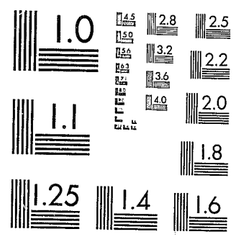

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Crime and Punishment in Brooklyn: Two Statistical Profiles

ABSTRACT

We consider some quantitative measures of the suffering caused by crime for both its victims and its perpetrators. Using data from Brooklyn, New York, for the mid-1970's, we make various calculations about the crimes residential burglary and homicide. We discuss some possible uses and definite limitations of a data analysis of this kind.

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I. Introduction

Imprisonment is meant both to incapacitate and rehabilitate those who have committed crimes and to help deter those who have not. But it has another purpose related solely to the concept of justice. There is a widespread if not universal feeling that those who have brought misery to others should suffer themselves and that, while the formulation "an eye for an eye" is not perfectly suitable, there should nonetheless be some monotonic relationship between the harshness of crimes and their punishments.

Beyond such abstract maxims, however, it is not at all clear what would constitute an appropriate prison sentence if justice were the criterion for sentencing. How does one meaningfully compare the loss of freedom for the robber with the loss of property and peace of mind of his victim? The intractability of the problem would lead one to turn away from it were it not that judgements on such matters must be made every day.

In the absence of any clear theory on the "just" punishment of criminals, an empirical investigation can be useful. In this paper, we examine some recent data from Brooklyn, New York that helps illuminate the suffering caused by crime to both its victims and its perpetrators. We focus on residential burglary, arguably the most serious property crime and homicide, clearly the most serious violent crime. It is not our aim to describe the implications of the data towards sound public policy. We have the more modest hope that, in considering whether the punishment policies prevailing in Brooklyn are just, readers might crystallize their views on which policies would be.

We begin our efforts in the next section, where we explain why we chose Brooklyn as a source of data. In Section II, we discuss, both for victims and criminals, those consequences of burglary that most lend themselves to quantification. We do the same for homicide in Section III, and contrast our findings about the two crimes in Section IV. In Section V, we discuss the relationship of this work to the well-known Sellin-Wolfgang Index on the relative seriousness of different crimes.

I. Why Brooklyn?

With 2.4 million people, Brooklyn is, as its boosters proclaim, the fourth largest city in America. It is divided into 23 police precincts, most of which are quite homogeneous in terms of personal income and demographic makeup. On the other hand, considerable diversity arises across the different precincts. Thus, from our viewpoint, Brooklyn can be thought of as 23 contiguous cities with populations near 100,000, all of them subject to the same criminal justice system.

For data analysis, the circumstances just cited are highly desirable. Brooklyn provides a natural setting for various cross-sectional studies and,since all statistics are processed through the New York City Police Department, problems about the comparability of data are minimized. Furthermore, because Brooklyn, unlike Manhattan, is primarily a residential borough, large numbers of tourists and suburban workers do not artificially swell its population. There is the further advantage that unusually detailed statistics about each precinct are available because of earlier research by the New York Times and New York City Rand Institute [1].

It would strain credibility to claim that Brooklyn is typical of America. But for the particular purposes of this exercise, the borough's idiosyncracies may not be especially relevant.

II Residential Burglary in Brooklyn

i) The Victims

By the "victims" of burglary*, we refer primarily to those whose property is actually stolen by burglars. However, we also include those who, beecause of their fear of burglary, voluntarily relinquish some of their income to buy insurance against it. It has been argued that this definition of "victim" is too restrictive, that really all of society is victimized by burglary because the labor and resources consumed in coping with it would, in its absence, be used more productively. But given the chronic unemployment in the country, the validity of this viewpoint is not self-evident.

Burglary victims suffer both psychologically and materially†; the latter suffering is clearly the easier to describe. An obvious and familiar measure of the aggregate loss to burglars is the total dollar value of the goods stolen. But this measure ignores the fact that a $1000 loss would be more painful in a household with an annual income of $10,000 than one with an income of $100,000. If burglary, like most other crimes, is particularly common in poorer areas, simple dollar figures might tend to understate the economic deprivation burglary

* In the remainder of this paper, we will use the word "burglary" to refer to residential (as opposed to commercial) burglary.

