protocol limited the number and types of questions asked of these inmates; as a result, they were excluded from the analysis reported here. In addition, another 122 inmates were excluded because they were not arrested, went in to a police station voluntarily, or were incarcerated at the time of arrest; thus, they were not asked interview questions that pertained to police use or threat of force at the time of arrest. These steps reduce the effective (weighted) denominator to 437,768 inmates.

Probability of Overlap

The SILJ was conducted from January through April of 2002, whereas the PPCS supplement to the NCVS was conducted during the last 6 months of 2002. As such, one cannot rule out the possibility of overlap between the two studies (i.e., it is possible that an inmate in the SILJ interview sample could have subsequently been released and interviewed as part of the PPCS sample). To the extent any overlap occurred, force events could be double counted. We examine the probability of overlap by examining the studies' designs as well as available data on inmate release and transfers from the SILJ.

The NCVS follows a rotating panel design. Households are selected through a multistage, stratified random sampling procedure, and they are placed within one of six rotation groups. Within each rotation group, there are six panels, in which one panel is interviewed each month. Each rotation group is interviewed seven times. After seven interviews, a panel is replaced with a newly selected panel. (For greater detail on the NCVS history and design, see Lauritsen and Catalano, 2005). Overlap can occur two ways: if an inmate interviewed in the SILJ is released and returns to a household (1) already included in an NCVS panel or (2) newly selected for inclusion in a panel.

Some inmates in local jails were awaiting sentencing, transfer to another facility (such as a prison), or release for their controlling offenses. The SILJ interview asked inmates whether they had a release date as well as the month and year of release. About half of the inmates included in the current study (2,318 of 4,778 unweighted interviewees, or 49%) indicated that they had a release date, and for most of those inmates (2,063, or 43%), the release date was during 2002. Inmates who did not have a release date were asked for the date of their earliest court appearance and whether they expected to be released at that time. Thirty-four percent ($n = 1,624$) of the inmates in the current study indicated a court date during 2002, and 15% ($n = 700$) expected to be released at that time. As a result, a total of 58% ($n = 2,763$) of the interviewees potentially could have been released and subsequently interviewed as part of the PPCS. Based on our examination of the study methodologies and available data, we concluded that the probability of overlap between the SILJ and PPCS interviews was very low.

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Measurement

All force-related items included in the PPCS and SILJ appear in Appendix B. The overall force prevalence items are *5a* from the PPCS and *19e* from the SILJ. Both items ask respondents whether police used or threatened to use force in the most recent face-to-face contact (PPCS) or arrest (SILJ). The type of force used by officers is drawn from items *5b* in the PPCS and *19f* in the SILJ. Subcategories of these items that are directly comparable include whether officers: (1) pushed or grabbed, (2) kicked or hit, or (3) pointed a gun at the respondent. Both the PPCS and the SILJ include an item to capture the use or threat of any “other” type of force. The SILJ has additional items that specify use of dogs, pepper spray, and discharge of firearms. For analytic purposes, these latter items were combined in the “other” category. Injury that resulted from the use of force is drawn from items *5e* in the PPCS and *19g* in the SILJ. Both items asked respondents whether they were injured as a result of force used by officers.

Potentially provoking behaviors are represented by items 8 and 9 in the PPCS and item *19i* in the SILJ. Item 8 and the first subcategory of item 9 in the PPCS are combined to be comparable with the first three subcategories of item *19i* of the SILJ. As a result, a single item from both data sources comprises argument, cursing, insults, verbal threats, disobedience, or interference. Two subcategories in the SILJ item that consists of resistance to handcuffing or arrest, as well as resistance to searches, were combined to be comparable with the PPCS subcategory that indicated resistance to handcuffing, arrest, or search. Two remaining subcategories in both data sources were directly comparable, (i.e., trying to get away from police, pushing, grabbing, and hitting).

Results

Demographic Characteristics and Likelihood of Force

According to the PPCS data, most people who reported experiencing face-to-face contact with the police in 2002 were white (77%), and slightly more than half were male (Table 2). Arrestees in the PPCS were also mostly white (59%), and more than three quarters of respondents were male. In contrast, the corresponding inmate sample had an equivalent proportion of whites and blacks (about 38% each) and was mostly male (88%). The PPCS sample was also older than the inmate sample, although arrestees in the PPCS were younger (median ages were 37 years in the PPCS, 26 years for arrestees, and 31 years in the SILJ).

Table 2. Demographic Characteristics

Demographics	2002 PPCS						2002 SILJ					
	Persons with police contact		Persons arrested		All persons experiencing police use or threat of force		Arrestees experiencing police use or threat of force		Inmates with police contact		Inmates experiencing police use or threat of force at time of arrest	
	Weighted Number*	Percent	Weighted Number	Percent	Weighted Number	Percent	Weighted Number	Percent	Weighted Number	Percent	Weighted Number	Percent
Total	45,278,884	100.0	1,295,501	100.0	664,458	100.0	248,848	100.0	437,768	100.0	96,962	100
Gender												
Male	23,884,649	52.8	1,012,070	78.1	520,178	78.3	221,126	88.9	386,404	88.3	90,223	93.1
Female	21,394,234	47.2	283,431	21.9	144,281	21.7	27,722	11.1 ^a	51,365	11.7	6,739	6.9
Race/Hispanic origin												
White	34,743,452	76.7	769,944	59.4	373,847	56.3	125,356	50.4	166,345	38.0	29,975	30.9
Black	4,966,388	11.0	307,915	23.8	172,658	26.0	73,856	29.7	169,989	38.8	45,362	46.8
Hispanic	4,191,712	9.3	199,206	15.4	102,670	15.5	42,741	17.2	77,715	17.8	16,846	17.4
Other race	1,377,332	3.0	18,435	1.4 ^a	15,284	2.3 ^a	6,896	2.8 ^a	23,605	5.4	4,779	4.9
Age (years)												
16-19	4,314,231	9.5	214,130	16.5	152,118	22.9	66,764	26.8	31,194	7.1	10,310	10.6
20-29	10,917,693	24.1	529,961	40.9	230,028	34.6	106,474	42.8	168,282	38.4	37,634	38.8
30-39	9,745,298	21.5	278,817	21.5	116,774	17.6	35,056	14.1	132,277	30.2	30,285	31.2
40-49	9,494,716	21.0	171,198	13.2	95,285	14.3	25,980	10.4 ^a	84,874	19.4	15,845	16.3
50-59	6,006,828	13.3	77,596	6.0	49,717	7.5	10,371	4.2 ^a	17,988	4.1	2,600	2.7
60 or older	4,800,117	10.6	23,799	1.8 ^a	20,537	3.1 ^a	4,202	1.7 ^a	3,153	0.7	288	0.3 ^a

Notes. PPCS data are adapted from Durose et al. (2005). Race/Hispanic origin could not be determined for 114 (weighted) inmates in the SILJ data. The 16-19 years of age category includes 104 (weighted) inmates who were under age 16.

