DEATH ON PATROL: FELONIOUS KILLINGS OF POLICE OFFICERS

A "RESEARCH IN BRIEF" REPORT

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Lorie A. Fridell
Florida State University

Antony M. Pate
Florida State University

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Introduction

According to the Federal Bureau of Investigation (FBI), 3,141 law enforcement officers were killed in the line of duty between 1972 and 1993; 1,986 were killed feloniously and 1,313 accidentally. Although the number of felonious killings each year declined notably from 1972 to 1984, (probably due to better training, increased use of body armor, and improved medical care), police officers are killed feloniously at work at a higher rate than all occupations except taxi drivers (Castillo and Jenkins, 1994).

Although many police policies are designed to protect officers from the threat of violence and a great deal of training dedicated to teaching officers how to thwart assaults, researchers have paid little attention to this subject. Criminologist Lawrence Sherman (1980) has discussed the emphasis placed on different types of violence between citizens and police, i.e., police against violence, violence by police, and violence against police:

> If we are concerned with the dignity and safety of all persons . . . each [topic] is equal in importance to the others. What is not equal is our knowledge, both theoretical and practical, about each question. We arguably know the most about how to reduce violence by police and the least about how to reduce violence against the police (p. 4).

As a step toward providing such an understanding, the Police Foundation, with support from the National Institute of Justice, conducted a comprehensive analysis of police homicides in the United States. Specifically, the focus of the research was on the felonious killings of officers. The purposes of this study were to:

- Examine trends in the number and rates of killings across types of law enforcement agencies and attempt to explain differences across agencies,
- Increase knowledge regarding the use and effectiveness of soft body armor, and

- Conduct detailed analyses concerning the nature and circumstances surrounding incidents of felonious police killings.

Below we summarize selected findings from this research. Specifically, we describe some of the differences across agency types and summarize the results of the in-depth analyses of incidents in which police officers were feloniously killed.

Agency-Level Analyses

Number of Felonious Killings of Law Enforcement Officers by Agency Type

Of the 1,986 felonious killings of police officers recorded by the Federal Bureau of Investigation between 1972 and 1993, the largest numbers of killings have occurred among municipal agencies, which accounted for 1,130 of the total. County agencies, including both sheriffs' departments and county police departments, accounted for 469 such homicides. The third highest number of felonious homicides, 174, occurred among sworn personnel of state police and highway patrol agencies. A total of 53 federal law enforcement officers were feloniously killed during this 22-year period. An additional 41 employees of other State agencies, such as Fish and Game Authorities and Alcohol Beverage Control Boards, were also feloniously killed, as were 17 officers employed by other local agencies (such as regional transit authorities). Finally, a total of 102 law enforcement officers employed in United States territories (such as Puerto Rico, the Virgin Islands, Guam, and American Samoa) were also killed.

The total number of police officers who have been feloniously killed each year fell markedly between 1972 and 1986, but have remained generally stable since then. We believe this decline is due to a number of factors, including the wider use of protective vests, improved training, and higher levels of concern about this issue. The changes in numbers of

killings, however, have varied across types of law enforcement agencies. To better understand the overall trends in felonious killings, Table 1 provides a comparison of the number of felonious killings that were recorded within each agency type for the periods 1972-1982 and 1983-1993, the differences in recorded numbers between those two periods, and the percentage difference in those differences.

TABLE 1

FELONIOUS KILLINGS OF POLICE OFFICERS BY AGENCY TYPE
1972-1982 COMPARED TO 1983-1993

AGENCY TYPE	KILLINGS 1972-1982	KILLINGS 1983-1993	CHANGE	PERCENT CHANGE
MUNICIPAL	719	411	-308	-42.8%
COUNTY	274	195	-79	-28.8%
OTHER LOCAL	11	6	-5	-45.5%
STATE POLICE/HP	108	66	-42	-38.9%
OTHER STATE	22	19	-3	-13.6%
FEDERAL	23	30	+7	+30.4%
PUERTO RICO	39	52	+14	+35.9%
OTHER FOREIGN	7	4	-3	-42.9%
TOTAL	1203	783	-420	-34.9%

As the table indicates, there was an overall decline of 34.9 percent in felonious killings of police officers between the 1972-1982 and 1983-1993 periods. The table also indicates that there was considerable variation across agency types in the change between the two periods. Among municipal police departments, for example, there was a 42.8 percent decrease in the number of officers killed. County agencies recorded a decrease of 28.8

percent. The decrease was 45.5 percent for other local agencies (such as transit and housing authority police). Felonious killings of state police and highway patrol officers declined by 39.9 percent. Among other state agencies (such as Fish and Game Authorities and Alcohol Beverage Control Boards), there was a decrease of only 13.6 percent. The number of foreign officers (excluding Puerto Rico) fell by 42.9 percent. Finally, there were increases in felonious killings of Federal police officers and police officers in Puerto Rico. Among federal officers, the number of such killings rose by 30.4 percent. Among officers in Puerto Rico, the number of felonious killings rose by 35.9 percent.

The results of the differential changes in trends across agency types are seen more clearly in Table 2, which shows the percentage distribution of felonious killings during the 1972-1982 and 1983-1993 periods, respectively. As that table indicates, among police officers who were feloniously killed, the percentage of municipal police officers fell from 59.8 percent during the 1972-1982 period to 52.5 percent during the 1983-1993 period. On the other hand, the percentage of slain officers who were employed by county agencies rose slightly from 22.8 percent in the first half of the period studied to 24.9 percent during the second half. The percentage of felonious killings of Federal officers doubled from 1.9 percent between 1972 and 1982 to 3.8 percent during the 1983-1993 period. Among officers who feloniously killed, the percentage in Puerto Rico more than doubled, rising from 3.2 percent during the first period to 6.6 percent during the second. No appreciable changes occurred among the other agency types.

TABLE 2

PERCENTAGE DISTRIBUTION OF FELONIOUS KILLINGS OF POLICE OFFICERS BY AGENCY TYPE
1972-1982 COMPARED TO 1983-1993

AGENCY TYPE	PERCENT 1972-1982	PERCENT 1983-1993	CHANGE	PERCENT CHANGE
MUNICIPAL	59.8%	52.5%	-7.3%	-12.2%
COUNTY	22.8%	24.9%	+2.1%	+9.2%
OTHER LOCAL	0.9%	0.8%	-0.1%	-11.1%
STATE POLICE/HP	9.0%	8.4%	-0.6%	-6.7%
OTHER STATE	1.8%	2.4%	+0.6%	-33.3%
FEDERAL	1.9%	3.8%	+1.9%	+100.0%
PUERTO RICO	3.2%	6.6%	+3.4%	+106.3%
OTHER FOREIGN	0.6%	0.5%	-0.1%	-16.7%
TOTAL	100.0%	100.0%	–	–

To provide a better understanding of the changes that have occurred in the last two decades, Table 3 shows a comparison of the number of felonious killings that were recorded within city and county agencies, by jurisdiction size, for the periods 1972-1982 and 1983-1993, the differences in recorded numbers between those two periods, and the percentage difference in those numbers. As that table indicates, although declines occurred in municipal and county agencies of all types and jurisdiction sizes, there was considerable variation among categories of agency type and size. The greatest decline, 55.1 percent, occurred among municipal police departments in jurisdictions with fewer than 25,000 inhabitants. The second largest decline, 41.3 percent, occurred in city police departments serving jurisdictions

of 250,000 or more inhabitants. By far the smallest decline, 11.9 percent, was noted among city police departments serving jurisdictions with 100,000 to 249,999 persons.

