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# CRIMINOLOGY

## DECISIONS AND DATA: THE TRANSFORMATION OF ROBBERY INCIDENTS INTO OFFICIAL ROBBERY STATISTICS\*

RICHARD BLOCK\*\* AND CAROLYN R. BLOCK\*\*\*

### INTRODUCTION

That not all criminal incidents become official crime statistics is a common assertion. Robbery is no exception to this rule. For example, for a Chicago robbery incident to become an official robbery statistic, the victim or some other citizen must first report the incident to the police. Next, the patrolman who investigates the incident must write an initial report identifying it, first as a crime and second, as a robbery and not some other crime. Finally, the detective division must decide that the evidence shows that the incident was in fact a robbery. If the division decides that it was another crime, or not a crime at all, the incident is "unfounded." Otherwise, the incident becomes one of the robberies known to the police that are tabulated as part of the Uniform Crime Reports.

Two generally acknowledged sources of data on criminal incidents and official crimes in the United States, commonly seen as competing with one another, are the Uniform Crime Reports (UCR), and victimization surveys, especially the National Crime Panel (NCP). The UCR has, for many years, recorded crimes known to the police. The NCP was established, in part, to estimate the incidence of crime. The NCP and the UCR are not competitive measures of the same data. They mea-

sure different phenomena, data sets collected at different stages of the transformation of a criminal incident into an official crime statistic. Both the NCP and the UCR are subject to error, primarily errors of estimation for the NCP and errors of measurement for the UCR. Even if both were completely error-free, however, they would not yield the same figures, because they measure different things. Victimization surveys estimate the number of criminal incidents and the number of incidents reported to the police. Police UCR statistics tabulate crimes known to the police, those incidents which were initially investigated and which were not unfounded.

Figure 1 diagrams four of the data sets that result from the series of decisions that transform a robbery incident into an official robbery statistic: all robbery incidents occurring, all robbery incidents of which the police are notified, all robbery incidents which the police investigate and initially record as robberies, and all robberies known to the police. Data may be gathered at other stages of the transformation process, but this article will discuss only these four.

Between the four data sets are three decision points<sup>1</sup> where citizens and police decide either to eliminate a case from the system or to allow it to continue to the next step. Each data set includes those cases that have survived all the previous decision points. The intermediate transition probabilities measure the probability of surviving from one step to the next. The overall transition probability measures the probability of surviving from a robbery incident to a robbery statistic. The first decision point, between Data Set 1 and Data Set 2, primarily includes victims' decisions; the second and third decision points are primarily police decisions.

Victim survey data provide estimates for the number of cases in Data Set 1 and Data Set 2 and the characteristics of those cases. The number of

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<sup>1</sup> See H. RAIFFA, *DECISION ANALYSIS* 10-14 (1968).