* Denotes the use of weighted estimates in Tables 2, 3, 4, 5, 6, 7, and 8. Raw numbers are available from the authors on request.

^a Estimate based on 10 or fewer cases.

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Estimates from the 2002 PPCS indicate that about 45.3 million respondents aged 16 or older reported face-to-face contacts with police in that year, and about 1.5% (664,458 persons) reported experiencing the use or threat of force by police (beyond handcuffing). About 1.3 million persons reported being arrested, and 19.2% of the arrestees (248,848 persons) reported experiencing the use or threat of force. In comparison with the PPCS data on all contacts, the inmate sample reported experiencing police use or threat of force in a larger proportion of contacts more similar to the PPCS arrestees. The 2002 SILJ data indicate that 22.1% of inmates (96,962) reported experiencing the use or threat of force by police (beyond handcuffing) at the time of their arrests. This finding would be expected, given that the inmate sample experienced arrest. Combining arrestees in the PPCS with the SILJ data results in an overall estimate that police use force in 20.0% of all arrests.

When comparing the demographic characteristics of individuals who reported experiencing force in both samples, some important differences became apparent. The SILJ force sample contained proportionately more males (93% vs. 78%), more blacks (47% vs. 26%), less whites (31% vs. 56%), and was older (median age in the PPCS force sample was 26 vs. 30 in the SILJ sample). The PPCS arrestees were more similar to the SILJ sample with regard to gender (89% male), but they were more similar to the larger PPCS force sample with regard to race (30% black). The PPCS arrestees were younger than the larger PPCS force sample and the SILJ force sample (i.e., the median age among PPCS arrestees was 23).

Importantly, although the magnitudes of the estimates differ across data sources (as would be expected), the differences in the likelihood of reporting force across demographic characteristics were substantively similar within both sets of data (Table 3). That is, males, blacks, and youths were more likely to report experiencing the use or threat of force in both types of surveys (i.e., household and inmate).

Table 3. Demographic Characteristics and Likelihood of Experiencing Police Use or Threat of Force

Demographics	2002 PPCS		2002 SILJ
	Percent of contacts in which force was used/threatened	Percent of arrestees experiencing use or threat of force	Percent of inmates experiencing use or threat of force at time of arrest
Total	1.5	19.2	22.1
Gender			
Male	2.2	21.8	23.3
Female	0.7	9.8 ^a	13.1
Race/Hispanic origin			
White	1.1	16.3	18.0
Black	3.5	24.0	26.7
Hispanic	2.5	21.5	21.7
Other race	1.1 ^a	37.4	20.2
Age (years)			
16–19	3.5	31.2	33.1
20–29	2.1	20.1	22.4
30–39	1.2	12.6	22.9
40–49	1.0	15.2 ^a	18.7
50–59	0.8	13.4 ^a	14.5
60 or older	0.4 ^a	17.7 ^a	9.1 ^a

^a Estimate based on 10 or fewer cases.

Type of Force Used

As shown in Table 4, the level of force used by police in contacts reported by inmates is arguably greater than that reported in the PPCS for all force contacts and arrestees. Among those inmates who reported the use or threat of force (beyond handcuffing), most contacts (82%) involved pushing or grabbing by officers, which is roughly double the percentage reported in the PPCS for all force contacts and is substantially greater than for arrestees. The next most common type of force reported was officers pointing guns (46%), which was nearly double the percentage reported in the PPCS for all force contacts and arrestees.² Finally, inmates reported that more than one third of force contacts included being kicked or hit by officers (38%), which is greater than four times the percentage reported in the PPCS for all force contacts and double the percentage for arrestees.

2. A reviewer noted that this estimate is alarmingly high, especially if it refers to all arrests. Keep in mind that the SILJ sample consists of those who have been *incarcerated* and those who reported having guns pointed at them during the arrest process. The corresponding percentages for the PPCS are 24% among arrestees and 19% among all force contacts.

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Table 4. Type of Force Used or Threatened

Type of force used or threatened	2002 PPCS				2002 SILJ	
	All force contacts		Arrestees only		Number	Percent
	Number	Percent	Number	Percent		
Total	664,458	100.0	248,848	100.0	96,962	100.0
Pushed or grabbed by officer(s)	277,433	41.8	146,875	59.0	79,884	82.4
Kicked or hit by officer(s)	54,682	8.2	41,458	16.7	36,684	37.8
Officer(s) pointed gun	125,872	18.9	59,082	23.7	44,554	45.9
Other type of force	377,628	56.8	123,935	49.8	28,895	29.8

Notes. PPCS data are adapted from Durose et al. (2005). Percents do not sum to 100 because some respondents reported more than one type or threat of force. "Other" types of force in SILJ include unleashing of dog(s), use of chemical spray, discharge of firearm(s), and any other force, and they may not be directly comparable with PPCS data.

Injuries from Force

Table 5 indicates that jail inmates were more likely to report injury from police force, as compared with the PPCS. About 45% of inmates who reported experiencing police force (beyond handcuffing) reported injury as a result, compared with about 14% of respondents to the PPCS for all force contacts and 24% of arrestees.³ The larger proportion of force contacts that involved injury among inmates is not surprising, given the arguably greater level of force experienced (described above in Table 4).

Table 5. Persons Injured During Force Contact

Source	Number of force contacts	Persons injured during force contact	
		Number	Percent
PPCS (All force)	664,458	92,268	13.9
PPCS (Arrestees)	248,848	58,875	23.7
SILJ	91,418 ^a	40,990	44.8

Notes. PPCS data are adapted from Durose et al. (2005).

^a In total, 5,544 (weighted) inmates with missing data are excluded.

3. A reviewer suggested that the inmates might be embellishing their self-reports. We acknowledge this possibility, but we suggest the estimate is consistent with the greater level of force reported by these individuals. We also note that rates of force reported by arrested suspects in Phoenix in 1994 (20.5%) were comparable with the rates of force reported by police officers (22.5%) in the same study (Garner, Buchanan et al., 1995).