TABLE 3

FELONIOUS KILLINGS OF POLICE OFFICERS BY JURISDICTION SIZE FOR MUNICIPAL AND COUNTY AGENCIES: 1972-1982 COMPARED TO 1983-1993

Jurisdiction Size	Killings 1972-1982	Killings 1983-1993	Change	Percent Change
Cities 250,000 and Up	305	179	-126	-41.3%
Cities 100,000-249,999	67	59	-8	-11.9%
Cities 25,000-99,999	111	67	-44	-39.6%
Cities Under 25,000	236	106	-130	-55.1%
Suburban Counties	146	113	-33	-22.6%
Rural Counties	128	82	-46	-35.9%

Rates of Felonious Killings of Law Enforcement Officers by Agency Type

In order to control for the variability in the number of officers employed within agency types, rates of felonious killings per 100,000 sworn officers for municipal, county, state police and highway patrol agencies were calculated. (Data concerning sworn personnel for other local and state agencies and for federal law enforcement officers were not available.) The overall rate has declined notably from approximately 30 per 100,000 sworn officers in the early 1970s to less than 10 per 100,000 in four of the last five years. There is a remarkable similarity in the overall rates at which officers in municipal, county, and state police and highway patrol agencies have been feloniously killed during the entire 1972-1993 period; the rates per 100,000 for each of those three agency types has been 16.63, 16.64,

and 16.50, respectively. Similarly, there was a general downward trend in rates among all three of these agency types between 1972 and 1986, after which rates have remained basically constant.

In order to provide insight into the relative trends in the rates at which officers have been killed in municipal; county; and state police and highway patrol agencies, Table 4 shows the rates for the 1972-1982 and the 1983-1993 periods.

TABLE 4

FELONIOUS KILLING RATES PER 100,000 SWORN OFFICERS, BY AGENCY TYPE
1972-1982 COMPARED TO 1983-1993

Agency Type	Killing Rate 1972-1982	Killing Rate 1983-1993	Change	Percent Change
Municipal	22.56	11.35	-11.21	-49.7%
County	28.83	10.44	-18.44	-63.7%
State Police/HP	21.71	11.85	-9.86	-45.4%
Puerto Rico	39.77	41.02	+1.25	+3.1%
Total	24.09	12.01	-12.07	-50.1%

As the table reveals, the overall rate per 100,000 at which law enforcement officers were feloniously killed fell from 24.09 to 12.01, a reduction of 50.1 percent. The greatest reduction was among county agencies, in which the rate fell from 28.83 per 100,000 to 10.43, a reduction of 63.7 percent. (It should be noted, in interpreting these rates, that a change in definitions by the U.C.R. in 1983 led to a 123.4 percent increase in the reported number of officers employed in sheriffs/rural agencies between 1982 and 1983. Part of the reduction in rates must be attributed to this increase.) Among municipal agencies, the rate of

felonious killings per 100,000 fell from 22.56 to 11.35, a reduction of 49.7 percent. Among state police and highway patrol agencies, the rate per 100,000 officers at which officers were feloniously killed fell from 21.71 to 11.85, a decline of 45.4 percent. Contrary to all other agency types, the rate at which officers in Puerto Rico were feloniously killed rose from 39.77 to 41.02 per 100,000 sworn officers, an increase of 3.1 percent.

Table 5 provides a comparison of the felonious killings rates within municipal and county agencies, by type and jurisdiction size, for the periods 1972-1982 and 1983-1993, the change in rates between those two periods, and the percentage change in those two rates. As the table indicates, the greatest decrease in felonious killing rates (77.4%) occurred among rural county agencies. As discussed above, this change must be interpreted in light of the fact that a change in the definition by the U.C.R. of sheriff/rural agencies occurred between 1982 and 1983. The second greatest decline (65.1%) occurred among cities with fewer than 25,000 inhabitants. There was also a decline of 48.2 percent among cities with between 25,000 and 99,999 inhabitants, a decline of 42.3 percent among cities with 250,000 or more inhabitants, a 23.0 percent decline among cities with between 100,000 and 249,999 inhabitants, and a 22.6 percent decline among agencies in suburban counties.

TABLE 5

FELONIOUS KILLING RATES BY JURISDICTION SIZE FOR
MUNICIPAL AND COUNTY AGENCIES: 1972-1982 COMPARED TO 1983-1993

Jurisdiction Size	1972-1982	1983-1993	Change	Percent Change
Cities 250,000 and Up	23.24	13.42	-9.82	-42.3%
Cities 100,000-249,999	20.83	16.04	-4.79	-23.0%
Cities 25,000-99,999	15.90	8.24	-7.66	-48.2%
Cities Under 25,000	27.61	9.64	-17.97	-65.1%
Suburban Counties	21.83	10.56	-11.27	-22.6%
Rural Counties	45.45	10.28	-35.17	-77.4%

Number of Felonious Killings of Law Enforcement Officers By Agency

A total of 60 agencies had five or more officers feloniously killed during the 1972-1993 period. Among those agencies, 31 were municipal police departments, 9 were county agencies, 2 were other local agencies, 12 were state police or highway patrol agencies, 5 were Federal agencies, and the last was the police of Puerto Rico.

A total of 22 agencies had ten or more of their officers feloniously killed. The greatest number of those killings occurred among the Puerto Rican police, which had 91 of their officers feloniously killed during the 1972-1993 period. The second highest number was found among the officers of the New York City Police Department, which had 64 of its officers killed feloniously between 1972 and 1993. Following far behind in this tragic list were the municipal departments in Chicago, Philadelphia, Detroit, Los Angeles, Atlanta,

Baltimore, Dallas, and Houston, with between 35 and 17 officers feloniously killed during that period.

The only two county agencies that had at least ten of their officers feloniously killed between 1972 and 1993 were the Los Angeles Sheriffs Office and the Metro-Dade Police Department, which had 16 and 12 of their officers killed, respectively.

