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Trends in Killings of and by Police: A Preliminary Analysis*

Franklin E. Zimring** & Brittany Arsiniega***

This comment reports a preliminary examination of variations over time in reported killings of and by the police. Most of the data we examine was collected from police departments by the Uniform Crime Reporting Program as part of a statistical compilation of lethal violence that has reported yearly since 1976. The data on killings of police officers includes all deaths of police reported by agencies as a result of attacks by other persons, and is a high priority for the Uniform Crime Report [UCR] system. Data related to police officer deaths is carefully compiled separately from data relating to other homicides in a yearly Law Enforcement Officers Killed and Assaulted [LEOKA] subset of the UCR. The data on killings by police officers is incomplete in theory because the deaths reported must be classified as “justifiable” by the reporting agency and the UCR, but the vast majority of killings by police officers are included in this classification.

The data set we use in this analysis of killings by police is problematic in three further respects that significantly hamper its utility. The first problem is that the supplemental homicide reports are always incomplete and also vary over time in the number of agencies that report killings by police. The second problem is that very little information about the circumstances that led to the killings by police is reported to the FBI. The third problem is that there is no auditing process to assure the accuracy of what individual agencies choose to report. Even though the data from this program may be the best information currently available in comparison to the alternatives, it must be upgraded to permit effective policy analysis.¹

This report is divided into four short sections. Part I compares the trends over time in killings of police with time trends in the number of persons killed by police in the almost four decades that both rates have been reported in the United States. A second section discusses the instruments and circumstances that are associated with killings of and by police. A third section examines the changes over time in the ratio of killings of and by police since the mid-1970s. One byproduct of the

* We thank Lawrence Sherman, Jeffrey Fagan, Josh Dressler, Jonathan Simon, David Johnson, and the Stanford and Berkeley faculty participants in the Kaplan-Kadish seminar for comments on an earlier draft.

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¹ David A. Klingler, *On the Problems and Promise of Research on Lethal Police Violence: A Research Note*, 16 HOMICIDE STUD. 78, 81, 84 (2012).

improvements in protecting police against violence is that while the ratio of citizens killed by police to police deaths was 3.4 to 1 in the 1970s, it has averaged 7.8 to 1 in the most recent reports.

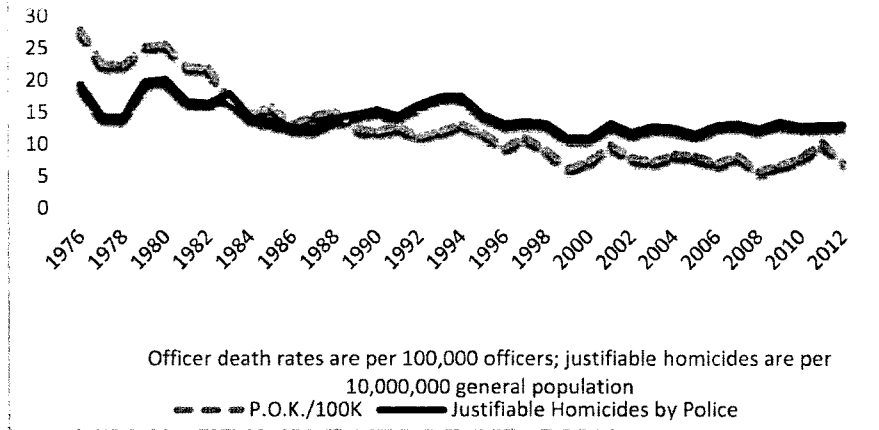
The final section of our note discusses two asymmetrical patterns in the data we analyzed. We have good information on killings of police. There is not a similar emphasis on the careful collection and analysis of killings by police. There is a clear need for careful documentation and analysis of the 400 to 500 civilians killed each year in encounters with police. The current lack of complete and reliable data on killings by police is a scandal. And there are, in the data we examine, reasons to suggest that police use of deadly force is not a necessity of police safety when citizens brandish knives, blunt instruments, or use personal force.

I. TRENDS OVER TIME

Figure 1 reports the data reported by the UCR on killings of and justifiable killings by police by year from 1976 to 2012. The figure uses annual data on police employees to estimate a death rate per 100,000 officers for each year and census data on total population to estimate a death rate per 10 million citizens for justifiable killings by police.

Figure 1

Police Officers Killed and Justifiable Homicides



Killings of and Justifiable Homicides by Police, 1976–2012²

² 1980–2012 population data taken from December 31 population estimates by the United States Census Bureau. *U.S. & World Population Clock*, U.S. CENSUS BUREAU, <http://www.census.gov/popclock/>. 1976–1979 data taken from the Population Estimates Program of the Population Division of the U.S. Census Bureau, July 1 estimates. See *Historical National Population Estimates: July 1, 1900 to July 1, 1999*, U.S. CENSUS BUREAU (Jul. 28, 2000), <http://www.census.gov/popest/data/national/totals/pre-1980/tables/popclockest.txt>. The total number of active police officers is taken from the University of Michigan's National Archive of Criminal Justice Data [hereinafter NACJD]. See FED. BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, UNIFORM CRIME REPORTING PROGRAM DATA: POLICE EMPLOYEE (LEOKA) DATA (1976–2012), <http://www.icpsr.umich.edu/icpsrweb/NACJD/studies/9028>. For the number of law enforcement officers killed from 1976–1998, see JODI M. BROWN AND PATRICK A. LANGAN, BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, POLICING AND HOMICIDE, 1976-98: JUSTIFIABLE HOMICIDE BY POLICE, POLICE OFFICERS MURDERED BY FELONS 22 (2001), <http://www.bjs.gov/content/pub/pdf/ph98.pdf>. For the number of officers killed from 1999–2002, see FED. BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, UNIFORM CRIME REPORTS [hereinafter UCR]: LAW ENFORCEMENT OFFICERS KILLED AND ASSAULTED, 2002 9 (2002), <http://www.fbi.gov/about-us/cjis/ucr/leoka/2002>. The number of officers killed from 2003–2012 is taken from UCR, LAW ENFORCEMENT OFFICERS FELONIOUSLY KILLED & ASSAULTED 2012: TABLE 1: LAW ENFORCEMENT OFFICERS FELONIOUSLY KILLED: REGION, GEOGRAPHIC DIVISION, AND STATE, 2003–2012, http://www.fbi.gov/about-us/cjis/ucr/leoka/2012/tables/table_1_leos_fk_region_geographic_division_and_state_2003-2012.xls. For justifiable homicide data from 1976–2005, see JAMES ALAN FOX & MARIANNE W. ZAWITZ, BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, HOMICIDE TRENDS IN THE UNITED STATES 173 (2007), <http://www.bjs.gov/content/pub/pdf/htius.pdf>. For 2006–2012, see UCR, CRIME IN UNITED STATES 2010: EXPANDED HOMICIDE DATA TABLE 14: JUSTIFIABLE HOMICIDE: BY WEAPON, LAW ENFORCEMENT, 2006–2010, <http://www.fbi.gov/about-us/cjis/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/tables/10shrtbl14.xls> and UCR: CRIME IN THE UNITED STATES 2012: EXPANDED HOMICIDE DATA TABLE 14: JUSTIFIABLE