Conduct During Force Incident

Table 6 presents results with respect to the relationship between the individuals' reported conduct and the use of force. More than one third (38%) of jail inmates who stated that they experienced the use or threat of police force (beyond handcuffing) reported behaviors of their own that could have potentially provoked officers to use force, compared with nearly 27% of PPCS respondents who reported experiencing force. Almost one quarter of both inmates and PPCS respondents reported arguing, cursing, insulting, verbally threatening, disobeying, or interfering with officers. Nearly 16% of inmates described trying to get away from the police, compared with approximately 3% of PPCS respondents. Three percent of inmates reported pushing, grabbing, or hitting officers, compared with less than 1% of PPCS respondents. Finally, 11% of inmates reported resisting handcuffing, arrest, or searches, compared with nearly 6% of PPCS respondents.

Those who reported engaging in potentially provoking behaviors were much more likely to report experiencing the use or threat of force in both data sources (Table 7). In the PPCS data, 22% of those who described engaging in any such behavior reported experiencing force, compared with nearly 1% among those who did not. Among PPCS arrestees, 44% of those who reported engaging in potentially provoking behaviors claimed they experienced force, compared with 16% among those who did not. In the SILJ data, 52% of those who reported engaging in potentially provoking behavior recounted experiencing force, compared with approximately 17% of those who did not. Trying to get away from the police (41%) and resisting handcuffing, arrest, or search (68%) resulted in a greater likelihood of reported force, as compared with other potentially provoking behaviors, in the PPCS data. Of the behaviors for which there were comparable categories in the PPCS, pushing, grabbing, or hitting officers (77%) yielded the greatest likelihood of reporting force in the SILJ data. As might be expected, force was used by police in approximately 90% of incidents in which inmates reported using weapons to threaten or assault officers (categorized as "other" in the SILJ data and not directly comparable with "other" in the PPCS; see notes in Table 6).

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Table 6. Conduct of Individual During Force Incident

Conduct during force incident	2002 PPCS				2002 SILJ			
	Persons with police contact		Persons arrested		All persons experiencing police use or threat of force		Arrestees experiencing police use or threat of force	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	45,278,884	100.0	1,295,501	100.0	664,458	100.0	248,848	100.0
None of the behaviors listed	44,486,824	98.3	1,135,605	88.9	487,312	73.3	180,864	74.3
At least one type of behavior	792,060	1.7	141,804	11.1	177,146	26.7	62,409	25.7
Argue, curse, insult, verbally threaten, disobey, or interfere	755,373	1.7	126,509	9.8	166,140	25.0	60,111	24.7
Try to get away from police	49,533	0.1	17,031	1.3 ^a	20,254	3.0 ^a	10,610	4.3 ^a
Push, grab, or hit officer(s)	11,662	—	3,460	0.3 ^a	3,460	0.5 ^a	3,460	1.4 ^a
Resist handcuff, arrest, or search	56,575	0.1	29,696	2.3 ^a	38,651	5.8	23,119	9.3 ^a
Other physical behavior	11,235	—	0	0.0	3,071	0.5 ^a	0	0.0
							588	0.1 ^a
							513	0.5 ^a

Notes. PPCS data are adapted from Durose et al. (2005). Percentage detail below total excludes cases with missing data on conduct during incident. Respondents could report more than one type of behavior in both the PPCS and the SILJ. The “other” category in SILJ consists of weapon used to threaten or assault officer(s) and is not directly comparable with PPCS data.

— Less than 0.05%.

^a Estimate based on 10 or fewer cases.

Table 7. Conduct of Individual During Force Incident and Likelihood of Experiencing Police Use or Threat of Force

Conduct of individual during force incident	2002 PPCS	2002 SILJ
	Percent of contacts in which force was used/threatened	Percent of arrestees experiencing use or threat of force
Total	1.5	19.2
None of the behaviors listed	1.1	15.9
At least one type of behavior	22.4	44.0
Argue, curse, insult, verbally threaten, disobey, or interfere	22.0	47.5
Try to get away from police	40.9 ^a	62.3 ^a
Push, grab, or hit officer(s)	29.7 ^a	100.0 ^a
Resist handcuff, arrest, or search	68.3	77.9 ^a
Other physical behavior	27.3 ^a	0.0

^a Estimate based on 10 or fewer cases.

National Estimates of Police Use of Nonlethal Force

We next combined the two data sources to arrive at a national estimate of police use of nonlethal force.⁴ We present two methods: The first method is a simple estimate based on summing the estimates from the PPCS and the SILJ, and the second estimate is based on weighting adjustments to a combined data file.⁵ Using the combined data file, we will also proceed with multivariate analyses of predictors of the use or threat of force by police, as well as the level of force used. The goal is to determine whether the predictors of force are similar across the PPCS, SILJ, and combined data.

4. Because data from the PPCS and the SILJ are, of course, nonlethal use-of-force cases, some readers may wish to know about deadly force. According to the FBI's (2003) *Crime in the United States*, 339 justifiable homicides by police occurred in that year.

5. The PPCS data are weighted to represent the U.S. population aged 16 years and older (215,536,780). The SILJ data are weighted to represent the jail population on June 30, 2001 (631,241). We proportionately adjusted the PPCS weights to accommodate the jail population as part of the total estimated U.S. population aged 16 years and older (i.e., the resulting combined data file weights to 215,536,780 persons).

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Combining the PPCS and SILJ data by simply adding them together results in an overall estimate of 45.7 million police contacts during 2002, while nearly 1.7% (761,000) of these contacts involved the use or threat of force by police (Table 8). The adjusted estimate is approximately 45.6 million contacts with almost 1.7% (759,000) involving the use or threat of force. Thus, using the combined PPCS and SILJ surveys, these adjustments do not affect the rate of force substantially.

The estimate of police use of force derived from the PPCS alone is 1.5% of all contacts; the rate derived from combining the PPCS and SILJ is 1.7%. This estimate represents a 13.3% increase and provides the basis for an improved national-level estimate of the amount of force used by the police in the United States. Based on survey results from nationally representative samples of households and jail inmates, we estimate that law enforcement officers used or threatened to use physical force about 760,000 times during 2002.