Four state highway patrol agencies had ten or more of their officers feloniously killed between 1972 and 1993: those in Texas (15), Florida (11), North Carolina (10), and South Carolina (10).

Finally, two Federal law enforcement agencies had 10 or more of their officers feloniously killed between 1972 and 1993. Specifically, the Drug Enforcement Administration had 12 of its officers killed during that period; the Federal Bureau of Investigation experienced 11 felonious killings of its officers during the same time.

Rates of Felonious Killings of Law Enforcement Officers By Agency

As with agency types, the number of sworn officers employed by each agency varies considerably. In order to take into account these differences in staffing levels, it is imperative to calculate rates of felonious killings standardized by the number of sworn officers per agency. Further, because these rates can be erratically inflated among agencies with a small number of sworn officers, it is important to restrict the comparison of these rates to agencies with large enough numbers of sworn officers to avoid that erratic inflation. Recognizing these concerns, we calculated the rates (per 100,000 sworn officers) at which officers were feloniously killed among the fifty largest municipal police departments for the period between 1972-1982, the period between 1983-1993, and the entire period between

1972-1993. The highest rates across the entire period were found in Oakland, Atlanta, Charlotte, Cincinnati, Fort Worth, Indianapolis, San Antonio, San Diego, Dallas, and Nashville.

A comparison of the rates for the 1972-1982 and the 1983-1993 periods within individual agencies reveals that although most rates declined between the two periods, those in Charlotte, Albuquerque, and Oklahoma City increased notably. Other agencies, including Cincinnati, Nashville, Fort Worth, and Birmingham, experienced large decreases in the rates at which their offices were feloniously killed.

A similar comparison was made of the rates among the nation's 50 largest county law enforcement agencies. That analysis indicates that the highest rates at which county law enforcement officers were feloniously killed were found in the Tarrant County, TX, Sheriffs Department, the East Baton Rouge Parish, LA, Sheriffs Department, the Prince George's County, MD, Police Department, the Broward County, FL, Sheriffs Department, and the DeKalb County, GA, Police Department. In general, the rates among the largest county agencies were appreciably lower than the rates among the largest city agencies. In fact, 20 of the 50 largest county agencies had none of their officers feloniously killed between 1972 and 1993.

A similar analysis of the felonious killings rates for the 49 state police and highway patrol agencies, as well as the Puerto Rican police revealed that the highest rates were found among officers of the South Dakota Highway Patrol, the Alaska State Police, the South Carolina Highway Patrol, the Oklahoma Highway Patrol, and the New Mexico State Police.

It is worth noting that among highway patrol agencies, the Puerto Rico Police have a lower felonious killing rate than eight state agencies.

It is also worthy of note that, when the felonious killings rates are compared across the largest agencies of all types, 6 of the highest 10 rates were demonstrated by state agencies, 3 by municipal police departments, and 1 by a county law enforcement agency. Among the highest 20 rates, 10 were demonstrated by state agencies, 8 by municipal departments, and 6 by state agencies (including Puerto Rico).

Regression Analyses of Felonious Killing Rates in Largest Municipalities

In an attempt to find systematic differences among the rates at which law enforcement officers have been feloniously killed, we developed an analytical model to structure multiple regression analyses to explain variations among the 56 largest municipal agencies. We focused on these agencies primarily because of the fact that data concerning a large number of potential explanatory variables are available. In addition, our review of the literature produced few empirically testable hypotheses concerning either county or state agencies.

Because the rates at which officers have been feloniously killed have declined dramatically in the last several years, we produced two empirical versions of this model, the first to explain the killings rates between 1977 and 1984, the second to explain the killings rates between 1985 and 1992, the last year for which data were available at the time of these analyses. The analytical models selected included independent variables representing the general environment of the 56 cities, the specific crime environment of those cities, and selected characteristics of the law enforcement agencies themselves. The selection of

indicators of the general environment was based on the work of Cardarelli (1968), Lester (1978a, 1978b, and 1982), Peterson and Bailey (1988), and Chamlin (1989).

Among the indicators of the general municipal environment, we used a dichotomous ("dummy") variable to indicate whether the city was or was not located in the South, in order to test the hypothesis that violence was highest in that region.

Based on earlier research indicating a relationship between poverty and income inequality and violence, we created a three-item "poverty index," based on the results of factor analysis, composed of standardized scores of the percent of the families in the city which were below the poverty level, the Gini index of income inequality, and the percent of the population which was African-American.

We also included as independent variables the population density of the city, the percent of the population that was Hispanic, and the percent of the population between the ages of 15 and 34, the most violent-prone population category.

Among indicators of the crime environment, we included the number of recorded violent and property crimes per 100,000, as indicated in the Uniform Crime Reports. Based on the hypothesis that cities with large numbers of crimes involving guns could be expected to have the highest levels of violence, we also created a three-item index of gun-related crime. Based on the results of factor analysis, this index was created by combining the standardized scores of the percent of homicides committed with guns, the percent of aggravated assaults that were committed with guns, and the percent of robberies that were committed with guns.

As indicators of the agency environment, we included the number of violent and property crime arrests per 100,000 sworn officers, as measures of activity and potential vulnerability. We also included the percent of officers who were injured in assaults, as a general measure of the dangerousness of the department. Finally, for methodological reasons, we included the inverse of the number of sworn officers, multiplied by 100,000. This latter variable adjusts for possible bias introduced by including both independent and dependent variables with the same denominator, in this case, the number of sworn officers.

Results. For each time period, we initially included in the regression analyses all of the hypothesized independent variables (the "full model") in order to determine what relationship those variables had with the dependent variable, the felonious killing rate. We then systematically reduced the model by removing nonsignificant predictors, to the point where we maximized the adjusted variance explained by the predictors, producing the "reduced model." The results of the first series of regression analyses, for the killings rates between 1977 and 1984, produced a reduced model with four significant predictors and explained 28.3 percent of the variance in the felonious killing rate, after adjusting for the number of predictors in the equation. Among the significant results were that the killing rate was positively related to the violent crime rate, the gun crime index, and the number of property crime arrests per 100,000 sworn officers. On the other hand, the killing rate was negatively related to the number of violent crime arrests per 100,000 sworn officers.

The results of the second series of regression analyses, for the killings rates between 1985 and 1992, indicated that the reduced model again produced four significant predictors, but explained 40.7 percent of the variance in the killing rate, after adjusting for the number

of predictors used. Among the significant results was the finding that the killing rate was positively related to the violent crime rate but negatively related to the poverty index, population density, and the inverse of the number of sworn officers.