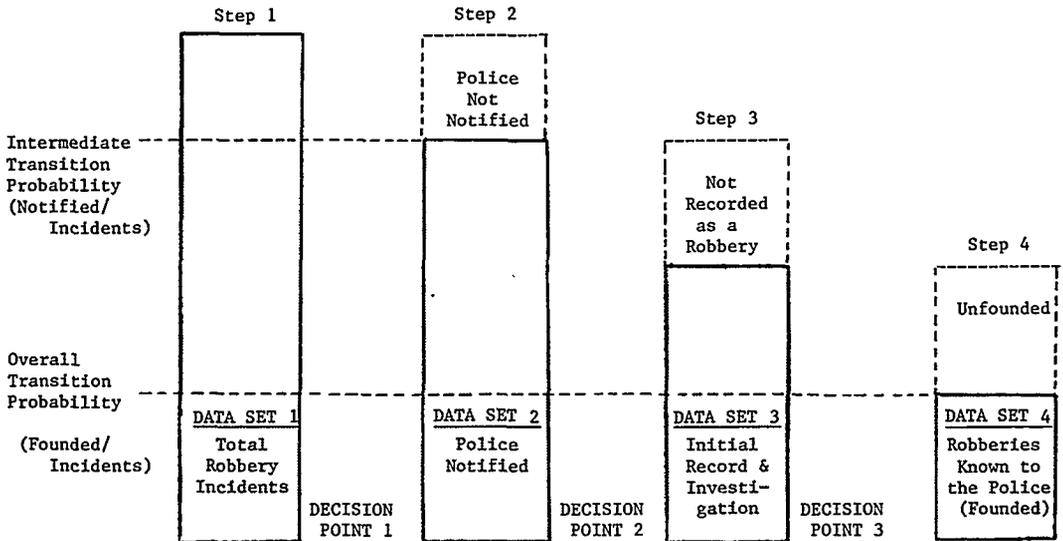


FIGURE 1  
DECISIONS AND DATA SCHEMATIC DIAGRAM OF THE TRANSFORMATION OF ROBBERY INCIDENTS INTO  
OFFICIAL ROBBERY STATISTICS

cases in Data Set 3 and Data Set 4 and the characteristics of those cases may be tabulated from police records and UCR statistics. However, researchers and public administrators often use police or UCR data to draw conclusions about criminal incidents, especially when victim survey data are not available. What kind of errors, if any, result when data from a later stage of the decision process is used to infer the characteristics of an earlier stage?

We can assume that a maximum number of cases is passed on at each decision point. Because each decisionmaker has limited time, money, and other resources, some cases are eliminated from the system. Are these cases eliminated randomly, or are certain types of cases more likely to be eliminated than others? By comparing the characteristics of a later data set and an earlier data set, we can infer whether the decisions that produced the later data set were random, or whether they were based on characteristics of the victim and offender, or on characteristics of the robbery incident itself. Non-random decisions will produce data at a later stage of the decision process that are systematically different from data at an earlier stage. Not only will the total numbers be fewer, but the characteristics of the data will also be different. Therefore, conclusions based on a sample of data gathered at

a later stage would not necessarily apply to an earlier stage.

This article has two goals. First, it illustrates the effect of citizen and police decisions on the characteristics of the data at early and later stages of the transformation process. Second, it compares citizen and police decisions. As a result of these cumulative decisions, robbery data at a later step of the transformation process are systematically different from robbery data at an earlier step. The comparison of data gathered at later and earlier stages of the process can yield insights concerning the making of decisions by citizens and police.

#### DESIGN AND METHODS

##### THE DIFFICULTY OF COMPARING DATA SETS

Few research studies have followed a criminal incident from occurrence to official statistic.<sup>2</sup> The

<sup>2</sup> Some studies have investigated citizen and police decisions in reporting crimes. For example, Block analyzed the decision of the victim or the victim's representative to notify the police. For a national sample of 2,000 victims, Block found that, in general, the decision to notify the police of crimes of personal violence was related to variables such as the relationship between the victim and the offender and the seriousness of the crime, rather than to individual characteristics (age, sex, race, social class) of either the victim or the offender. Block, *Why*

dearth of studies is due not only to the hidden nature of the decisions, but also to the extreme methodological difficulty of the research. The only such study yet attempted, by Schneider,<sup>3</sup> is noteworthy for its results and for its demonstration of the difficulty of the research method. She did a forward record check of a sample of four hundred Index Crimes occurring in Portland in which victims reported that the police were notified, to determine the final police disposition of each case. This required an exhaustive search of police records, for both the particular Index Crime and for all its possible reclassifications, a costly process that took many hours per case.<sup>4</sup> She determined that 53% of Index Crime incidents were ultimately founded as a crime, either as the crime initially reported or another crime.<sup>5</sup>

Other studies have used reverse record checks, in which a sample of founded crimes is traced back to a victimization survey. This method may be appropriate to study the validity of victim surveys, but it is not appropriate for the study of decision points. It only represents the final outcome of the decision tree, the number of robberies known to the police in Figure 1, ignores all the cases which were eliminated at each previous decision point, and does not explain the cases where positive decisions were made, because they cannot be com-

pared to the cases where negative decisions were made. Thus, the forward record check which does provide information about negative decisions, is the appropriate method for the study of decision points.