As Figure 1 shows, the trend over time for both killings of and by police is downward, but not in equal measure. Over the 37 years after 1976, the death rate of police from violent assaults dropped from 27.88 per 100,000 to 7.16 per hundred thousand, a decline of almost 75%. During the same period, the drop in killings by police, when adjusted for population, dropped by less than a third, from 19.26 per 10 million population to 13.01.

The downward trend in both rates of killing is evident throughout the period. The first reported rate for both killings of and by the police is highest at the very beginning of the reports in 1976 and the biggest drop in rates for all single year periods for both police deaths and civilian deaths from police happens between the first and second year of the reporting program. This is strong circumstantial evidence that issues relating to the measurements in the first year may have exaggerated the initial rate drop from year 1976 to 1977. One way to correct for any such distortion is to measure the trends in killing using the second year of reported deaths as the base—1977. This produces a modest decline in the long run trend in killings of police—a 68% drop after 1977 instead of 74% with the additional year. But the single year change in base from 1976 to 1977 has a much larger impact on the decline of killings by the police—the 32% decline in rate from 1976 levels becomes a 9% decline over 35 years when 1977 is the base year, and the very sharp drop in police deaths since 1977 (at 68%) is nearly eight times the decline of civilian deaths (9% after 1977).

The magnitude of the drop in killings of police (either 74% or 68%) is well beyond declines over time in homicide risk for the general population, but is nonetheless plausible. An on-the-job homicide risk of 28 per 100,000 in 1976 was far in excess of civilian homicide rates in 1976 and twice the death rate for males from homicide that year (14.5 per 100,000).³ By 2012, the on-the-job homicide risk of a police officer, at 7.16 per 100,000, was 15% less than the annual homicide

HOMICIDE: BY WEAPON, LAW ENFORCEMENT, 2008–2012, http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2012/crime-in-the-u.s.-2012/offenses-known-to-law-enforcement/expanded-homicide/expanded_homicide_data_table_14_justifiable_homicide_by_weapon_law_enforcement_2008-2012.xls. The NACJD also publishes yearly supplementary homicide reports containing justifiable homicides. See, e.g., FED. BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, UNIFORM CRIME REPORTING PROGRAM DATA: SUPPLEMENTARY HOMICIDE REPORTS, 2012 (2014), <http://www.icpsr.umich.edu/icpsrweb/NACJD/studies/35023>. The NACJD's numbers differ from those published directly by the FBI on the Bureau's website. The NACJD justifiable homicide counts for 2008–2012 are 374, 411, 392, 399, and 426, while the FBI reports 378, 414, 397, 404, and 410 justifiable homicides for the same years. It is also important to note that the state of New York's justifiable homicides are not included in the UCR. This is additional evidence that data reporting the justifiable killing of civilians is less precise than that reporting killings of police officers.

³ See FOX & ZAWITZ, *supra* note 2, at 9, 49 (reporting that in 1976 the homicide rate for the general population was 8.8 per 100,000 population, while the homicide victimization for males was 13.6 per 100,000). The Center for Disease Control's numbers differ slightly for 1976, at 9.1 per 100,000 for the general public and 14.5 per 100,000 for males. See U.S. DEP'T OF HEALTH & HUMAN SERVICES, VITAL STATISTICS OF THE UNITED STATES 1976, 36 (1980), http://www.cdc.gov/nchs/data/vsus/mort76_2a.pdf.

death rate for males in 2010's vital statistics (8.4 per 100,000).⁴ (The two rates are not strictly comparable because the general rate for men includes non-working events.) The sharp reduction in police death risk came during the era when Kevlar vests became a common precaution for urban police.⁵ While the number of police officers has increased in the last generation, the number of violent killings of police has dropped by more than half. Urban policing is a substantially less dangerous job in 2015 than in 1975.

The reduction in the rate of killings by police on the job has been much less dramatic. If 1977 is considered a statistically safer start date for trends over time, the 9% drop in the rate of justifiable killings by police is drastically lower than the magnitude of the general decline in the homicide rate.⁶ There was certainly no equivalent of the Kevlar adaptation to exert any special downward pressure on killings by police after the mid-1970s and there is no short list of circumstances that has been shown to influence the rate of killings by police over time. The list of factors that might influence police use of deadly force against civilians includes the rate of serious assaults against police, and perhaps also variations in the rate of serious violent crime, but we have been unable to find attempts to empirically test the impact of any of these potential motivating phenomena on killings by police. Any trends we try to tie to variations in killings by police are early and preliminary attempts to test undocumented influences on the use of deadly force. This difficulty is compounded by the fact that the published count of killings by police is incomplete, unaudited, and varies between sources; estimates say that these killings are underreported by as much as 20%.⁷

There has been one change in the legal and managerial framework for police use of force that might be expected to reduce the rate of justifiable killings by officers. The use of lethal force to stop a "fleeing felon" was a traditional policy in

⁴ Sherry L. Murphy et al., U.S. DEP'T OF HEALTH AND HUMAN SERVICES, CENTERS FOR DISEASE CONTROL & PREVENTION, *Deaths: Final Data for 2010*, 61 NAT'L VITAL STATISTICS REPORTS NO. 4, 63 (2013), http://www.cdc.gov/nchs/data/nvsr/nvsr61/nvsr61_04.pdf.