In comparing the results of these two sets of analyses, what is most striking is that only one predictor, the violent crime rate, was significantly related to the felonious killing rate during both periods. In each case, cities with high violent crime rates were more likely to have high felonious killing rates. However, the other three significant predictors in the 1977-1984 period, the gun crime index and the violent and property crime arrests per 100,000, failed to reach statistical significance during the second period. Likewise, none of the other significant predictors during the second period, the poverty index, population density, and the inverse of the number of sworn officers, reached the level of statistical significance during the first time period..

Thus, in the last two decades, not only has the number and rate at which police officers are feloniously killed gone down dramatically, the factors that empirically predict difference in those rates among the nation's largest cities have undergone a significant transformation.

In-Depth Analyses of Incidents

An incident-level data base for the decade encompassing 1983 through 1992 is comprised of two parts: UCR-coded data on the officers and incidents, and incident and officer data coded from narrative descriptions of each incident published by the FBI. The FBI has been collecting information on the felonious killings of police since 1945. Starting in 1972 this agency started issuing the LEOKAs (Law Enforcement Officers Killed and

Assaulted) which summarized for each year the nature and extent of felonious police killings. Information is presented in these publications regarding the officer, the incident, and the opponent. Starting in 1980, the FBI computerized these data. For this study, the FBI provided a computerized data set for the years 1980 through 1992.

To supplement this data base, the Foundation drew upon the academic and practitioner literature in the area of police killings, as well as the methodological developments in the areas of police use of deadly force and assaults against police to identify, for coding purposes, more detailed and useful data elements for study. These data elements were coded from the narratives describing the incidents of police killings contained in the FBI LEOKAS for 1983 through 1992. These variables were added to the UCR-coded data described above to form the 10-year incident-level data base for this component of the study.

The data provided from the narratives are valuable in two respects. First of all, the variables provide more detail than that provided by the UCR data set. For instance, the newly coded data set includes information regarding the type of agency for which each officer worked, whether or not the officer was armed, whether the officer was working a security job, the manner in which the officer's attention was drawn to the incident, the locations of the officer and opponent, the number of threatening persons faced by the officer, and so forth. For some categories of information, the new data set provides more in-depth information regarding a particular aspect of the encounter, than that provided by the UCR. For instance, the UCR provides information regarding whether there were other officers at the scene of the encounter which resulted in the officer's slaying. This study goes further, by indicating the number of officers at the scene and the number of officers in the immediate

presence of the victim officer at the time of the attack. In another example, the UCR codes "Circumstances at the Scene of the Incident" using the following major and subcategories:

Disturbance Calls
    Bar Fights, man with gun, etc.
    Family Quarrels
Arrest Situations
    Burglaries in progress/pursuing burglary suspects
    Robberies in progress/pursuing robbery suspects
    Drug-related matters
    Attempting other arrests
Civil Disorders (Mass disobedience, riot, etc.)
Handling, Transporting, Custody of Prisoners
Investigating Suspicious Persons/Circumstances
Ambush Situations
    Entrapment/premeditation
    Unprovoked attack
Mentally Deranged
Traffic Pursuits/Stops

These categories do not provide the level of detail necessary to draw policy-relevant conclusions. For instance, not discernable from this scheme is information regarding the frequencies with which officers are killed: conducting searches of homes or autos, investigating completed crimes, conducting drug-related undercover work, serving arrest warrants, providing non-crime assistance, and so forth. Within the FBI "Traffic Pursuits/Stops" category, one cannot distinguish between officers killed while in pursuit of vehicles, killed while staffing roadblocks, or killed during traffic stops. Under "drug-related matters" one cannot determine if the officer's death occurred while conducting a search of the offender's home, attempting an undercover buy, attempting an arrest per a warrant, attempting a warrantless arrest, or while conducting surveillance. Because of these and other problems, the authors of this study separated "circumstances at the scene" into two variables: police activity and crime type. Thus, the first variable indicates, for instance, whether the

officer is investigating suspicious persons or circumstances, intervening in an ongoing crime, investigating a completed crime, attempting an arrest pursuant to a warrant, attempting a warrantless arrest, conducting a vehicle pursuit, staffing a roadblock, executing a search warrant, conducting a warrantless search, doing undercover work, providing non-crime assistance (e.g., assisting at a traffic incident), and so forth. The second variable indicates the crime type which is the focus of the police activity, for instance, murder, robbery, drug offense, and so forth.

Even more detail regarding the incident, however, is needed to adequately understand the nature of the phenomenon and, indeed, most of the narratives indicate the actual behaviors of officers and suspects which preceded the lethal events. In some instances, for example, the officers were frisking suspects immediately prior to their deaths. Knowing the extent to which police deaths occur during this specific police procedure (rather than "during an arrest") is more helpful for developing prevention strategies. Similarly, knowing that an officer was killed while emerging briefly from his place of cover is useful information for training-related purposes. The authors of this study collected this detail from the narratives where it was provided.

Another advantage of the code scheme used here is that it incorporates into the study of police killings the conceptualization used in police use of deadly force research to assess the progression of incidents. Scharf and Binder (1983) argue that analyses of deadly force incidents should not focus only on the "final frame" of the encounter, but also on decisions made early in such an encounter which may increase or decrease the likelihood of a violent outcome. This involves conceptualizing potentially violent encounters, not merely as "split-

second decisions" made by officers (or opponents), but as incidents involving multiple decisions made by both opponents and officers where early decisions in an encounter affect the options available at a later point. Or as Binder and Scharf (1980:111) explain, "the violent police-citizen encounter ... is ... a developmental process in which successive decisions and behaviors by either police officer or citizen, or both, make the violent outcome more or less likely."

To facilitate the analysis of potentially violent armed confrontations between citizens and police from beginning to end, Binder and Scharf (1980) and Scharf and Binder (1983) developed a four-phase model. The four phases of the confrontations are Anticipation, Entry and Initial Contact, Information Exchange, and Final Phase. Within each of the phases, various alternative behaviors of officers, actions of opponents, and situational factors are analyzed which may affect whether the encounter moves toward a violent or nonviolent resolution. The authors of this study adopted a modified version of this model for its analysis of incidents.

Below we present selected results of our analysis of 713 officers feloniously killed during the period 1983 through 1992.

Initiation and Anticipation Stages.

Scharf and Binder (1983) argue that the mode of initiation may have ramifications for subsequent developments within the encounter. Of the 713 officers killed during the years 1983 through 1992, one-third (33.5%) of them were dispatched to the incident in which they were killed. Another one-third (30.7%) of the officers proactively initiated the contact with the opponent as a result of observations. Twenty percent (19.6%) of the officers were on

assignment at the time of the incident. They were, for instance, serving a warrant, questioning a witness, or conducting surveillance. Some of the officers who were working security jobs were "on assignment" at a bank security desk. (Patrol was not defined as an assignment.) In 5.8 percent of the incidents, police action was "unanticipated." This category included the situations in which the officers "walked in" on crimes that they were unaware were taking place, or had the crimes "walk in" on them. For instance, one officer was on break conducting a transaction at his bank when a robbery took place. Similarly, some situations involved on-duty or off-duty officers walking into establishments, unaware that crimes were taking place within. Finally, 51 of the incidents, or 7.5 percent, involved ambushes of the officer. That is, the assailant sought out a particular officer to kill, usually as a result of some previous police action involving the assailant, or an assailant killed an officer only because of his/her status as an officer.