† Burglary is generally defined so as to preclude violence. If people are home when burglars arrive, the crime would probably be classified as robbery.

victims face. It is therefore desirable to "normalize" losses for the ability of their victims to sustain them.

Maltz [2] has proposed that the economic hardship caused by a given burglary be measured by the time it would take the victim, at his current rate of earnings, to recoup his losses. While this statistic is not without problems, it provides a natural way of correlating the victim's loss with his income. The total economic cost of burglary could be indicated by the amount of time its victims work collectively to replace stolen goods. Table 1 presents information that allows the calculation of these and other statistics for Brooklyn in 1977.

The 1977 precinct-by-precinct income statistics in Table 1 are based on 1970 figures compiled by the NYC-Rand Institute, adjusted for inflation from data from the Bureau of Labor Statistics.* The average-loss-per-burglary estimates are the ratios of total unrecovered burglary losses to number of residential burglaries, both as recorded by the New York City Police Department. The "typical time spent recouping losses" column is simply the second column divided by the first. (i.e. average loss/median hourly income.) This is not the same as the average time recouping, although, given the modest variations of income within precincts, the difference is presumably small. Dividing the number of reported offenses by the population of each precinct (1975 estimates) yielded the burglary rates listed in the fourth column; multiplying the third and fourth columns yielded the fifth, which shows the

* The correction factor was 1.64 in precincts where the 1970 median income per hour exceeded $5, 1.75 where it was below $4, and 1.70 in other precincts. These factors, which are approximations, are based on B.L.S. data that show that in NYC, salaries of blue collar and unskilled workers grew faster than inflation in the 1970's, while the reverse was true for skilled, white-collar workers.

TABLE 1: Residential Burglary in Brooklyn, 1977

Precinct	Median Income per Hour ($)	Average Loss Per Burglary($)	Typical Time Spent Recouping Losses (hours)	Number of Burglaries Per 1000 Residents	Time Loss Per Resident (Hours)
60	7.32	898	123	17	2.1
61	8.75	1829	209	14	2.9
62	7.66	1484	194	11	2.1
63	9.73	1842	189	14	2.6
66	7.34	1337	182	13	2.4
67	7.90	891	113	27	3.1
68	8.05	1272	158	10	1.6
69	8.37	1209	144	12	1.7
70	8.81	1304	148	22	3.3
71	6.92	773	112	25	2.8
72	6.79	777	114	17	1.9
73	4.47	461	103	11	1.1
75	6.08	486	80	15	1.2
76	6.11	394	64	16	1.0
77	5.49	668	122	25	3.1
78	5.79	597	103	24	2.5
79	4.95	598	121	13	1.6
81	4.95	387	78	16	1.3
83	5.32	660	124	18	2.2
84	7.68	723	94	14	1.3
88	5.58	451	81	20	1.6
90	4.78	782	164	13	2.1
94	6.79	905	133	11	1.5
Entire Borough	6.66	951	142	16	2.2

"time lost per resident" (rather than per victim) in recovering from burglaries.

It is unsurprising that, as Table 1 makes clear, burglary losses increase with the incomes of their victims. But it is noteworthy that the losses grow faster than proportionally, as evidenced by the larger time to recoup losses among middle class victims than poor ones* Reported rates of burglary were marginally higher in the lower income precincts than the wealthier ones. The "time lost per resident" statistics, which consider both the frequency and severity of the burglaries, tend to grow with affluence: the 11 precincts with the highest median incomes sustained an average loss per resident of 2.3 hours; the corresponding statistic for the 11 poorest precincts is 1.7 hours. Thus, burglary in Brooklyn seems to take its highest toll among the borough's middle class.

The borough-wide statistics at the bottom of Table 1 are weighted averages of those from the precincts; the weighting factor is number of of burglaries for the second and third data columns and population for the others. The typical burglary victim in Brooklyn can recover his losses in roughly six days worth of (continuous) work. In 1977 there was one burglary in Brooklyn per 22 households. At an average of 2.2 hours per resident, the 2.4 million citizens of Brooklyn would have to spend six centuries at work to earn the amount taken from them by burglars.