Our findings support Fyfe's (2002) concern that the PPCS misses substantial amounts of force because it does not include incarcerated individuals in its sampling frame. Although the inmate sample comprises only about 1% of all persons who experienced face-to-face police contacts, these inmates account for about 13% of all contacts that involved police use of force (beyond handcuffing), and they are clearly more likely to report having experienced force. As such, they constitute an important group for additional, in-depth analyses of police-citizen interactions.

Table 8. Estimates of Contacts with Police Resulting in Use or Threat of Force in 2002

	All police contacts		Contacts with force		Percent of contacts with force
Source	Number	Percent	Number	Percent	
Additive estimate					
Total	45,716,652	100	761,420	100	1.7
PPCS	45,278,884	99.0	664,458	87.3	1.5
SILJ	437,768	1.0	96,962	12.7	22.1
Adjusted estimate					
Total	45,584,044	100	759,474	100	1.7
PPCS	45,146,276	99.0	662,512	87.2	1.5
SILJ	437,768	1.0	96,962	12.8	22.1

Multivariate Analyses

In this section, we examine whether the observed bivariate relationships among gender, race, age, potential provocation, and police use or threat of force endure in multivariate models. We consider a dichotomous use or threat of force variable as well as a composite indicator of the severity of force used. The composite indicator of force is coded to indicate the greatest level of force used by police, as reported in the PPCS and the SILJ. Available categories include pushing/grabbing, kicking/hitting, and pointing a gun.⁶ Garner et al. (2002) reported results of an exercise in which they asked 503 officers in five police agencies to rank a variety of police behaviors on a scale from 1 to 100. Corresponding average ranks from that study, as applied to the available categories in the current study, are “push suspect” (26.7), “grab suspect” (33.0), “kick suspect” (40.6), “hit suspect” (40.8), and “display handgun” (55.4). These ranks suggest that the ordering of the available force categories from the PPCS and the SILJ to reflect the severity of force used is appropriate at least in terms of the severity attached to each behavior by police officers. Garner et al. (2002) also weighted arrests in their study by the officer rankings, but we do not incorporate weights in the current study because the data are limited to only three categories of force. The models will be presented with estimates for the PPCS and SILJ separately and the combined file.

Given the differences between a national household survey and a survey of inmates, some might argue the comparisons made herein are potentially unfair. A more direct comparison, perhaps, would be to limit the PPCS data to those who reported they were arrested at some point during the incident. The PPCS does include an arrest item, and Durose et al. (2005) reported that nearly 38% of individuals who claimed experiencing the use or threat of force were arrested, but differences by race were not statistically significant (likely because of the small sample size). To investigate any differences by arrestee status (applicable to the PPCS), we also present models limited to arrestees only.

Results for the first set of models that predict dichotomous use or threat of force are presented in Table 9. As can be observed, the effect of gender is consistent across the three samples: The odds of reporting police use or threat of force for males are nearly three times the odds for females in the PPCS and combined samples, and approximately twice the odds for females in the SILJ sample, while controlling for race, age, and potential provocation. Older respondents are significantly less likely to report having experienced the use or threat of force across all three samples,

6. The “other” force categories in the PPCS and the SILJ are not directly comparable and are excluded from subsequent analyses of the severity of force.

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although the effect of age is weak. Respondent race has consistent effects across the three samples: In contrast to whites, black respondents have the greatest odds of reporting police use or threat of force, followed by Hispanics. Additionally, those persons identified as some "other" race have decreased odds when compared with whites. In the SILJ data, persons of the "other" category have slightly greater odds as compared with whites.

Potentially provoking behaviors were combined in a composite indicator coded to indicate the greatest level of potential provocation by citizens, and it was modeled in contrast to the lack of such behavior. Potentially provoking behaviors had strong effects on the likelihood of reporting the use or threat of force by police. Although all the behaviors increased the likelihood of reporting the use or threat of force, as compared with the absence of any potentially provoking behaviors, some behaviors resulted in substantially greater odds of reporting force. In the combined sample, and apart from "other" behaviors, resistance (i.e., resisting arrest, handcuffing, or searches) had the strongest effect on the likelihood of reporting the use or threat of force by police, which was followed by pushing, grabbing, or hitting officers. Arguing with officers or attempting to get away from officers had similar effects in the overall sample. Among PPCS interviewees only, argumentation had stronger effects than attempting to get away from officers. In the SILJ sample, pushing, grabbing, or hitting officers had the strongest effect, which was followed by resisting, attempting to get away, and arguing with officers.

Table 9. Logistic Regression Results: Police Use or Threat of Force

Variable	Combined sample			PPCS only			SILJ only		
	B	SE	Exp(B)	B	SE	Exp(B)	B	SE	Exp(B)
Male	1.180	.003	3.254	1.120	.003	3.064	.695	.015	2.003
Age	-.030	.000	.971	-.031	.000	.970	-.007	.000	.993
Race (white)									
Black	1.346	.003	3.840	1.258	.003	3.520	.549	.009	1.731
Hispanic	.775	.004	2.171	.720	.004	2.054	.282	.012	1.325
Other	-.187	.008	.829	-.402	.009	.669	.042	.019	1.043*
Provocation (none)									
Argue	2.849	.003	17.277	2.894	.004	18.068	1.430	.012	4.177
Get away	2.847	.011	17.231	1.636	.022	5.137	1.887	.016	6.597
Resist	5.202	.010	181.702	5.763	.013	318.182	1.952	.017	7.042
Push/grab/hit	3.713	.017	4.980	3.324	.021	27.782	3.095	.040	22.097
Other behavior	5.252	.030	191.024	5.309	.030	202.087	—	—	—
Constant	-4.675	.009		-4.873	.010		-2.267	.026	
Nagelkerke R²	.20			.19			.16		

Notes. All variables significant at $p < .001$, unless otherwise noted.

* $p < .05$.

Results for models that predict dichotomous use or threat of force, with PPCS data limited to arrestees only, are presented in Table 10. As might be expected, limiting the PPCS to arrestees results in muted effects for the overall sample that largely mirror those of the SILJ sample. The effects of trying to get away from officers or pushing, grabbing, and hitting officers are not significant in the PPCS sample when limited to arrestees.