The phase-analysis acknowledges that some officers have periods of time during which they anticipate the face-to-face contacts with the assailants and others do not have these moments. Having a period of time to anticipate may provide the critical moments during which an officer can plan his/her actions. Ninety percent (90.0%) of the encounters had anticipation stages; that is, a period of time amounting to more than a few seconds during which the officer anticipated face-to-face contact and/or being "on scene" with the persons who turned out to be the assailants.

Entry.

Defining "entry" into the incident was difficult due to the many variations and nuances of encounters. Generally speaking, "entry" defines the point at which the officer

and assailant are first interacting. In most situations this occurs when the officer first is face-to-face with the assailant. This includes defining "entry" in a traffic stop as the point at which the officer and assailant are face-to-face and "entry" in a search situation when the officer sights the opponent.

In a foot or car chase, "entry" occurs when the pursuit begins, even though there has not been face-to-face interaction. And "entry" occurs if communication is initiated between the officer and the opponent even if this communication is brief and even if it is not face-to-face (e.g., in a barricaded suspect situation).

The key is the interaction between the officer and the person who subsequently kills him or her. The officer's interaction with the assailant--and not his/her interaction with other persons or suspects at the scene--defines "entry." (The attempt was to be very conservative. If anything, "killed at entry," below, is underestimated. Brief communications such as identifying oneself as an officer or commanding an opponent to stop, initiated "entry.")

Killed at Entry. In 39.6 percent of the incidents, the officers were "killed at entry," that is, the first interaction of the officer with the assailant was the fatal attack. The remaining 60.4 percent of the officers had some sort of interaction (pursuit, communication) with the suspect prior to their attacks.

Officer Action and Crime Types. In approximately one-third (32.5%) of the incidents, the officers were intervening in ongoing crimes (or the immediate escape therefrom) when slain. In another 16.4 percent of the incidents, officers were making or attempting to make arrests in situations other than those in which the crime was ongoing. In

13.1 percent of the incidents, officers were issuing citations and in 12.8 percent they were investigating suspicious persons or circumstances.

In 15.5 percent of the incidents, the officers were attending to traffic offenses. Another 14.1 percent were attending to robbery incidents, and 13.8 percent were attending to non-violent criminal activity other than burglary or drugs.

It became apparent as the narrative coding scheme was being developed that officers classified by the FBI as being feloniously killed in the line of duty during incidents involving the crime of robbery, were frequently in situations where they themselves were being victimized (e.g., while off duty or on assignment in plainclothes) or found themselves inside commercial establishments when robberies took place.

In fact, of the 81 incidents in which an officer was feloniously killed in the course of a robbery, 42 of these, or 51.9 percent were the type of victimizations described above. Twenty-eight, or 66.7 percent, of those 42 incidents involved personal victimizations of the officers. (This includes one home burglary.) The remaining 14, or 33.3 percent, involved victimizations of the establishments the officers were in. Nearly, three-fourths (73.8%) of these officers were off-duty and 16.7 percent were working undercover. One was working as a detective (2.4%) and two (4.8%) were on special assignment.

Officers slain while intervening in an ongoing crime were most frequently intervening in a domestic disturbance (24.0%) or a robbery (22.1%). Just under half (46.7%) of the officers slain while investigating a completed crime were investigating a non-violent crime other than burglary or drugs. Ninety-four percent (94.1%) of the situations involving citations, were traffic related. Four out of five officers (82.8%) slain while

executing a search were searching for people or evidence related to drug offenses. Ninety-one percent of the slain undercover officers were working on drug cases.

Final Frame

Location of Attack. Forty-three percent (43.3%) of the officers were roadside when they were killed. An additional one-quarter (25.3%) were outside but not roadside. (This includes attacks in parking lots and driveways.) In 30 incidents (4.4%), the narratives indicated that the officer was outside, but did not indicate whether or not he was roadside. Twenty-seven percent (27.0%) were inside structures. (This includes one officer killed inside a parking structure.)

Most (55.2%) of the officers who were inside structures when attacked, were in residences. Twenty-eight percent (28.4%) were inside commercial establishments. For a large percentage (38.7%) of officers who were killed roadside, the narratives did not indicate whether they were in residential or commercial areas. The narratives indicated that 27.2 percent of the officers killed roadside were in residential areas and 8.9 percent were in commercial areas. Nearly one-quarter (23.6%) of the officers killed roadside were in neither residential nor commercial areas. Many of these were at the side of highways.

Since such a large number of officers were killed roadside or in parking lots, information was collected regarding the location of the officers relevant to vehicles on the scene. Three hundred and twenty-four of the 713 officers (45.4%) were in or around automobiles at the time of their deaths. A full one-third (31.5%) of these officers (14.3% of all slain officers) were in their police vehicles or their own personal vehicles when assaulted. Another 66.0 percent of the 324 (30.0% of all slain officers) were in the immediate vicinity

of either their (police or personal) vehicles or of the subjects' vehicles. Three officers were inside the subjects' vehicle. (One was searching a van, one was inside a motor home, and another was hiding in the back seat of a kidnapper's vehicle.)

Number of Suspects. Sixty-nine percent (68.9%) of the slain officers faced a single threatening opponent at the time of their deaths. Nineteen percent (19.0%) faced two threatening opponents, 4.9 percent faced three, and 2.9 percent faced four. Just under two percent (1.9%) faced five or more suspects with another 2.1 percent facing a group of unspecified size. In two incidents (0.3%) involving bombs, no suspect was present when the officer was slain.

Other Officers on the Scene. The FBI collects information regarding whether the slain officer was "alone, no assistance requested," "alone, assistance requested," or "assisted by other officer(s) at the time of the attack." Per the FBI data, approximately half of the officers slain during the period 1983 through 1992 had assistance at the scene at the time of attack, about 40 percent of the slain officers were alone and had not requested assistance, and less than 15 percent were alone but had requested assistance. Using the narratives we acquired more specific information regarding how many officers were at the scene and, further, how many officers were in the immediate vicinity of the slain officer at the time of the attack. This information provides a very different picture. In just over half of the incidents (51.7%), no other officers were at the scene with the victim officer. In one-quarter of the incidents (25.2%) one additional officer was with the victim officer at the scene. Two, three, four, and five or more officers were present with the victim in 5.2 percent, 1.4 percent, 0.3 percent, and 3.4 percent of the incidents, respectively. In 12.8 percent of the

incidents, the narratives indicated the presence of other officers, but the numbers were not specified.