* Perhaps this reflects the fact that the proportion of income spent on durable goods is higher among middle-class than poor people.

We should acknowledge and address some possible problems with an aggregate statistic like the "600 years" estimate just cited.

(1) Not all burglary victims really will replace their stolen property.

This is true, but the working time it would take them to make up their losses is probably close to the time they worked to buy the goods in the first place, adjusted through depreciation for the use they got from them.

(2) The hours at work spent recouping losses are spread out over a longer period, during which the victims must "do without".

Because of bank accounts and credit cards, this contention seems implausible, especially for the middle class residents who suffer the most from burglary.

(3) Some victims have burglary insurance.

The effect of such insurance is simply to spread the cost of theft over a larger set of "victims." In terms of aggregate cost, it does not matter whether one person works 140 hours to recoup losses or 140 people work one hour to reimburse him.

(4) Some victims are on welfare.

In that case, the economic cost of the burglary (as opposed to the anguish) is borne by the taxpayers. Actually, the proper rate of earnings for calculations about these cases should be based not on welfare payments but on the somewhat higher incomes of those who pay taxes. But with burglary losses highest in middle-class areas, the imperfect calculations about victims on welfare are unlikely to have seriously distorted the overall results.

(5) Police data about burglary are not perfect.

LEAA victimization surveys for New York City suggest that roughly 1/3 of all burglaries are not reported to police. One suspects, however, that unreported burglaries tend to be less serious than those that are reported. It is also conceivable that some reports of burglaries are exaggerated or even fabricated for insurance purposes. However, the Brooklyn Burglary Squad suggested to us that in Booklyn, with relatively few homeowners, the substantial majority of burglary victims are not insured.

The estimate that 600 years are spent recouping losses is not offered as demonstrably more accurate than, say, 500 or 700. But it seems certainly superior to 60 or 6000, and thus a reliable measure of at least the order of magnitude of the quantity of interest.

The psychological costs of burglary are no less real than the economic ones. But they are clearly far less amenable to quantitative description. We will say nothing more about them now, but will discuss them later in conjunction with the aims of this paper.

ii) The Perpetrators

In recent years fewer than 10% of the residential burglaries in Brooklyn have been cleared by arrest, and fewer than 10% of the arrests have led to convictions for burglary. The lengths of the sentences actually served among those convicted are suggested by Table 2.

Table 2. Estimated Prison Terms Served by Those Convicted of 1977 Burglaries in Brooklyn

Range (Years)	Per Cent in Range
0	.378
0^+ - 1	.261
1 - 1.5	.061
1.5 - 2	.150
2 - 3	.116
3 - 4	.014
4 - 5	.007
5 - 8	0
8 - 9	.007
9 - 20	0
20^+	.007

NOTE: For the approximations used in preparing this table, see text.

Table 2 approximates the prison terms served by those who were convicted for 1977 burglaries in Brooklyn. Because of data limitations, the percentages of sentences in the ranges 0 and 0^+ - 1 are figures for all of New York City for 1978. (We are assuming a one-year time lag between burglaries in 1977 and the convictions resulting from them.) The estimates about sentences above one year follow the actual distribution of time served by those who had been convicted in Brooklyn and were released from New York State prisons in 1977.*

Unfortunately, neither the New York State penal code nor state prison statistics make a distinction between residential and commercial burglary. We do not know whether, in practice, the sentences for burglary depend on whether the scene of the crime was a home or a business. (Statistical experts in New York State's Department of Corrections told us that they themselves did not know.) Under the working hypothesis that sentence lengths are similarly distributed for both kinds of burglars, we can use Table 2 to estimate that, collectively, those who in 1977 committed burglary in Brooklyn spent roughly 300 years in prison expiating their crimes.

Of course prison sentences often depend not only on the defendant's most recent crime but on his entire record. Thus the statistics in Table 2 include some belated punishment for earlier offenses. On the other hand, some of those convicted but not sentenced in 1977 will eventually get longer sentences because of those convictions. If, as seems plausible, these two effects roughly cancel each other, they do not des-

*SOURCE:

troy the validity of the "300 years" estimate.