The forward check, however, is expensive and time-consuming, as Schneider discovered. Therefore, researchers have approximated forward record check data by comparing victimization survey samples to police records. This secondary analysis of available data has a number of methodological problems.<sup>6</sup> Previous attempts to compare victimization survey data and police data as reported in the UCR are invalid for three reasons. First, the definition of a case differs. Victim surveys estimate victimizations. Police records report incidents. An incident may have more than one victim. Data with incident estimates are available on computer tape for the National Crime Surveys, but NCS published reports do not use incident estimates. Second, the geographical areas of the data sets differ. Victimization surveys estimate victimizations occurring to residents of an area, regardless of where the incident occurred, but not incidents occurring to nonresidents when they were in the area. Police reports include incidents occurring in the area, to residents and nonresidents alike. Third, the counting of commercial versus noncommercial cases differs. Police reports count both commercial and noncommercial crimes in the totals of crimes reported to the police. The National Crime Surveys have two subsurveys, commercial and household. The two NCS data sets are collected and reported separately. They are not completely comparable to each other, and are not comparable to police data.

The study of decision points in the transformation of an incident into a recorded crime is thus a methodological dilemma. Forward record checks are expensive and time-consuming, but the faster and less costly alternative method of secondary analysis has pitfalls that, if not overcome, render it invalid. This article employs secondary analysis of victimization survey and police report data for robberies in Chicago in 1974-75, but systematically confronts each of the methodological threats to validity and attempts to overcome them.

Secondary analysis of available data can provide the answers to some questions more quickly and cheaply than collecting individual case data with a forward record check. There are limits to the analysis that can be performed with available data. We will argue that the questions posed by this

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*Notify the Police: The Victim's Decision to Notify the Police of an Assault*, 11 CRIMINOLOGY 555 (1974). Skogan found the same result in national and city victim surveys. Skogan, *Crime and Crime Rates in SAMPLE SURVEYS OF THE VICTIMS OF CRIME* 105 (W. Skogan ed. 1976). Black studied the police decision to write an initial report of certain criminal incidents where the complainant expressed a clear preference for police action and the complainant and suspect were strangers to one another, where the complainant was very deferential toward the police as opposed to being merely civil, and where a deferential complainant who preferred action was white-collar rather than blue-collar. The police wrote a report in 72% of the felony incidents. Black, *Production of Crime Rates*, 35 AM. SOC. REV. 733 (1970); see also Black, *The Social Organization of Arrest*, 23 STAN. L. REV. 1087 (1971).

<sup>3</sup> A. Schneider, *Methodological Problems in Victim Surveys and their Implications for Research in Victimology* (Institute of Policy Analysis 1980) [hereinafter cited as *Victim Surveys*]; A. Schneider, *The Portland Forward Record Check of Crime Victims: Final Report 8* (Oregon Research Institute 1977).

<sup>4</sup> Personal communication with Anne Schneider (October 1977).

<sup>5</sup> Schneider estimates that, "an additional 15 percent had not been located because of methodological problems or because of the importance of protecting victim confidentiality." A. Schneider, *Victim Surveys*, *supra* note 3, at 10.

<sup>6</sup> See Maltz, *Crime Statistics: A Mathematical Perspective*, 3 J. CRIM. JUST. 177 (1975); Skogan, *supra* note 2.

paper can be answered within acceptable limits of validity, using available data.

#### DATA

The forward record check method measures the number of cases at each step in Figure 1. The study begins with a certain number of cases. Some move forward at each decision point, and others drop out. Percentages calculated with these figures refer to the percent of these individual cases that reach any given point.