In some incidents, officers may be together at the scenes, but not in one another's immediate presence. For instance, officers might be at different locations at a residence. To account for this, the authors of this study determined, for those cases where additional officers were at the scene, the number of officers who were in the immediate vicinity of the victim officer at the time of the attack. That is, these other officers were close enough to intervene and/or to be in immediate danger themselves. This information indicates that nearly one-quarter of the officers (22.7%) who had fellow officers on scene, were virtually alone at the time of their attacks, and that overall, then, 64.0 percent of the officers slain during 1983 through 1992 had no support in their immediate vicinity at the time of their deaths. Further, of the 242 (or 35.9%) of the incidents where more than one officer was at the immediate scene, 23 resulted in multiple officer deaths. In 19 of those 23, all officers at the immediate scene were killed. (In 18 of these incidents two were killed, in one incident three were killed.)

Characteristics of Incidents by Officer Assignment

It is to be expected that the characteristics of incidents in which officers are feloniously killed differ across various categories of law enforcement roles. For instance, it is likely that the particular dangers faced by municipal officers are different than those faced by state officers. Similarly, it is likely that an officer working undercover faces different potentially lethal situations than those faced by foot patrol officers. It is also possible that the characteristics of incidents which lead to officers' deaths vary by the type and location of

the jurisdictions for which the officers work. The authors assessed the characteristics of the fatal incidents in terms of the officers' assignments, the type of agencies for which the officer worked, the region of the country in which the agency was situated, and the size and type of the jurisdiction for which the officer worked.

In this Research in Brief we describe selected findings for the analyses by assignment type and agency type. In the following section, we compare the characteristics of the incidents in which foot patrol officers (n=7), one-officer vehicle patrol officers (n=360), two-officer vehicle patrol officers (n=84), detectives (n=31), officers on special assignment (n=105), undercover officers (n=30), and off-duty officers (96) were slain.

Foot Patrol Officers. All seven of the foot patrol officers were armed, and six of the seven were identifiable as officers when slain. All but one of the incidents had a stage of anticipation, and three of the six for which information was available were killed at entry. Half were inside structures and a majority were in commercial areas. A plurality were intervening in ongoing crimes, primarily responding to the robberies of others. Five were facing more than one opponent when slain and five were slain with handguns. Two were disarmed and killed with their own weapons. Most were without law enforcement assistance and were wearing body armor.

One-Officer Vehicle Patrol Officers. Approximately one-half of the 360 one-person vehicle patrol officers were dispatched to the incidents and in another one-third of the incidents the officers proactively initiated the interactions with the opponents. A relatively small proportion (37.0 percent), compared to other assignments, were killed at entry. Forty-five percent of the incidents occurred in residential areas and a relatively large

proportion of the killings of these officers (56.9%), compared to the other assignments, occurred outside at the side of roads. Most of the officers were intervening in ongoing crimes (33.4%) or issuing citations (21.4%). More of this category of officers (24.6%) than the other groupings were attending to traffic-related incidents. A small proportion (5.2%) were ambushed and three-fourths faced only one opponent at the time of the attacks. As with other categories, these officers were most often killed with handguns (68.6%). Relatively large proportions of these officers were disarmed (23.0%), killed with their own weapons (18.9%), wearing body armor (31.5%), and without immediate help (78.0%).

Two-Officer Vehicle Patrol. The circumstances of the killings of the 84 two-person vehicle patrol officers were similar to the circumstances of the one-person vehicle patrol officer killings except that the two-officer vehicles were more likely to be dispatched (55.0%), more likely to be killed indoors (23.5%), more likely to be intervening in ongoing crimes (42.0%) (and less likely to be issuing citations, 9.9%), more likely to be killed with handguns (81.0%), less likely to be disarmed (14.5%) and killed with their own weapons (11.9%), and much less likely to be without immediate assistance (10.8%).

Detectives. More detectives than patrol officers were not identifiable as officers when attacked. More detectives (63.0%) than any other group were killed at entry. (In just under one-half of these incidents, the detective was executing either a search warrant or an arrest warrant.) More of the attacks against detectives (38.7%) than the other assignment groups occurred during the hours of 9 a.m. and 3 p.m. Their attacks were most likely to occur in residential environments (60.0%) and equal proportions were killed inside structures (36.7%) or by the side of roads (36.7%). More than any of the other assignment categories,

detectives were killed while attempting arrests (32.1%) or while executing search warrants (25.0%). As with undercover officers and special assignment officers, a relatively large proportion of the detectives (30.4%) were killed while conducting law enforcement activities related to drug offenses. A larger proportion of detectives, more than any other group, faced a single opponent at the time of attack. Along with special assignment officers, detectives were more likely than the other categories of officers to be shot with rifles (16.1%) or shotguns (12.9%). Relatively few of the detectives (3.3%) were disarmed and shot with their own weapons (3.2%). Except for the undercover and off-duty officers, detectives were the least likely (12.9%) to be shot while wearing soft body armor. Just over half (55.2%) had law enforcement assistance in the immediate vicinity at the time of the attacks. Consistent with the finding that a large proportion of detectives were shot at entry is the finding that the final actions of many of these officers were to approach suspects (20.7%) or enter buildings or rooms (24.1%).

Special Assignment Officers. The 105 officers on special assignment includes officers working jails, working on special teams, assigned to execute arrest and/or search warrants, and so forth. This group had the highest percentage of unarmed officers, 9.4 percent. They were primarily inside structures and primarily located in residential areas. One-fifth (20.8%) were acting in an arrest capacity at the time of the attack and another one-fifth (19.8%) were executing search warrants. One-fifth of the incidents (21.3%) involved drug-related offenses. In three-fourths (72.7%) of the incidents, the officer was facing a single opponent. All of the opponents knew that their victims were law enforcement officers. Compared to the other groups, officers on special assignment were least likely to

be killed with handguns (57.1%) and most likely to be killed with rifles (19.0%). A relatively large proportion (12.4%) were killed with shotguns. They were not more or less likely than the other groups to be disarmed (18.4%), killed with their own weapons (15.2%), or wearing body armor (32.4%). Two-thirds of the officers on special assignment had immediate assistance at hand when they were attacked. This percentage is second only to two-person vehicle patrol officers. The final action of one-fifth of the officers on special assignment was to enter a building or room. No other final action accounted for a larger proportion of these officers' final actions.