⁵ See Kenna Davis Quinet, David J. Bordua & Wright Lassiter III, *Line of Duty Police Deaths: A Paradoxical Trend in Felonious Homicides in the United States*, 6 POLICING & SOC'Y 283 (1997) (noting that declines in police line-of-duty deaths starting in 1971 may be at least partially explained by the "target-hardening" effects of the use of body armor). A 2003 article states that the 1965 invention of Kevlar had, by 2003, saved 2,749 police officers' lives. See Jon Swartz & Edward Iwata, *Invented to Save Gas, Kevlar Now Saves Lives*, USA TODAY (April 15, 2003, 10:17 PM), http://usatoday30.usatoday.com/money/world/iraq/2003-04-15-kevlar_x.htm.

⁶ See FOX & ZAWITZ, *supra* note 2, at 8 and UCR: CRIME IN THE UNITED STATES 2012: MURDER TABLE 1: BY VOLUME AND RATE PER 100,000 INHABITANTS, 1993-2012, http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2012/crime-in-the-u.s.2012/tables/1tabledatadecoverviewpdf/table_1_crime_in_the_united_states_by_volume_and_rate_per_100000_inhabitants_1993-2012.xls The homicide rate per 100,000 inhabitants was 4.7 in 2012 compared to 8.8 in 1977; this represents a 47% decline over those years. "Homicide" includes murder and nonnegligent manslaughter.

⁷ See Rob Barry & Coulter Jones, *Hundreds of Police Killings Are Uncounted in Federal Statistics*, WALL ST. J. (Dec. 3, 2014, 11:26 AM), <http://www.wsj.com/articles/hundreds-of-police-killings-are-uncounted-in-federal-statistics-1417577504>.

many departments that has been more recently curtailed by police managers and reinforced by signals from federal courts, including the Supreme Court in *Tennessee v. Garner*⁸ in 1985. As well, other restrictions have been imposed on the use of deadly force by courts and police administrators to prevent the commission of a crime that doesn't itself put life at risk. So, the circumstances that support police use of deadly force have narrowed somewhat in the direction of requiring a threat to life of the officer or another citizen.

What has happened to the rate of serious assaults against police officers? The large drop in fatal assaults of police is not direct evidence that the rate of attacks has also declined that much because target-hardening strategies like protective vests will reduce the death rate per 100 serious assaults. The volume of attacks against police might have not changed much even if the deaths from such assaults had dropped substantially.

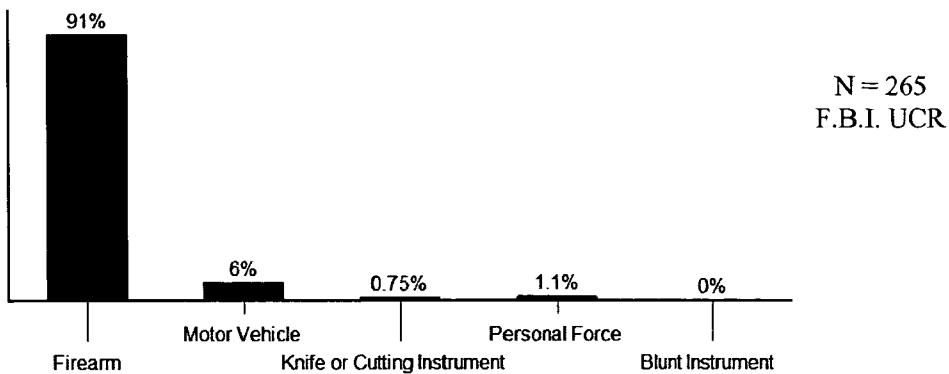
II. COMPARING THE INSTRUMENTS AND CIRCUMSTANCES OF POLICE AND CIVILIAN DEATHS

While current Uniform Crime Reporting collects and reports data on killings of and by the police, the data available on killings of police is much more substantial. Any attempt to draw comparisons between the two classes of cases must therefore contend with significant inequalities in availability of data regarding the killing of civilians. This data gap must be supplemented before meaningful comparisons can be made.

Figure 2 reports the weapons used in killings of police for the five-year period from 2008 through 2012.

⁸ 471 U.S. 1 (1985) (holding that an arrest even one based on probable cause, constitutes an unreasonable seizure of the arrestee if unreasonable force is used to make the arrest).

Figure 2



Weapons Used to Kill Police Officers, 2008–2012 Where Weapon Reported⁹.

More than 90% of all killings of police officers result from an attack with a firearm, and the only other significant fatal instrument in this five-year study was a motor vehicle. Several common weapons used in interpersonal violence have a near-zero presence in killings of police. Personal force and blunt instruments together account for 1.1% of all police fatalities, with three cases of the former and no cases of the latter in a five-year period. Knives and other cutting instruments, a major and dangerous instrument in many violent assaults, account for a total of two police fatalities in five years.

Table 1 compares the profile of causes of death in killings of police with the breakdown of criminal homicides of civilians in 2012, the most recent year included in the police killing survey.

⁹ See UCR: LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2012: TABLE 27: LAW ENFORCEMENT OFFICERS FELONIOUSLY KILLED: TYPE OF WEAPON, 2003–2012 (2012), http://www.fbi.gov/about-us/cjis/ucr/leoka/2012/tables/table_27_leos_fk_type_of_weapon_2003-2012.xls.