In the secondary analysis of available data in this article, we do not measure the number of cases at each step in Figure 1. Nor do we follow individual cases from one step to the next. Rather, we use separate data sets to estimate the total number of cases at each step. This method relies on the assumption that the estimate of cases at a later step is an accurate representation of those cases at an earlier step which would have progressed to the later step. Since the samples are drawn separately, this assumption can never be tested. However, we can take every precaution to ensure that the estimates are comparable—that they overcome each of the threats to validity mentioned above. Even when we have done this, percentages calculated with these figures will still not refer to individual cases. They will, instead, be estimates of transition probabilities; that is, they will be estimates of the probability of a robbery incident becoming a robbery statistic.

We use three samples to estimate the number of robbery cases at the four steps in Figure 1.<sup>7</sup> We manipulated the samples to overcome the obstacles to comparability mentioned above: all samples are of incidents, not victimizations, that occurred in Chicago to Chicago residents, and were not commercial.<sup>8</sup> The victim survey sample represents incidents taking place in 1974.<sup>9</sup> The two police samples represent some months of 1975 and were

weighted to represent all 1975 months. This analysis must, therefore, assume that 1974 and 1975 robbery cases may be compared.<sup>10</sup> UCR founded robbery statistics (which include commercial robberies and robberies occurring in Chicago to non-residents) do indicate that 1974 and 1975 were similar.<sup>11</sup>

*Sample 1.* The National Crime Panel (NCP) victim survey for Chicago for 1974, as disseminated in incident extract file tapes by DUALabs, formed the sample used to estimate the number of cases at Step 1 and Step 2 of Figure 1. Noncommercial robbery incidents occurring in Chicago were selected for this analysis. NCP has a complex weighting system which takes age, race, and sex into account, but in general, each NCP weighted case represents about one hundred real incidents. After weighting, NCP estimates are 63,046 robbery incidents (Step 1) and 31,523 robberies in which the police were notified (Step 2).

*Sample 2.* Data gathered by the Center for Studies in Criminal Justice, with the cooperation of the Chicago Police Department, from original records of all officially recorded robberies for every fifth day of the fourth through seventh police periods of 1975 formed the sample used to estimate Step 4.<sup>12</sup> For comparability, only noncommercial robberies occurring to Chicago residents were included in this analysis. When weighted to estimate robberies known to the police for the entire year, each real case represents 16.25 estimated cases, and there are

<sup>10</sup> It must also assume that all months are comparable within a year. The second author has studied seasonality of robbery incidents known to the police in Chicago and has found no significant seasonal effect. C. Block, *Descriptive Time Series Analysis for Criminal Justice Decision Makers: Local Illinois Robbery and Burglary* (Illinois Law Enforcement Commission 1979).

<sup>11</sup> A total of 22,171 founded robberies occurred in Chicago in 1975, according to CRIME IN ILLINOIS (DLE). This includes the robberies in this sample plus commercial robberies and robberies occurring to nonresidents. The noncommercial residential robbery incidents in our sample are 82% of DLE total robberies. If we assume this same proportion existed in 1974, when there were 26,172 DLE total robberies, we might expect to have had about 21,461 sample robberies. Thus, the 18,179 that we actually had probably underestimates 1974 robberies by about 15%. The overall transition probability from incident to founding would be underestimated, given these assumptions, by about 5% (34% instead of the 29% in Figure 2). However, the exact extent of underestimation cannot be known.

<sup>12</sup> The Chicago Police Department divides the year into thirteen periods of equal length. See R. BLOCK, *VIOLENT CRIME: ENVIRONMENT, INTERACTION AND DEATH* 21-34, 86 (1977).

<sup>7</sup> The definition of robbery used in this analysis is an incident in which a person "takes property from the person or presence of another by use of force or by threatening the imminent use of force" ILL. REV. STAT. ch. 38, § 18 (1961), plus robbery attempts in which no property loss occurs. This definition is consistent with Chicago police practice, the Uniform Crime Reports, and the National Crime Surveys definitions.

<sup>8</sup> With one exception. See discussion concerning Sample 3 *infra*.