Undercover Officers. All of the slain undercover officers were armed and none were identifiable as law enforcement officers when attacked. These officers were second most likely to have a stage of anticipation and relatively unlikely to be killed at entry. A relatively large proportion (17.2%) of this group was ambushed. As with officers on special assignment, a plurality of undercover officers were slain between the hours of 3 p.m. and 9 p.m. One-third (34.6%) of these officers were killed while inside structures and one-third (30.8%) were killed while roadside. Most were in residential areas and most were working drug-related assignments. The proportion of undercover officers killed during their own robbery victimizations (25.9%) exceeded that even of off-duty officers (19.8%); and a very large proportion of the undercover officers, relative to the other groups, faced more than one opponent when attacked. In only one-half of the incidents, did it appear as if the opponent knew that his victim was a law enforcement officer. None of the slain undercover officers were disarmed and killed with their own weapons. Relatively few (6.7%) were wearing body armor and relatively few had the immediate assistance of other officers when attacked.

The final action of one-fifth (20.0%) of the undercover officers for whom there were data, was talking; another one-fifth (20.0%) were killed immediately upon entering a building or room.

Off-Duty Officers. All but three (95.8%) of the off-duty officers were armed during the incidents which led to their deaths. One-fourth were identifiable as police officers. (For the most part, these identifiable officers were just going to work, returning from work, or working off-duty as security in uniform.) Of all the assignment groups, this group had the lowest proportion of incidents (55.6%) in which there was a stage of anticipation. Consistent with this, these incidents were most likely to involve situations where police action was unanticipated. That is, a situation "walked in" on the officer or the officer "walked in" on it. One-third of the incidents (31.9%) were initiated in this manner, and another one-third (36.3%) were officer initiated. A plurality (47.9%) were killed during the hours of 9 p.m. and 3 a.m. This percentage is higher than any other group. The off-duty killings were not distinctive in terms of occurring inside or outside, but a relatively large proportion (55.7%) of these killings occurred in commercial environments. Two-thirds of the off-duty officers intervened in ongoing crimes and in half (47.9%) of the incidents, the crimes being attended to were robberies. A full 91.2 percent of the robberies in which off-duty officers "intervened" involved personal victimizations of the officers (55.9%) or victimizations of the establishments the officers were visiting (35.3%).

As with undercover officers, one-fifth of the off-duty officers were ambushed. In a vast majority of these situations, the assailants set out to kill the particular officers as a result of some previous interaction with those officers. Half (44.4%) of the off-duty officers faced

more than one opponent, but less than 10 percent of them had immediate assistance at the scene. Not surprisingly, just 4 (4.2%) of the 96 officers slain off-duty were wearing body armor.

Characteristics of Incidents by Agency Type

Various types of agencies have different roles and thus, face different risks which might lead to officers' deaths. Below we compare and contrast the characteristics of the incidents in which officers were feloniously killed across agency types. Specifically, we compare incidents involving municipal (n=368), county (n=189), state (n=78) federal (n=26), and Puerto Rican (n=44) officers. Puerto Rico is maintained as a separate category because its structure does not coincide with any of the other four categories and because its high rate of police killings appeared to differentiate it from the other U.S. territories in which there were only a total of four felonious killings during the 10 year period under study.[1]

Municipal Officers. Three-fourths (73.9%) of the 368 slain municipal officers were front line officers, that is, a large number were on foot (1.4%), one-person vehicle (52.2%), or two-person vehicle (14.1%) patrol. Four percent (3.5%) of the slain municipal officers were chiefs of police. The rest were supervisors. Just under fifteen percent (14.1%) were off-duty. A larger percentage of municipal officers (17.0%) than state (12.9%) or county (10.1%) were not identifiable as law enforcement personnel when slain. All but five

[1]These four killings are a subset of the nine agencies which do not fit into any of the five major categories and are, thus, not included in the comparisons described in this section. In addition to these four territorial agencies, the other agency types not included are three tribal police departments, one school police department, and a regional police department.

(98.6%) of the officers were armed when killed. Forty percent (40.1%) of the slain municipal officers were dispatched to the incidents which led to their deaths; another 29.8 percent proactively initiated the interactions themselves. Eight percent (7.7%) of the slain municipal officers were ambushed, and in four of every ten incidents (39.6%), the officers were "killed at entry," that is, their first interaction with the assailant was the attack.

A plurality of municipal officers (38.4%) were slain while intervening in ongoing crimes. Another 16.0 percent were attempting arrests (though not for ongoing crimes) and another 15.1 percent were investigating suspicious persons or circumstances when slain. The crimes involved in the incidents were primarily robberies (13.0%), domestic disturbances (12.7%), and non-violent offenses other than burglaries and drug crimes (12.7%). Almost thirteen percent (12.7%) were responding to traffic violations. Eighteen of the 39 officers (46.2%) responding to robbery situations were intervening either in their own personal robbery victimizations or in the victimizations of the establishments they were in.

Just over 70 percent (70.4%) of the municipal officers were slain between the hours of 3 p.m. and 3 a.m. Almost forty-percent (38.2%) were roadside. Just under 30 percent (29.0%) were inside of structures and a plurality (45.9%) were in residential areas. Seven out of ten (71.1%) of the municipal officers faced a single opponent when killed. Another 17.6 percent faced two. Three-fourths (72.0%) were shot with handguns and 15.8 percent were killed with their own service weapons. One-third (31.0%) of the officers were wearing body armor when slain.

County Law Enforcement Officers. Like municipal agencies, three-fourths (75.1%) of the slain county officers were front line personnel. However, almost six percent (5.8%)

of the slain county officers were the sheriffs of their jurisdictions. More of the slain county officers (89.9%), than the other categories of officers, were identifiable as law enforcement officers when slain. A relatively large percentage of county officers (4.5%) were unarmed at the time of the attacks against them.

Most (53.4%) of the county officers were on one-person vehicle patrol when slain. One-fourth (22.2%) of these officers were on special assignment, for instance, working at jail facilities. One-third (35.0%) of the officers were dispatched to the incidents which led to their deaths, and another one-third (28.9%) were on assignment. As with the municipal officers, four of every ten (42.7%) slain county officers were "killed at entry," that is, their first interactions with the assailants were the attacks. Over one-fourth (29.1%) of the county officers were intervening in ongoing crimes at the time of their deaths and another one-fifth (19.4%) were attempting arrests in situations where the crimes were not ongoing. Non-violent crimes other than drug offenses or burglaries accounted for 15.4 percent of the incidents. Non-crime assistance, other than traffic, accounted for 12.6 percent of the incidents. Between 8 and 13 percent of the incidents involved the crime of robbery (12.6%), drug offenses (10.5), or traffic offenses (8.4%). In 8 of the 18 incidents which involved the crime of robbery, the officers were intervening either in their own personal robbery victimizations (5 incidents) or in the robbery victimizations of the establishments they were in (3 incidents). Two-thirds (61.4%) of the incidents involving county officers occurred during the hours of 3 p.m. and 3 a.m. One-third (30.6%) occurred inside structures and forty-three percent (43.0%) occurred roadside. A relatively large proportion (47.6%) of

county officers were killed in residential areas. Also, more county officers (12.7%) than any other agency type, were killed in government facilities, for instance, inside jails.