Both for victims and perpetrators, we have now expressed in units of time some of the adverse consequences of residential burglary. Inevitably we are tempted to compare the figures. In 1977, in the aggregate, the residents of Brooklyn sustained 600 years of punishment at the hands of thieves; the punishment for the "burglar class" was about 300 years. But while the typical burglarized household spent 140 hours recouping its losses, the average prison sentence among those convicted was about 8000 hours. The disparity in results of these two comparisons reflects the fact that only about 1% of the residential burglaries ended in convictions; while those convicted "paid" for their crimes, not very many were convicted.*

It would be simplistic to move from the statistics 600 and 300 to the statement that "citizens suffer twice as much from burglary as the burglars." An hour spent in prison is presumably more unnerving than an hour spent at work even when one is, in effect, not being paid. And our statistics say notning of the psychological suffering of the victims, or the effects of the stigma tied to conviction for a felony. But it is hyperbole to suggest that, because these statistics do not say everything about burglary, they are devoid of any value.

* We are grateful to MICHAEL MALTZ for reminding us to make this important distinction.

III. Homicide In Brooklyn

The number of criminal homicides in Brooklyn averaged exactly 500 per year from 1972 - 75; the figures for more recent years are apparently very similar. If this level of killing persists 1 of every 69 Brooklynites born in the 1970's will ultimately die of homicide. Had they not been slain, the victims would have been expected to live an average of 32 additional years. Thus, in each recent year, killers have deprived Brooklyn residents of roughly 500 x 32 = 16,000 person-years of life.

Unlike burglary, homicide in Brooklyn does not particularly victimize the borough's largely white middle-class. In a typical year 300 of the murder victims were black, 90 Puerto Rican and 110 white; the race-specific lifetime victimization risks analogous to the 1 in 69 figure above are 1 in 30, 1 in 41, and 1 in 196, respectively. The average shortening of life among victims was about 31 years for blacks and Puerto Ricans and 34 years for whites. (Actually, the average white victim was 3 years older than his minority counterpart, but his original life expectancy was 6 years greater.) Approximately 80% of the homicide victims were male. In no respects are these statistics unusual among those of the other larger American cities.

Since New York State has no death penalty, incarceration is its only official punishment for homicide. Table 3 estimates the prison terms actually served by those individuals convicted for recent homicides in Brooklyn.

those committed to prison follows the actual distribution for Brooklyn homicide convicts released in 1976.* One reason these sentences are so short is that, in the mid-1970's, roughly 80% of the homicide defendants in New York City were allowed to plead guilty to a lesser charge to avoid a jury trial on their original charges.** (See [3].) Of the 20% who did not engage in such plea-bargaining, only about 1/3 were convicted of anything. This sentencing pattern is somewhat similar to one Zimring, Eigen and O'Malley [4] observed in a recent study of homicide punishments in Philadelphia.

In recent years approximately 65% of the killings in Brooklyn have led to the filing of homicide charges; the average number indicted in such filings was 1.2 per case; 87% of those indicted were found guilty of something, though more often manslaughter than murder. These statistics, coupled with Brooklyn's annual homicide toll and Table 3's estimate that the average prison term per convict is 2.4 years, lead to the approximation that, each year, Brooklyn killers spend a total of 800 person-years in prison because of their crimes. This figure of 800 is 5% of the estimated 16,000 years of life lost each year by the victims of Brooklyn killers. Since about 280 of each year's Brooklyn killings result in conviction(s), the average prison term per "solved" homicide is about 800/280 = 2.8 years.

These statistics about punishment have the limitation that they ignore specific details about individual killings. Mitigating circumstances ranging from self-defense to insanity would, to most people, sharply reduce the correspondence between proper punishment and the harm the victim suffered. But of those Brooklyn homicide convicts freed in 1976, fewer than 5% had served 10 or more years in prison. And of those sentenced in 1974 who were in the Times survey [3], only 9% received maximum sentences above 10 years. (Most convicts are eligible for parole after serving 1/3 their maximum sentences.) Thus, to believe that extenuating circumstances had a substantial effect on these findings, one must define "extenuating" broadly enough to include the overwhelming majority of solved Brooklyn homicides.