Table 10. Logistic Regression Results: Police Use or Threat of Force (Arrestees Only)

Variable	Combined sample			PPCS only		
	B	SE	Exp(B)	B	SE	Exp(B)
Male	.856	.006	2.354	.929	.007	2.531
Age	-.020	.000	.981	-.023	.000	.977
Race (white)						
Black	.603	.005	1.828	.647	.006	1.909
Hispanic	.350	.006	1.419	.365	.007	1.440
Other	.320	.013	1.377	.486	.019	1.626
Provocation (none)						
Argue	1.251	.006	3.492	1.195	.007	3.305
Get away	1.139	.013	3.123	-19.876	501.533	.000 (n.s.)
Resist	2.470	.011	11.828	2.848	.015	17.257
Push/grab/hit	3.738	.038	41.996	22.684	684.289	.000 (n.s.)
Other behavior	—	—	—	—	—	—
Constant	-1.722	.015		-1.503	.020	
Nagelkerke R²	.14			.15		

Notes. All variables significant at $p < .001$, unless otherwise noted. Large standard errors in the PPCS only model are caused by the small number of cases available when PPCS data are limited to arrestees.

n.s. = not significant.

* $p < .05$.

Turning to the severity of force, the effects of gender, age, and race are consistent across the PPCS and SILJ samples. The effect of suspect resistance (i.e., resisting arrest, handcuffing, or searches) is moderate in the PPCS sample, net of demographic variables: When the suspect resists, an estimated 1.7 unit increase in the severity of police force may be expected (Table 11).⁷ The corresponding effect in the SILJ sample is much weaker. In the SILJ sample, attempts to get away from police result in a nearly 1 unit increase in the severity of police force. The results also indicate that

7. In an effort to examine the sensitivity of the regression estimates, we also estimated a series of ordinary least squares (OLS) regression models where we logged the outcome variable in an effort to improve normalization of the distribution, as well as a series of ordered logistic regression models. In both cases, and with few minor exceptions, the results were substantively similar to those presented in the text. Results are available upon request.

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pushing, grabbing, and hitting officers predicts less severe levels of police force in the PPCS sample (although recall that the logistic model shows an increased probability of any force when the suspect pushed, grabbed, or hit officers).

Table 11. Linear Regression Results: Severity of Force Used by Police

Variable	Combined sample			PPCS only			SILJ only		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
Male	.018	.000	.042	.012	.000	.034	.259	.004	.085
Age	.000	.000	-.036	.000	.000	-.036	-.001	.000	-.026
Black	.035	.000	.053	.022	.000	.038	.170	.003	.085
Argue	.148	.000	.090	.117	.000	.079	.409	.005	.129
Get away	.559	.001	.107	.148	.001	.027	.907	.006	.215
Push/grab/hit	-.954	.002	-.085	-1.585	.002	-.143	.456	.017	.043
Resist	1.230	.001	.209	1.735	.001	.285	.295	.008	.059
Other behavior	.137	.002	.011	.324	.002	.029	.685	.040	.026
Constant	.019	.000		.018	.000		.091	.005	
R²	.09			.08			.12		

Notes. All variables significant at $p < .001$.

When the PPCS sample is limited to arrestees only, no substantial changes are observed other than a weakening of the negative relationship between pushing, grabbing, and hitting officers and the severity of police force (Table 12). Suspect resistance remains the strongest predictor of the level of police force in the PPCS sample.

Table 12. Linear Regression Results: Severity of Force Used by Police (Arrestees Only)

Variable	Combined sample			PPCS only		
	B	SE	Beta	B	SE	Beta
Male	.151	.001	.075	.107	.001	.062
Age	-.001	.000	-.020	-.002	.000	-.026
Black	.123	.001	.068	.078	.001	.045
Argue	.358	.002	.134	.289	.002	.119
Get away	.722	.004	.142	.197	.006	.032
Push/grab/hit	-.148	.010	-.012	-.601	.013	-.045
Resist	1.097	.004	.212	1.893	.006	.360
Other behavior	1.010	.032	.024	—	—	—
Constant	.111	.002		.143	.002	
R²	.15			.19		

Notes. All variables significant at $p < .001$.

Discussion

Research on the police has generated an immense amount of information and accumulated knowledge on a wide range of topics (Sherman, 1995; Skogan and Frydl, 2004; Weisburd and Braga, 2006). One critical area in the body of work describing police behavior is national-level estimates of the use of force. This article presents combined estimates from two data sources, the SILJ and the PPCS, in an effort to enhance and refine national-level data. In so doing, the article took as a point of departure the view of critics of the PPCS—who are likely correct—in suggesting that force is underestimated because of the exclusion of the recently incarcerated. Clearly, the recently incarcerated are a group at high risk for police use of force (if for no other reason than the fact that they were arrested) and should be included in national estimates of police use of force.

Several key findings developed from the analysis. First, the analysis demonstrated that the PPCS accounts for about 87% of the total force events derived from both the PPCS and the SILJ data. The inmate sample comprised just 1% of all contacts but 13% of contacts with reported force. Second, demographic patterns with regard to the likelihood of force are similar across the two data sets. Although whites are the most common recipients of force in the PPCS (56%) and blacks are most common in the SILJ (47%), when compared against the total police contact population and inmate population, respectively, blacks are the most likely to report experiencing force in either data source, as are males and youths. This finding suggests that, regardless of whether these demographic characteristics are associated with a greater likelihood of behaviors that come to the attention of the police, the data are at least consistent in suggesting the greater application of force to these demographic groups.

Third, in addition to being much more likely to report having experienced force, the recently incarcerated reported experiencing much greater levels of force and were more likely to report injury from force. These findings are not unexpected, given that arrest took place and some underlying behavior that led to their arrest occurred in the first place. Logically, a greater rate of injury would be expected to follow from the generally greater levels of force reportedly experienced. Finally, the role of citizens' potentially provoking behavior in police use-of-force incidents is clear in both the PPCS and the SILJ data. Regardless of the fact that the inmates were arrested, those who reported engaging in potentially provoking behaviors were much more likely to report being the recipients of police force.

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In terms of the severity of police force, a similar pattern has developed. Although gender, age, and race are predictive of the severity of police force in expected directions (i.e., males, youths, and blacks are the recipients of more severe levels of force), these demographic variables are fairly weak in comparison with reported suspect behavior. Specifically, suspect resistance had the strongest effect on the severity of police force in the PPCS sample, with a corresponding weaker effect in the SILJ sample. Attempts to get away from police had the strongest effect on severity of force in the SILJ sample.