Table 1

	All Homicides	Police Victims
Firearm	67.6%	91.3%
Knife	13.1%	0.75%
Blunt Objects	4.2%	0
Personal Force	5.8%	1.1%
Other Instruments and Not Specified ¹⁰	9.2%	6.8%
	100% (N = 12,765)	100% (N = 265)

Weapon Use in Criminal Homicides (2012) and Killings of Police (2008–2012).¹¹

Firearms account for a majority of all homicides but do not dominate the death statistics in general homicide the way that they do in police killings. Unlike killings of police, fatal attacks are spread over a wide variety of weapon types. The starkest contrast concerns knives and other cutting instruments, the second leading murder weapon in general homicide reports with 13.1% of total killings. For police victim killings, knives and cutting instruments play a minor role, responsible for two of 265 killings of police, less than 1% of police fatalities and a proportion of police deaths only 1/16th of the share of total homicides attributed to knives. Blunt objects and personal force cause 10% of civilian killings but 1% of police fatalities.

The comparative statistics in Table 1 show an important contrast and also suggest a cause for the divergent role of knives and blunt instruments in these two types of killings. The prominent role of knife and blunt instrument attacks in most general homicides suggests that cutting instruments and blunt objects are widely used in all sorts of violent attacks. And the even larger proportionate use of knives in aggravated assaults (18.74% in 2012)¹² confirms the widespread use of knives in violent assaults. This and the large volume of non-fatal assaults with knives of

¹⁰ For “All Homicides,” “Other Instruments” includes poison, explosives, fire, narcotics, drowning, strangulation, asphyxiation, and those homicides the FBI has classified as “other weapons or weapons not stated.” For “Police Victims,” “Other Instruments” involves only police officers killed with motor vehicles (16 total for 2008–2012) and bombs (2 total for 2008–2012).

¹¹ Column 1: UCR: CRIME IN THE UNITED STATES 2012: EXPANDED HOMICIDE DATA TABLE 8: MURDER VICTIMS BY WEAPON, 2008–2012 (2012), http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2012/crime-in-the-u.s.-2012/offenses-known-to-law-enforcement/expanded-homicide/expanded_homicide_data_table_8_murder_victims_by_weapon_2008-2012.xls. Column 2: UCR: LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2012: TABLE 27, *supra* note 9.

¹² FBI reports 658,320 aggravated assaults in 2012, 123,344 of which were committed using knives or other cutting instruments. See UCR: CRIME IN THE UNITED STATES 2012: TABLE 15: CRIME TRENDS: ADDITIONAL INFORMATION ABOUT SELECTED OFFENSES BY POPULATION GROUP, 2011–2012 (2012), http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2012/crime-in-the-u.s.-2012/tables/15tabledatadecpdf/table_15_additional_information_selected_offenses_2011_2012.xls.

police officers¹³ strongly suggests that the tiny death toll from knife attacks that is observed for police is not merely a result of the lack of people using these weapons against police but rather an indication that police are very unlikely to die when knives and clubs are used against them. This death rate from knives, blunt instruments and personal force is also wholly a function of limited police vulnerability when attacks happen. The limited data on assaults against police in the FBI system show substantial numbers of assaults with knives and other cutting instruments and hundreds of thousands of attacks with personal force.¹⁴ So the status of police officers as hard targets in conflict with attackers not only influences the rate at which police officers die in combat but also the weapons that we know are sufficiently destructive to put police at risk.

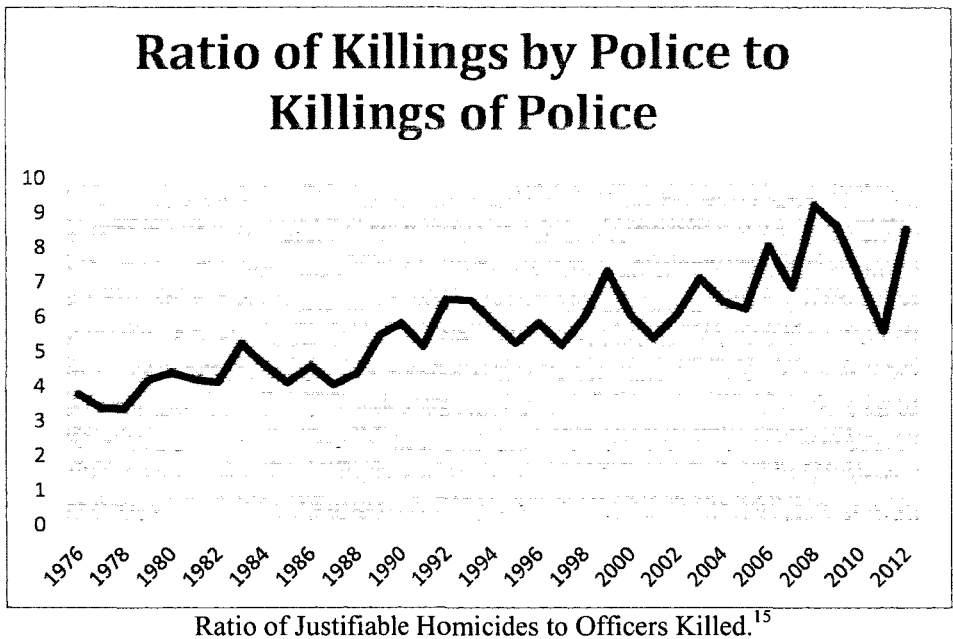
III. KILL RATIOS OVER TIME

One further indication that police officers have always been relatively hard targets is the ratio of killings of police and by police when conflict occurs. While some data is collected on police who are non-fatally injured in conflicts, there is no count available in any national statistics of non-fatal wounds inflicted by police, so the most complete account of the consequences of police/civilian conflict are in the available data on deaths resulting from use of force against police and use of force by police.