IV. A Comparison of Findings

It is interesting to compare the data for the two crimes burglary and homicde. The total annual time losses we have estimated for these crimes are 600 years for Brooklyn burglary victims, 300 years for burglars, 16,000 years for homicide victims, and 800 years for killers. For each hour that he "takes" from his victim, the average convicted burglar from Brooklyn spends about 63 hours in prison; the comparable figure for the homicide convict is 6 minutes. If we consider unsolved as well as solved crimes then for each hour lost per victims, burglars spend 30 minutes in prison and killers 3. Especially if one believes that the loss of an hour of life itself is worse than working an hour without pay, one is drawn towards the conclusion that, relative to what they have done, Brooklyn's burglars are punished more harshly than its killers.

This sentencing policy might be defended on the premise that, at a time when prison space is scarce, concern for deterrence should dominate decisions about how to allocate it. Homicide is often described as the "least preventable" felony, and the many killers whose offenses are "crimes of passion" are not, in the opinion of experts, especially prone to kill again.

** In 1978, the New York State Legislature passed a law aimed at reducing plea bargaining in homicide cases. Whether the measure will actually affect sentence lengths is not yet clear.

**SOURCE:

Burglary, by contrast, is a somewhat rational crime whose levels might plausibly be related to the punishment levels it entails. This argument is well worthy of consideration but, since it is unrelated to sentencing based on "justice," we will not discuss it further here.

V. Some Concluding Remarks

One's assessment of the "just" punishment for a given crime depends on both his perception of the consequences of the crime and some moral judgement about the evil of these consequences. Associated with a crime are material, physical, and psychological effects, most directly on the victim(s) but also on surrounding people. Some of these effects are amenable to quantitative description; others are not.

We have attempted here, in a particular setting, to provide data-based information about certain consequences of certain crimes. Such information is only one component of the analysis from which sound judgements about punishment arise. Moreover, the importance of this component is sometimes less than one might at first think. Few would argue, for example, that because its victim had relatively few years of remaining life, the killing of a 60 year-old is far less heinous than the killing of a younger person. Sometimes the evil inherent in a crime so transcends its particular effects as to diminish the relevance of carefully describing them.

Yet the possible value of this undertaking is suggested by considering a far more ambitious one. Sellin and Wolfgang [5] administered a questionnaire to both criminal justice professionals and nonprofessionals that asked them to take into account all relevant factors and then rate numerically the seriousness of various crimes. The results were the

basis of the well-known Sellin-Wolfgang Crime Seriousness Index. In this index, a homicide is given a weight of 26 while a burglary between $500 and $4000 (in 1979 dollars) has a weight of 3.*

Our findings do not generate a serious alternative to the Sellin-Wolfgang scale, but they are of some help in assessing it. We have indicated that, in units of time, a typical homicide costs its victim 2000 times as much as a typical burglary (32 years vs. 142 hours). Consideration of the different forms of time loss (shortened life vs. uncompensated work) would lead most people to raise the relative seriousness of the killing. Furthermore, the grief and shock that afflicts the relatives and friends of homicide victims seems considerably more intense than the psychological suffering of burglarized households. In light of these observations, it is not clear why the "crime seriousness" ratio for homicide and burglary was only about 9 in the Sellin-Wolfgang index.

We have no idea whether, provided with data of the kind presented here, those who took part in the Sellin-Wolfgang survey would have altered their assessments. But such statistics reduce the danger that a gross misperception of the effects of a crime will distort one's judgements about its gravity. More generally, the statistics can help structure one's thinking about how to compare crimes that initially seem highly dissimilar. Indeed, it could be argued that they provide a natural starting point for such comparisons although, as subtle and nonquantifiable issues arise, intial assessments might quite properly be drastically modified.

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* The weight increases to 4 if the premises were forcibly entered.

In short, data analyses like those described here cannot answer questions about what punishments are"just." But they might increase the chance that the answers we do reach will reflect more our moral values than the failures of our intuitions.

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