More generally, it is unlikely that researchers will learn much more about police use of force from the PPCS in its current form. Given the cost of administration, it is increasingly difficult to justify a study that (with regard to the use of force) does little more than periodically document the fact that police use of force is rare. Although some researchers might argue that the study is congressionally mandated (insofar as Section 210402 of the 1994 Crime Act can be interpreted as a mandate for BJS to conduct the PPCS), the reality is that the PPCS is not; Section 210402 only requires the U.S. Attorney General to acquire data about the use of excessive force by police. The specific means for acquiring these data are not identified, which only raises questions about whether the PPCS has succeeded in measuring "excessive force." The PPCS relies on a perceptual measure of excessive force, and some researchers may argue that such a measure is inadequate. Currently, the SILJ does not include any measure of excessive force (perceptual or otherwise).

The PPCS is more often used in regard to traffic stops (e.g., Engel and Calnon, 2004), and most of the attention given to the PPCS from the news media is in the context of race and traffic stops (although some of this may be due to media intrigue over the curious interference of Department of Justice political officials with the release of the 2002 findings, and the subsequent removal of the BJS Director for refusing to accept changes to the press release; see Lichtblau, 2005; Government Accountability Office, 2007). Regardless, without a substantial increase in sample size (which translates to a direct increase in cost), researchers cannot delve into greater detail on police use-of-force issues.

If the goal is to capture rich data on the use of excessive force, then increased investment in the SILJ may be a better use of research funds and researchers' attention at this point. The recently incarcerated should account for a relatively large proportion of all police contacts; in its current form, the SILJ asks inmates about police use of force at the time of arrest, and not for any prior contacts that did not lead to arrest. As such, the SILJ data are almost certainly an underestimate and should be

regarded as conservative. (The same criticism applies to the PPCS, however, because it asks citizens about force experienced during their most recent contact and not all previous contacts.) Expansion of force-related items in the SILJ, such as including consideration of the total number of police contacts and force in the prior 12 months, also would need to be accompanied with an overall reduction in the number of interview items. However, in contrast to the PPCS, much is yet to be learned from the SILJ data on police use of force. Although beyond the scope of this article, it is possible to investigate the roles of offense seriousness, drug and alcohol use, and mental health on police use of force, with the SILJ data.⁸

An additional improvement would be to devote resources to the collection of administrative records from police departments. The BJS took an initial step in this direction with the 2003 iteration of the Law Enforcement Management and Administrative Statistics (LEMAS) Survey, in which data were collected on citizen complaints about police use of force (Hickman, 2006). Although the LEMAS Survey may not be the appropriate platform for expanded data collection on officer use of force, a stand-alone data collection would be warranted. It is only through these types of investments that we can fulfill the goal of developing national statistics to improve documentation of police behavior and fairness in policing.

The use of the PPCS and the SILJ to produce a national-level estimate of police use of nonlethal force furthers the goal of national-level data on all uses of force in the United States. Although we recommend continuing the statistical surveys on which these estimates are based, our understanding of the amount and correlates of police use of force would be improved if sufficient resources and commitment existed to compile representative samples of agency records of lethal and nonlethal force.

8. Out of concern for model misspecification, a reviewer suggested that we should investigate these possibilities. We reestimated the logistic and OLS models for the SILJ data and included controls for whether the controlling offense was violent in nature, whether the individual was using alcohol or drugs at the time of the offense, and whether the individual had ever been informed by a mental health professional that he or she had any of several listed mental health disorders. Of course, the offense measures do not necessarily translate to the arrest scenario. Nevertheless, the additional controls were significant, but weak, and they did not substantively alter the results of our original models or the conclusions drawn. Results of these analyses are available from the authors on request. Unfortunately, we cannot perform the same analyses with the PPCS data because information on mental health status and drug and alcohol use are not collected in the PPCS. Because the SILJ data suggest these avenues of investigation might possibly be fruitful, perhaps these variables could be included in a future iteration of the PPCS.

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In the United States, progress has been made toward national reporting systems for police use of lethal force. In 2007, as part of its Deaths in Custody Reporting Program, the BJS released counts of all arrest-related deaths reported by authorities in 40 states, over the 2003–2005 period (Mumola, 2007). Of the 2,002 arrest-related deaths reported, 55% (1,095) deaths were homicides by law enforcement officers. In addition, Karch, Lubell, Friday, Patel, and Williams (2008) report findings for 16 states participating in the Centers for Disease Control and Prevention's National Violent Death Reporting System in 2005. This system includes deaths from "legal interventions." With the lack of nationwide coverage and variation in reporting sources and definitions, these two new systems and the FBI's Supplemental Homicide Reports program do not yet constitute fully developed national reporting systems for police use of lethal force, but they do have promise and reflect progress toward that goal.

Despite this progress, other nations have developed more complete national reporting systems for police use of force. For example, New Zealand police currently collect data on all uses of force (Marshall and Shuey, 2001). Since 1997, the British Home Office has published statistics on deaths in custody of the police in England and Wales. In 2002, The British Police Reform Act created the Independent Police Complaints Commission (IPCC) with a statutory duty to investigate any death from police contact, and they have continued the reporting of police use of lethal force (see IPCC, 2008). The establishment of these national police use-of-force reporting systems in other countries should provide models for future U.S. efforts, as well as the beginning of cross-national comparisons of police use of force.

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Appendix A. Measuring Police Use of Force over the Past Quarter Century

Author(s)	Sample	Operational definition of police use of force	Force categories	Base rate
Friedrich (1980)	1,091 police-public encounters in high crime precincts in Chicago, Boston, and Washington, DC, in the Summer of 1966	No details provided except that excessive force was determined by judgment of observers.	No force Excessive force	94.9% 5.1%
Croft (1985)	2,397 use-of-force reports out of 123,491 arrests in Rochester from 1973 to 1979	"Any compulsion by a police officer, through use of physical power, chemical mace, or weapon."	No force Force	98.1% 1.9%
Smith (1986)	762 non-dangerous suspect encounters in 60 neighborhoods in Rochester, St. Louis, and Tampa/St. Petersburg, Summer of 1977	Police use force or threaten a suspect with arrest, surveillance, or physical harm.	No coercion Coercion	70.0% 30.0%
Lundstrom and Mul-lan (1987)	11,989 custody incidents in St. Paul from March 1985 through February 1986	Any police weapon used in an arrest, including "fist or hand."	No force Force	85.4% 14.6%
Fyfe (1988b)	2,142 potentially violent encounters in three districts in Dade County from 1985 to 1986	Categories in codebook include firm voice command, firm grip, pain compliance, baton, punching or hitting, neck hold, drawing or displaying weapon, firing weapon.	No force Firm grip or more	88.0% 12.0%
Bayley and Garofalo (1989)	467 potentially violent mobilizations in New York City in the Summer of 1986	The force used by police consisted almost exclusively of grabbing and restraining.	No force Physical force	92.1% 7.9%
Kavanagh (1994)	1,512 arrests in New York Bus Terminal for 1 year beginning July 1990	Officers use force when one of the arrest charges involves the suspect "resisting arrest."	Other charges Resisting arrest	82.8% 17.2%
Garner, Buchanan et al. (1995) [Police Surveys]	1,585 adult custody arrests in Phoenix during 2 weeks in June 1994	Physical force involves use of severe restraints, any weaponless tactic, or any weapon.	No force Physical force	78.0% 22.0%