The one constant contrast in comparing killings of police with killings by police is that killings by police always outnumber the killings of police by a ratio greater than three to one. There are two reasons for this lopsided ratio: The superior defensive and offensive capacities of police that make them harder to kill; and the wide range of circumstances where police are permitted to use deadly force—not only when the police officer is under attack but also when others are being attacked and to prevent serious violent crimes. Figure 3 shows the extent to which police kill more than they are killed by calculating a “kill ratio” of the number of police-caused fatalities divided by the number of police killed for each of the 37 years that the FBI gathered data prior to 2013.

¹³ Table 70 of the Uniform Crime Reports web report shows 893 knife assaults of police officers in 2012 compared to 2,259 firearms assaults. See UCR: LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2012: TABLE 70: LAW ENFORCEMENT OFFICERS ASSAULTED: TYPE OF WEAPON & PERCENT INJURED, 2003–2012 (2012), http://www.fbi.gov/about-us/cjis/ucr/leoka/2012/tables/table_70_leos_asltd_type_of_weapon_and_percent_injured_2003-2012.xls (The five year total for knives for the years in which Table 70 reports two officer deaths was 4,658.).

¹⁴ *Id.* Blunt objects are likely included in “other dangerous weapons” which lists 7,341 attacks in 2012. *Id.* For the five-year period (2008–2012) in which Table 1 of this comment reports no officer deaths with blunt objects, there were 39,042 reported attacks and 9,081 reported officer injuries from “other dangerous weapons.” *Id.* For the five years (2008–2012) in which Table 1 of this comment reports three officer deaths from personal force assaults, there were 230,051 reported personal force assaults and 64,796 reported officer injuries. *Id.*

Figure 3

The yearly ratio of killings by police to killings of police varies from 3.4 killings by police for every killing of an officer (in 1977) to 9.2 killings by police for every fatality of an officer (in 2008) and the ratio increases markedly over time. The ratio of killings by police to killings of police averages 3.8 to one over the first five years of the FBI homicide program. By 2008–2012, the last five years reported in Figure 3, the average kill ratio has doubled to 7.8 civilian killings for every police fatality. But this substantial expansion in kill ratio is not a result of any increase in the absolute number of reported justifiable killings by police. The volume of such killings averaged 390 a year from 1976–1980 and 400 per year in 2008–2012. As Figure 1 illustrated the rate of killings by police per million population has actually declined over the past generation. So the expanding “kill ratio” in Figure 3 is completely a function of the dramatic drop in police deaths since the 1970s. Because the absolute volume of lethal violence by police officers

¹⁵ Information regarding the number of officers killed from 1976–1998 is taken from BROWN & LANGAN, *supra* note 2. Information regarding the number of officers killed from 1999–2002 taken from UCR: LAW ENFORCEMENT OFFICERS KILLED AND ASSAULTED, 2002, *supra* note 2. Information regarding number of officers killed from 2003–2012 taken from UCR: 2012 LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED: TABLE 1, *supra* note 2. For information regarding justifiable homicides by police from 1976–2005, see FOX & ZAWITZ, *supra* note 2. For 2006–2012, see UCR, 2010 CRIME IN THE UNITED STATES, EXPANDED HOMICIDE DATA TABLE 14, *supra* note 2 and UCR, 2012 CRIME IN THE UNITED STATES, EXPANDED HOMICIDE DATA TABLE 14, *supra* note 2.

has apparently not increased, the negative connotation that an increasing “kill ratio” invites might seem completely unjustified.

But perhaps the expanding kill ratios in Figure 3 are an indication of increasing levels of deadly force by police when measured against the threat to police safety. Statistical stability in killings by police might generate legitimate cause for concern if the circumstances where deadly force is necessary to defend against a deadly assault have dropped off substantially. If killings of police are a reliable measure of the necessity for lethal self-defense by police, the sharp drop in the death rate of police and the expansion of the “kill ratio” it produces are cause for concern. Much more detail about the nature of the circumstances that provoke deadly force from police will be necessary to push this question closer to a resolution. The available statistics from the FBI on this question are not sufficiently detailed or audited to stand alone on these issues but what is now known about truly lethal threats to police in the United States provides disturbing evidence that killing persons without firearms is generally not necessary to prevent an officer’s death or life threatening injury.

IV. CIRCUMSTANCES THAT GENERATE KILLINGS BY POLICE

There are a number of reasons why the FBI’s uniform crime reporting program and the supplementary homicide reports program which this study is using does not report in great detail about justifiable killings by police or the circumstances that produced them. The UCR is centrally a crime report and the assumption of the police agencies that provide data on killings by police and of the FBI itself is that these events are *not* crimes. And while most other events in the supplementary homicide reporting program are Part I offenses collected and audited by the Uniform Crime Reporting Programs, these justifiable events are not audited or analyzed in the UCR reports, perhaps simply because the agency doesn’t regard such events as crimes.

To get some detail on the circumstances that produce killings by police officers, the junior author of this study analyzed Wikipedia press records for reports of killings by police.¹⁶ For 2012, 589 events were found in the Wikipedia