More county officers than any other type (75.0%), were facing a single opponent when slain. County officers were more likely than municipal, state, and Puerto Rican officers to be killed with rifles (18.0%) and more likely than other groups to be killed with shotguns (11.1%). A relatively large proportion of county officers (21.2%) were disarmed during the attacks, and 16.9% percent were killed with their own weapons. A smaller proportion (24.9%) of county officers than municipal (31.0%) and state officers (27.3%) were wearing body armor when killed.

State Officers. Three-fourths (76.9%) of the slain state officers were front line officers (as opposed to supervisors) and ninety-nine percent (98.6%) were armed. More of the state officers (70.5%) than any other type of officers were on one-person vehicle patrol at the time they were attacked. Another 12.8 percent were on special assignment. Incidents involving state officers were more likely than incidents involving other types of officers to have a stage of anticipation (96.2%). A relatively large proportion (59.5%) of the incidents involving state officers were officer initiated; relatively few were dispatched (13.5%). One-third of these officers (35.8%) were killed at entry and close to half of the incidents involved the issuance of traffic citations (49.3%). A relatively large percentage (42.3%) of state officers were killed between 3 p.m. and 9 p.m. and a relatively large proportion (68.4%) were along rural roadsides when slain. In one-third (30.7%) of the incidents the state officers faced more than one opponent when slain.

State officers were somewhat more likely than other types of officers to be slain with sharp objects (3.8%). They were less likely than municipal and county officers, and more likely than federal and Puerto Rican officers, to be killed with their own service weapons (14.1%). One fourth (28.2%) of the state officers who were slain were wearing body armor. A larger proportion of state officers than any other group (18.5%) were approaching the suspect as their final act before the attack.

Federal Officers. Ninety-six percent (96.2%) of the slain federal officers were front line officers; the other 3.8 percent were supervisors. A far greater proportion of federal officers (59.1%) than municipal, county or state officers were not identifiable as law enforcement personnel when slain. Many of the Puerto Rico officers, too, were not identifiable as officers, but primarily as a result of being off duty when slain. In contrast, only 7.7 percent of the slain federal officers were off-duty when attacked; instead 50.0 percent were on special assignment, and 26.9 percent were working undercover when slain. Although a large percentage of incidents involving federal officers (16.7%) were without a stage of anticipation, a relatively small percentage of federal officers were shot at entry. In terms of the activity in which the officers were involved at the time of attack, relatively large proportions of federal officers were on undercover assignments (26.1%) or executing search warrants (13.0%). Many more of these incidents, compared to those of the other officer groups, involved drug offenses (40.9%). Federal officers, more than any other group, were killed during their own robbery victimizations. Five of the 24 (20.8%) slain federal officers were slain while intervening in their own robbery victimizations. Three of these officers were on duty at the time of their attacks. None of the slain federal officers was ambushed.

Federal officers were least likely to be slain in residential areas (11.1%) and were least likely to be facing a single opponent (37.5%) when slain. In four of the incidents (21.1% of the cases for which this information was available) in which a federal officer was slain, the opponents did not know their victims were law enforcement officers. All four of these officers were killed during their own robbery victimizations. A relatively large proportion (23.1%) of federal officers were killed with rifles. The final action of 22.7 percent of the slain federal officers was talking; the final action of 13.6 percent was identifying himself as an FBI agent.

Puerto Rican Officers. Most striking about the deaths of Puerto Rican officers is the proportion of them who were killed off duty and the number who were ambushed. Forty-one percent (40.9%) of the Puerto Rican officers were killed while off duty, compared to no more than 15 percent of the other officer groups. Half of the officers killed off-duty were killed intervening in either their own robbery victimizations or in the robberies of establishments which they were in. Overall, 23.3 percent of the slain Puerto Rican officers were killed during personal robberies or during the robberies of the establishments they were in. Twenty-one percent (21.4%) were ambushed, compared to zero to 8 percent of the other officer groups.

A relatively large proportion (25.0%) of Puerto Rican officers were killed while on two-person vehicle patrol; 33.3 percent of the incidents had no anticipation stage. In nearly one-fourth (23.8%) of the incidents no police action was anticipated on the part of the officer when the event occurred. That is, the officer "walked in" on a crime or had a crime "walk in" on him. Forty-five percent (44.7%) of the Puerto Rican officers—more than any other

group—were killed at entry: the officer's first interaction with the opponent was the attack. In 55.6 percent of the incidents, the officers were intervening in ongoing crimes. This percentage, too, was larger than for any other officer group. Only one officer (2.3%) was wearing body armor.

Conclusion

Police officers are feloniously killed while on the job at a rate second only to taxi drivers. Despite the critical importance of the issue of the killings of law enforcement officers, relatively little research has been conducted to explore it. With support from the National Institute of Justice, the authors of this study conducted a comprehensive analysis of all aspects of that critical topic. This "Research in Brief" report provides a summary of two parts of that study: (1) the analysis of trends and variations in the number and rates of felonious killings across agencies and agency types, and (2) the examination of the particular circumstances of incidents in which such killings occurred.

Our analysis of overall trends indicates that, in general, the number and rate of felonious killings of law enforcement officers decreased notably between 1972 and 1984, and have remained generally stable since. The greatest reduction in rates of felonious killings of officers have occurred among the smallest cities (less than 25,000 persons) and rural counties. Although the rates of killings across agency types are remarkably similar, it is noteworthy that, among the largest agencies of all types, six of the ten highest rates were found among state agencies, three among municipal police departments, and one by a county sheriffs' agency. There is considerable variation among particular agencies in terms of the

rates at which their officers are feloniously killed and the changes in those rates over the last several years. Regression analysis was used to attempt to explain the variation in rates among the 56 largest municipal agencies. The significant predictors varied notably across the two time periods studied: 1977 to 1984 and 1985 to 1992. Only one predictor, the violent crime rate, was significantly (and positively) related to the felonious killing rate during both periods.

From our in-depth analyses of incidents, we learned that for 40 percent of the slain officers, their first interaction with the opponent was the lethal attack itself. Incident characteristics vary by assignment type and agency type. For instance, more detectives than any other group were killed at entry. One-fourth of the undercover officers were killed during their own robbery victimization. More of the state officers than any other type of officer were approaching the suspect as their final act before the attack. Federal officers were most likely to be involved in a drug-enforcement activity at the time of their deaths and four out of 10 Puerto Rican officers were off duty when slain.

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