Garner, Buchanan et al. (1995) [Suspect Interviews]	185 adult suspects arrested in Phoenix during 2 weeks in June 1994	Physical force involves use of severe restraints, any weaponless tactic, or any weapon.	No force Physical force	79.5% 20.5%
Klinger (1995)	241 non-traffic disputes in three districts of Dade County in 1985 and 1986	Examples included are firm grip, pain hold, choke hold, baton, hit, or kick. Reasonable force encompasses "instances where the officer is attempting to make a citizen come with him, or is attempting to separate citizens who are fighting or similar acts." Excessive force encompasses "instances where the officer is kicking ass."	No force Voice command Physical force	59.8% 23.2% 17.0%
Worden (1995)	1,528 suspect encounters in 60 neighborhoods in Rochester, St. Louis, and Tampa/St. Petersburg, Summer of 1977	Forceful interventions involve a search, physical force, or brandishing a weapon.	No force Reasonable force Improper force	96.1% 2.4% 1.5%
Mastrofski et al. (1996)	346 requests for compliance in 1,627 police citizen encounters in Richmond, VA, in 1992	Respondents ask whether "police used force toward them" or whether "any restraint had been used by police." Force includes general struggle, open hand, twist arm or wrist, closed fist, kicked, elbowed, kneed, and use of implement, baton, or dog. Tight handcuffs counted as use of force.	No force Force	94.8% 5.2%
Edwards (2000)	1,005 defendants in six magistrate courts during 1999 in Queensland, Australia	Force measured as dichotomous variable and includes instances in which (1) an officer hit or swung at suspect with a weapon that was not a gun, (2) used force to make the suspect come along, or (3) physical force that involved more than handcuffing.	No force Force	80.0% 20.0%
Engel et al. (2000)	1,506 non-traffic suspects in Rochester, St. Louis, and St. Petersburg in 1977		No force Force	96.6% 3.4%

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Engel (2000)	1,509 non-traffic suspects in high crime precincts in St. Petersburg (Summer 1997) and Indianapolis (Summer 1996)	Force measure includes firm grip or nonpain restraint, pain compliance (hammerlock, wristlock, finger grip, carotid control, bar arm lock), impact or incapacitation methods (striking with body or weapon, mace, taser), or drawing or discharging a firearm.	No force Force	91.0% 9.0%
Frank et al. (2001)	1,431 police-citizen encounters in Cincinnati between April 1, 1997 and April 30, 1998	Use of firm grip, handcuffing, pain compliance techniques, or weapon display or discharge.	No force Force	90.5% 9.5%
IACP (2001)	24,271 use-of-force incidents from 238 jurisdictions, 1995–2000	Defines force as “that amount of effort required by police to compel compliance from an unwilling subject.”	No force Force	99.9% .1%
Langan et al. (2001)	16,259 suspect contacts in 1999 National Crime Victimization Survey	Respondents asked if the police “used or threatened to use physical force against them.” Codes include “pointed a gun.”	No force Force	99.2% .8%
Seattle Police Department (2001)	29,000 arrests by Seattle Police Department during 2000	Completion of a use-of-force form; examples range from use of hands to discharging a firearm.	No force Force	97.9% 2.1%
Garner et al. (2002)	7,512 adult custody arrests in six large jurisdictions during 1997 and 1998	Physical force involves use of severe restraints, any weaponless tactic, or any weapon.	No force Force	82.9% 17.1%
Hickey and Garner (2002)	30,209 adult custody arrests in Montgomery County, MD, from 1993 to 1999	Use of weaponless tactics or any weapon, which includes a vehicle, included on departmental use-of-force form.	No force Force	93.6% 6.4%

Terrill and Mastrofski (2002)	3,116 suspect/disputant encounters in high crime precincts in St. Petersburg (Summer 1997) and Indianapolis (Summer 1996)	Force measured along a "continuum" that ranged from least to most harm to suspect. Ten categories ranked in the following manner: none, commands, threats, pat downs, handcuffing, firm grip, pain compliance techniques, takedown maneuvers, strikes with the body, and strikes with external mechanisms.	No force Verbal force Restraint Impact	41.6% 37.4% 18.9% 2.1%
Terrill (2003a)	3,544 police suspect encounters in high-crime precincts in St. Petersburg (Summer 1997) and Indianapolis (Summer 1996)	Physical force involves a firm grip, handcuffing, pain compliance techniques, takedown maneuvers, strikes with hands, fist and equipment.	No force Physical force	79.0% 21.0%
Terrill (2003b)	54,250 arrests in San Antonio, TX, during 2001 and the first half of 2002	Actions that trigger the filing of a use-of-force form involve force above and beyond open/empty hand control techniques. Handcuffing is excluded.	No force Physical force	98.2% 1.8%
Terrill and Reisig (2003)	3,333 police suspect encounters within 80 neighborhoods in St. Petersburg (Summer 1997) and Indianapolis (Summer 1996)	Acts that threaten or inflict physical harm on suspects, which include command, threats, pat downs, handcuffing, firm grips, pain compliance techniques, strikes with the body, and strikes with external mechanisms.	No force Verbal force Restraints Impact	42.0% 37.0% 19.0% 2.0%
Williams and Hester (2003)	13,307 arrests in Polk County, FL Sheriff's Office during 1999 226,911 police-citizen encounters in Polk County, FL Sheriff's Office during 1999	Existence of a protective action report. Examples of force included use of the hand, chemical agents, canines, leg restraints, and impact weapons.	No force Force No force Force	99.1% .9% 99.9% .1%
Alpert et al. (2004)	103 police stops observed in Savannah, GA, between April 1, 2002 and November 30, 2002	Force is defined as the use of any physical coercion and includes such tactics as "come along holds" and the use of pressure points but not the use of handcuffs.	No force Force	95.2% 4.9%