¹⁶ The Wikipedia page is titled “List of killings of law enforcement officers in the United States” and states openly that the list contains killings “whether in the line of duty or not, and regardless of reason or method. Inclusion in the lists implies neither wrongdoing nor justification on the part of the person killed or the officer involved. The listing merely documents the occurrence of a death.” See *List of Killings of Law Enforcement Officers in the United States*, WIKIPEDIA, http://en.wikipedia.org/wiki/List_of_killings_by_law_enforcement_officers_in_the_United_States (last visited Dec. 30, 2014). This page does not aggregate killings or identify them as justifiable or unjustifiable; rather, it lists persons killed by on and off-duty officers, regardless of circumstance, and includes the date, name, city, state, and a brief description of the incident. We applied the definition of “justifiable homicide” used by the FBI: the killing of a felon by a peace officer in the line of duty. See FED. BUREAU OF INVESTIGATION, U.S. DEP’T OF JUSTICE, UNIFORM CRIME REPORTING HANDBOOK 17 (2004), <http://www2.fbi.gov/ucr/handbook/ucrhandbook04.pdf>. Using this definition, all the killings listed were narrowed into 504 “justifiable homicides.” As of January 2, 2015, the

search, 179 more than the 410 events counted by the FBI. However, the Wikipedia press records include both justifiable and unjustifiable, line-of-duty and non-line-of-duty killings. Using the UCR's definition of justifiable homicide as "the killing of a felon by a peace officer in the line of duty," we narrowed down the 589 total deaths to 504 apparently justifiable homicides. We could not match the accounts of particular cases in the FBI and Wikipedia sources and thus have no idea of why the difference in totals, or even whether wider discrepancies would be found if we could match FBI and Wikipedia case reports.¹⁷ So our analysis here is a very rough and imprecise adventure, and any analysis resulting from it should be regarded carefully.

With all its flaws, however, the reports we found provide strong evidence that the major provocation of killings by police officers is the threat of assault against the responding officer, another officer, or a civilian. The dominant provocation in the Wikipedia accounts was a violent assault on the officer by the person killed. In 411 of the 504 accounts the officer or officers who used deadly force were the target of an assault, accounting for 82% of all cases. In 33 cases (7%), another police officer was the target of an assault and in 40 cases (8%), a non-police civilian was the target of the attack. For 2012, Supplemental Homicide Reports accessed via the NACJD report 426 justifiable homicides, 16 more than were reported directly by the FBI in the UCR.¹⁸ Of these 426, 252 (59%) are coded as "felon attacked police officer," 32 (8%) are coded as "felon attacked fellow police officer," and 15 (4%) are coded as "felon attacked a civilian." Depending on the use of the NACJD data or the admittedly haphazard Wikipedia data, between 71% and 97% of all killings by police were provoked by a violent assault.

number of total justified killings listed for 2012 had increased to 595. Given the nature of the source, minor changes in total killings listed is not surprising. We acknowledge the severe limitations in this method of data collection, but assert that this is further proof of the need more a more comprehensive reporting method for killings by police.

¹⁷ Again, some discrepancy could be due to the fact that Wikipedia reports include New York deaths, whereas FBI data does not. From our count, 14 of the 504 Wikipedia justifiable homicides occurred in the state of New York in 2012. This still leaves a large discrepancy which, without the ability to precisely match Wikipedia accounts to specific instances in the UCR dataset, we cannot explain.

¹⁸ The number of total justifiable homicides as reported in Supplementary Homicide Reports in the NACJD are different than those published directly by the FBI in its CRIME IN THE UNITED STATES report. The former lists the number of justifiable homicides as 374, 411, 392, 399, and 426 for the years 2008–2012, while the latter lists 378, 414, 397, 404, and 410 for the same years. See UCR: CRIME IN THE UNITED STATES 2012: EXPANDED HOMICIDE DATA TABLE 14, *supra* note 2. See also FED. BUREAU OF INVESTIGATIONS, U.S. DEP'T OF JUSTICE, UNIFORM CRIME REPORTS: SUPPLEMENTARY HOMICIDE REPORTS (2008–2012), <http://www.icpsr.umich.edu/icpsrweb/NACJD/series/57/studies?q=Supplementary+homicide+reports&archive=NACJD&paging.startRow=1>. The NACJD, hosted by the University of Michigan, publishes FBI data, yet there is a discrepancy between the numbers published of justifiable homicides published at each source. The source of this discrepancy is also unknown. Neither source contains New York data.

Despite imprecision in these numbers, the potential significance of weapon-specific kill ratios over time seems clear. If the dominant motive for deadly force by police officers is self-defense, a stable number of self-defense killings during an era when the officer's risk of a violent death drops by 70% is both a puzzle and a concern.

Related to the shift in kill ratios explored in Figure 3 is the fragmentary data we were able to assemble from Wikipedia reports of 2012 killings by police on the nature of the threat that was reported to have produced a fatal attack from the police. We attempted, with only limited success (and no method of quality control) to establish in the stories we reviewed the weapon used in the attacks against police that led to killings by police. Table 2 provides a profile of the firearm and knife assaults reported in the Wikipedia accounts.

Table 2

Firearm	73.3%
"Possible Firearm"	7.4%
Knife ¹⁹	18.5%
"Possible Knife"	0.9%
	100%
	(352 attacks measured)

Weapon Used in Gun and Knife Assaults against Police that Produced a Fatal Response, 2012 Wikipedia Survey.²⁰

The survey that produced Table 2 searched only for mentions of guns and knives and of course we have no way of confirming the accuracy of reports. But the pattern in Table 2 provides an interesting contrast with the data we reported in Table 1 on the use of weapons in homicides of ordinary citizens and the use of weapons used in killings of police officers. When a weapon causes death in attacks against either civilians or police officer, the cause of death has been confirmed so there are no classifications of "possible gun" or "possible knife" in homicide statistics.²¹ But the ratio of gun attacks to knife attacks that provoke a

¹⁹ In this category we included not only knives but all cutting instruments, including machetes, swords, hatchets, etc.

²⁰ *List of Killings by Law Enforcement Officers in the United States, 2012*, WIKIPEDIA, http://en.wikipedia.org/wiki/List_of_killings_by_law_enforcement_officers_in_the_United_States_2012 (last modified Dec. 7, 2014, 4:00 PM). See *supra* note 17 for a description of how killings from the Wikipedia article were coded as "justifiable." For those killings we interpreted as justifiable, we then coded according to what weapon was used by the victim that produced a fatal response. From the authors' examination of the description of each killing, 352 of the 504 victims of justifiable homicides were killed for threatening with guns, knives, or possible guns or knives. See *infra* note 22 for further description of the method of coding.

²¹ We identified "possible gun" and "possible knife" scenarios from Wikipedia as those circumstances in which the victim was killed for *potentially* having a gun or knife; i.e., reaching into a waistband, reaching beneath a car seat, or police seeing a flash of metal. We also included in this category those circumstances in which the victim was killed for reaching for an officer's weapon,

lethal response from police is just over four to one, much closer to the ratio of knives used in general homicide (67.6% gun to 13.1% knife, or just over five to one) than to the ratio of knife killings as a proportion of all fatalities inflicted on police (less than 1%).

The estimates from Table 2 provide evidence on two issues. First, the percentage of knife attacks provoking the killings by police was much higher (18.5% versus .75%) than its prevalence in killings of police, so it appears that knife attacks are much more frequent when police kill compared to the tiny fraction of police killings by knife. The second inference from the comparison of the low frequency of knife assaults in killings of police is that the 68 knife or possible knife assaults that produced the assaulter's death were unlikely to have killed a police officer. Attacks that very rarely kill police officers nonetheless elicit lethal force from responding officers. This is also the case for assaults against police which involve blunt instruments and personal force. It is probable that more than 100 killings by police each year involve attacks that do not pose a risk to the officer's life.

It could be argued, however, that the low likelihood of a police officer's death from knife and blunt instrument attacks depends on the officer's willingness to shoot and kill that produces about 100 civilian deaths a year in the United States. Yet this seems unlikely on available statistics for two reasons. First, there were only two officer deaths from knives in five years in the United States and these two situations involved an officer alone and a concealed knife at short range rather than the visible brandishing and rushing toward an officer that is more typical in reported knife assaults. So the typical knife and blunt object attacks approaching an officer produced no deaths from 2008 through 2012. What makes this almost complete lack of fatal outcome significant is the high volume of assaults reported by police agencies during the five years beginning in 2008. The volume of knife assaults each year in the period averaged more than 900 and the volume of assaults with "other dangerous weapons" each year exceeds 7,800.²² The total death rate from knife assaults over the period was one per each 2,300 reported knife assaults.

The death rate per 100 gun assaults of a police officer at just under 2% of the assaults is more than 40 times higher than the knife rates.²³ There were no deaths during 2008–2012 from "other dangerous weapons." Yet more than 99% of the knife and other weapon assaults that were reported between 2008 and 2012 did not provoke a lethal response.²⁴ Assaults with knives and blunt instruments generate

because there was a *possibility* that the victim could have accessed the service weapon although they had not yet done so.

²² UCR: LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2012: TABLE 27, *supra* note 9; UCR: LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2012: TABLE 70, *supra* note 13.

²³ UCR: LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2012: TABLE 27, *supra* note 9; UCR: LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2012: TABLE 70, *supra* note 13.

²⁴ UCR: LAW ENFORCEMENT OFFICERS KILLED & ASSAULTED 2012: TABLE 70, *supra* note 13.

very low fatality risks for the officer whether or not a lethal response from the officer occurs.

There is a vast amount that we don't know about these cases because there are no officially collected data to consult. The only two cases found of police death from knife attacks were situations where the officer was alone with the attacker. How often was this true in the cases where the police killed the assaulter? What are the circumstances when police use force—how many shots are fired over how long a period? We don't know and we should find out. All of this is important data on official conduct that generates hundreds of killings a year.

The data currently reported on the race and ethnicity of the persons killed by police officers provides another indication of the promise as well as the current limits of national statistics on killings by police. A central issue in public concern about killings by police is the apparent concentration of minority males as the victims of these encounters. Table 3 reports the victim's race for killings in the supplemental homicide sample for 2011 and 2012.

Table 3

	Killed by Police	U.S. Population, 2010 Census
Black	38%	12.6%
White and Other	62%	87.3%

Race of Persons Killed by Police in 2011 and 2012.²⁵

The concentration of lethal events among Black victims is about three times the proportion of Blacks in the U.S. population but the available data indicates that a substantial majority of victims are not Black. The proportion of victims within the "White and Other" category who are Hispanic cannot be estimated from current data because the ethnicity of victims is not reported for a large number of the killings.

There are a number of reasons why the 38% figure in Table 3 is not a reliable measure of the concentration of lethal events among racial and ethnic minorities. A number of major population centers don't report to the Supplemental Homicide Reports, and even reporting states' data varies significantly between different reporting systems, such as the Supplemental Homicide Report and the National Vital Statistics System.²⁶ There is no decent estimate of Hispanic victims and there is no auditing of submitted reports to assure the accuracy of the classifications by local police agencies. Reliable data on the characteristics of people killed by police is important but unavailable.

²⁵ FED. BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, UNIFORM CRIME REPORTS: SUPPLEMENTARY HOMICIDE REPORTS (2011 and 2012), <http://www.icpsr.umich.edu/icpsrweb/content/NACJD/guides/ucr.html>; U.S. CENSUS BUREAU, 2010 CENSUS BRIEFS: OVERVIEW OF RACE AND HISPANIC ORIGIN: 2010 4 (2011), <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>.

²⁶ Klinger, *supra* note 1, at 81–82.

V. ASYMMETRY IN VIOLENCE BY AND AGAINST POLICE

This survey has encountered two empirical asymmetries in the assessment of fatal force against and by the police.

The first and most important asymmetry is a procedural matter. Data on the violent deaths of police are carefully collected and reported. Data on the much larger numbers of killings by the police has not been carefully collected and thus cannot be usefully analyzed.

Why are killings by the police important? They are the most extreme use of force by agencies of government in the United States and much more common than any other lethal force from government in a domestic setting. The 400 to 500 killings by police each year are about 10 times as many fatalities as current rates of execution and five times the peak rate of executions in the modern era. Killings by police officers outnumber the total number of reported “justifiable killings” by all other citizens so that the rate of killing per 100,000 police in the United States each year is about 600 times the rate of justified killings by non-police. So the risk of using lethal force is concentrated among police officers, but the governmental units these officers report to are decentralized, consisting of literally thousands of municipal, county and state law enforcement agencies. The decentralized nature of policing means that large variations in levels of violence, in training of police, and in police use of deadly force might exist and not be known.