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Kaminski et al. (2004)	2,049 non-traffic arrests in a large southeastern municipal police department from August 2000 through February 2001	Force defined as greater than a firm grip includes open-hand techniques, punching, pepper spray, use of batons, neck restraints, canines, and pointing a firearm.	No force Force	88.5% 11.5%
Schuck (2004)	1,357 adult arrests in Phoenix, AZ, during 2 weeks in June 1994	Physical force was defined as any arrest in which the officer used a severe restraint, a weaponless tactic, threatened the use of a weapon, or used a weapon.	No force Physical force	75.6% 24.4%
Durose et al. (2005)	45.3 million police public contacts in 2002 National Crime Victimization Survey	Respondents ask whether the police "used or threatened to use physical force against them."	No force Force	98.5% 1.5%
Leinfelt (2005)	3,673 police-citizen encounters that generated a use-of-force form in a midwestern jurisdiction during October 2001 to December 2003	Handcuffing counted as no force. Force defined as the presence of any other force.	No force Force	77.6% 22.4%
Schuck and Rabe-Hemp (2005)	4,000 adult custody arrests in Charlotte, Colorado Springs, Dallas, and St. Petersburg during 1997 and 1998	The use of physical force for the police included police behaviors such as the use of a severe restraint (e.g., prone cuff, hobble, or body cuff), the use of any weaponless tactic (e.g., grab citizen, pressure hold, or control hold), or the use of a weapon (e.g., flashlight, baton or handgun). The definition of use of physical force does not include threats of physical force or displays of a weapon.	No force Force	81.1% 18.9%
Phillips et al. (2006)	300 arrests by U.S. Immigration Service and deported to El Salvador, 1999 through 2002	Force measured as hit, punch, slap, kick, shove, thrown to ground, or hit with pepper spray or stun gun.	No force Force	80.0% 20.0%
Durose et al. (2007)	43.5 million police public contacts in 2005 National Crime Victimization Survey	Respondents ask if the police "used or threatened to use physical force against them."	No force Force	98.4% 1.6%

Paoline and Terrill (2007)	3,356 police suspect encounters in high crime precincts in St. Petersburg (Summer 1997) and Indianapolis (Summer 1996)	Force is defined as "acts that threaten or inflict physical harm on citizens." Verbal force involved orders or a command followed by a statement of consequences for not complying. Physical force includes any physical restraint, pat downs searches, firm grips, handcuffing, pain compliance techniques, takedown maneuvers, or impact methods.	No force	42.0%
			Verbal force	37.1%
Terrill et al. (2008)	3,264 citizen suspect encounters resulting in an arrest and a use-of-force form in a midwestern jurisdiction, 2002 through 2004	Handcuffing counted as no force. Examples of force include muscling, arm bar, taser, and weapon use.	Physical force	20.8%
			No force	82.0%
			Force	18.0%

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Appendix B. Force Items in the 2002 PPCS and 2002 SILJ**2002 PPCS**

3a. Did you have any contact with a police officer during the last 12 months, that is, any time since [DATE] Y/N (N ends interview)

3b. Were any of these contacts with a police officer in person, that is, face-to-face? Y/N (N ends interview)

3c. Did you have more than one face-to-face contact? Y/N (N skips 3d)

3d. How many face-to-face contacts with a police officer did you have during the last 12 months?

For the rest of the interview, please tell me ONLY about the most recent face-to-face contact you had with the police.

4. Was this contact initiated by the police? Y/N/DK

5a. During this contact, did the police USE or THREATEN TO USE force against you for any reason? Y/N/DK (N and DK skip to 6)

5b. Did the police officer(s) . . . Actually push or grab you? Actually kick or hit you? Actually point a gun at you? Use or threaten to use any other force against you? (specify)

5c. Do you feel any of the force used or threatened against you was excessive? Y/N (N skips to 5e)

5d. What force was excessive? (describe)

5e. Were you injured as a result of any force used against you? Y/N

6. During this contact were you arrested? Y/N/DK

7. During this contact were you handcuffed? Y/N/DK

8. At any time during this contact, did you argue with, curse at, insult, or verbally threaten the police? Y/N/DK

9. At any time during this contact, did you . . . Disobey or interfere with the officer(s)? Try to get away? Push, grab, or hit the officer(s)? Resist being handcuffed, arrested, or searched? Physically do anything else? (specify) None of the above

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19a. The next few questions are about contact you may have had with police at the time of your arrest on [DATE] for [OFFENSE]. At the time of your arrest, how many police officers were present?

19b. At the time of your arrest on [DATE], did the police officer(s) search you, frisk you, or pat you down? (Y/N)

19c. Did the police officer(s) find any of the following items on or near you? Illegal weapons; Illegal drugs; Open containers of alcohol, such as beer or liquor; Stolen property; Other evidence of a crime (specify); None

19d. When you were arrested, were you handcuffed? Y/N

19e. If 19d=Y, Display “Aside from being handcuffed,” Did the police officer(s) for any reason use or threaten to use physical force against you, such as grabbing you or threatening to hit you? Y/N (N skips to 19i)

19f. At the time of your arrest did the police officer(s) . . . Push or grab you; kick you or hit you with their hand or something held in their hand; unleash a police dog that bit you; spray you with a chemical or pepper spray; point a gun at you but not shoot; fire a gun at you; Use some other form of physical force (specify) Y/N (If all “No” skip to 19i)

19g. Were you injured as a result of (insert responses to 19f)? Y/N (N skips to 19i)

19h. Did your injuries include . . . Gunshot wound? Broken bones or teeth knocked out? Internal injuries? Bruises, black eyes, cuts, scratches, sprains, or swelling? Any other injuries (specify) Y/N

19i. At any time during the arrest, did you . . . Argue with or disobey the police officer(s)? Curse at, insult, or call the police officer(s) a name? Say something threatening to the police officer(s)? Resist being handcuffed or arrested? Resist being searched or having the vehicle searched? Try to escape by hiding, running away, or engaging in a high-speed chase? Grab, hit, or fight with the police officer(s)? Use a weapon to threaten the police officer(s)? Use a weapon to assault the police officer(s)? Y/N

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