Each killing by a police officer in the United States is an important event that can provide information about the nature and quality of police training as well as the nature of police management. Detailed information is needed on the circumstances justifying the use of deadly force and the methods used to investigate those circumstances. Detailed information also needs to be collected on the circumstances of the force used by police—how many police were present, how many shots were fired, how many wounds were inflicted? If the initial use of deadly force was justified, was there also an evaluation of whether the attack by police went on after the initial justifying force had abated.

If a national profile of police use of deadly force is required, the FBI Uniform Crime Reporting Section is the logical office for collecting such data and it should probably be the responsibility of the subsection of that office that compiles the Supplementary Homicide Reports. The federal Department of Justice has a strong regulatory presence in oversight of local police agencies under section 14141 of the Crime Control Act of 1994.²⁷

The rate of lethal force in a local police agency is an important indicator of a local agency’s capacity to train and investigate deadly force by officers. And a

²⁷ Violent Crime Control and Law Enforcement Act of 1994, 42 U.S.C. § 14141 (1994). See *Conduct of Law Enforcement Agencies*, U.S. DEP’T OF JUSTICE, <http://www.justice.gov/crt/about/spl/police.php> (last visited Jan. 6, 2015).

clear statistical profile of levels of police use of force and its circumstances can help local departments compare their performance against other departments.

There is also an important advantage in having the same agency and statistical program collect data on lethal force against police as well as by police. The most important method of evaluating what kinds of circumstances should justify lethal force by police is a detailed look at which types of attacks lead to killings of police. One critical question in evaluating whether deadly force by an officer is warranted is whether the same type of assault against an officer that provoked a killing also frequently led to the death of a police officer. If so, the use of deadly force seems easy to justify. If not, the issue of whether such force was necessary is much more difficult. An obvious example of this is the data presented in the previous section on the weapons that kill police officers. More than nine times out of ten, a firearm is the cause of an officer's death. The danger to life of a loaded gun compared to other weapons is evident in the aggregate weapon-specific data on killings of police. In the next section of this essay we will discuss the impact of statistics that show much lower death rates in knife and other attacks against police. But whether the proportion of officer deaths is high or low, our point here is that having good data on both deaths of police and the deaths that police cause provides valuable comparisons on the justification of violence by police.

But much richer detail than just the weapon used in an attack against a police officer is necessary for the most useful judgments about the extent to which a deadly police response is necessary and desirable. One important detail (missing now from both killings of police and killings by police) is whether the officer was alone or with other police. The larger the police presence, the larger the number of counter-force options might be available instead of extensive gunfire. The larger the number of potential attackers present at the scene, the greater the threat to the officer. The better the detail about the circumstances of lethal force, the more informed can be an assessment of whether and to what extent the police needed to use lethal force.

But the United States of 2015 is a nation in which no confirmed details exist on the hundreds of killings each year that are classified as justifiable by police. Wikipedia is a wonderful resource in the modern world but it is a very inadequate foundation for policy analyses about whether and how a substantial number of killings by police can be safely avoided. A carefully collected and detailed reporting of killings by law enforcement is long overdue as a program of the FBI. Just as that agency now reports on levels of police employment and other collective characteristics of law enforcement in the United States, the life and death details of police force are a high priority for national reporting.

VI. AN ISSUE OF SUBSTANTIVE ASYMMETRY

The data we report in this paper does suggest that reductions in the use of deadly force when knives, blunt objects, and personal force threaten the officer can save lives at minimal risk to police.

For most questions of law enforcement and empirical criminology, the classification of weapons as deadly or not is an issue of general application. If the issue is whether knives and other cutting instruments should be considered a deadly weapon, it is usually assumed that a single answer to that question should provide clear guidance across a wide variety of different contexts. But Table 1 presented earlier in this analysis suggests that knives represent a very different threat to citizens than to police officers in uniform. Knife and cutting instruments produced 13.1% of all civilian deaths in 2012 and are the second leading cause of death in American criminal homicide. If a citizen is attacked with a knife, the appropriate legal and policy result would be to consider the knife a deadly weapon and to privilege the citizen's response accordingly. But Table 1 also shows that knives kill police officers in only a small number of cases, 0.75% of all killings of police and 1/15th the proportion of general homicides. This is a different context for considering how much force police should use in response to "man with a knife" settings and when police should stop shooting in such cases if they start. This is particularly true if the police officer under attack is not alone when he or she is in peril. (The only two killings of police with knives in the five years after January of 2008 occurred when the officer was alone.)

A more thorough analysis of the proper response to police being threatened with knives and blunt instruments requires exactly the kind of data that is currently not collected when police kill. Those who make policy for police could do their jobs much more effectively with an accurate portrait of when police officers kill and why.

A final note concerns the provenance of the methods used in this analysis. The use of weapon specific death rates from assault in this analysis continues a series of empirical studies that analyzed the importance of the instruments of violence in determining the outcome of attacks.²⁸ The current study adds a new dimension to this set of "instrumentality" studies by showing that the character of the victim of assaults can be a major determinant of the likelihood of a fatal outcome. We hope that this analysis will suggest the value of the approach and motivate the improvement of the data available on killings of and by police so that empirical data can facilitate the protection of both police and citizens.

²⁸ See, e.g., Frank Zimring, *Is Gun Control Likely to Reduce Violent Killings?*, 35 U. CHI. L. REV. 721 (1968); Franklin E. Zimring, *The Medium is the Message: Firearms Caliber as a Determinant of the Death Rate from Assault*, 1 J. LEGAL STUD. 97 (1972); Franklin E. Zimring & James Zuehl, *Victim Injury and Death in Urban Robbery: A Chicago Study*, 15 J. LEGAL STUD. 1 (1986).