<sup>9</sup> The Survey was conducted in March, 1975. Although respondents were asked about incidents occurring in 1974, the telescoping effect probably reduces the number of early 1974 cases and adds some cases from early 1975. See R. Perrin, *Illinois Victimization Survey Data: A Guide to their Use* (Illinois Law Enforcement Commission 1979).

18,179 estimated robberies known to the police at Step 4.

*Sample 3.* To estimate the number of robberies initially recorded and investigated (Step 3), we first estimated the number of unfounded robberies and added this to the founded estimate (robberies known to the police) in Sample 2. With the cooperation of the Chicago Police Department, we obtained a complete listing of all founded and unfounded initial robbery reports for the twelfth police period of 1975. This formed the basis for the estimation of the unfounded portion of Sample 3, and, when added to the estimate of founded robberies, produced an estimate of the total robbery incidents initially recorded and investigated.

Unfortunately, this sample was not as detailed as the sample of founded robberies, and it is possible that it contains some commercial crimes or crimes occurring to nonresidents. We decided to use this sample despite these possible misclassified cases because other information available on the cases shows them to be noncommercial. Also, the founded portion of this sample (which was not used in the final estimate) was compared to the Sample 2 foundeds, and the two were quite similar, even after commercial and nonresidential robberies had been removed from Sample 2. Any error that might exist in Step 3 estimates will only affect calculations including Step 3. Other calculations, such as the overall flow probability to Step 4, will not be affected.

Each real unfounded case represented thirteen cases after weighting to represent the entire year. When summed with the founded estimate, there were 23,012 estimated cases investigated and recorded as robberies (Step 3).

#### CAUTIONS AND LIMITATIONS

The transition probabilities in this analysis were not calculated by following individual cases forward from the incident, but rather estimated by using a sample of cases at each step in the transformation process. The samples should be interpreted as estimates of the probability that any robbery will move from step to step, not as a description of the actual flow of a sample of robbery incidents. They are comparable to the "marginals" of a table, rather than the "interior" cells.

Several limits to the analysis of these marginals are present. First, they give us only some kinds of information about those cases which were eliminated from the system. If we know the characteristics of the cases that survived, we can estimate by

subtraction the characteristics of the cases that did not survive. However, the marginals cannot tell us the disposition of the eliminated cases. Only a forward record check could reveal whether a case was reclassified as another crime, dropped completely, or disposed of in some other way.

Second, although analysis of the marginals tells us which cases were eliminated and which survived, it does not tell us how the decision to eliminate a case was made. Despite our efforts to make the samples as comparable as possible, it still remains that the respondent in the victimization survey does not have the same point of view as the police record keeper. The following analysis should be interpreted in that light. For example, notified incidents are those incidents in which the victim reports that the police were notified, not incidents which the police consider as having been reported to them.

Although the estimated transition probabilities tell us the result of what happened at the decision point, what happened may not have been a decision in the usual sense. For example, a robbery victim may call the police, but inadvertently give an incorrect address. This would count, in the marginals, as a robbery incident where the police were notified, but it would not count as an initially recorded and investigated robbery, because the police could not locate the complainant. Thus, although neither the victim nor the police may actually decide to eliminate a case, it could, nevertheless, be eliminated.

#### TRANSITION PROBABILITIES FOR ROBBERY

We are now able to estimate the probability that a robbery case will move from one step to the next, and be transformed from an incident into an official robbery statistic. These transition probabilities are presented in Figure 2.

The ratio of notified robberies to robbery incidents in Figure 2 is .50. The police are notified in only 50% of robbery incidents. The other half are eliminated from the transformation process. Although this 50% figure is an estimate, it compares closely to Schneider's finding based on the more rigorous forward record check method. She found that 53% of robbery incidents were reported to the police.<sup>13</sup> There were too few robbery cases in Schneider's sample to allow a calculation of the percent of notified robberies that the police initially recorded or founded.

<sup>13</sup> A. Schneider, *Victim Surveys*, *supra* note 3, at 17.

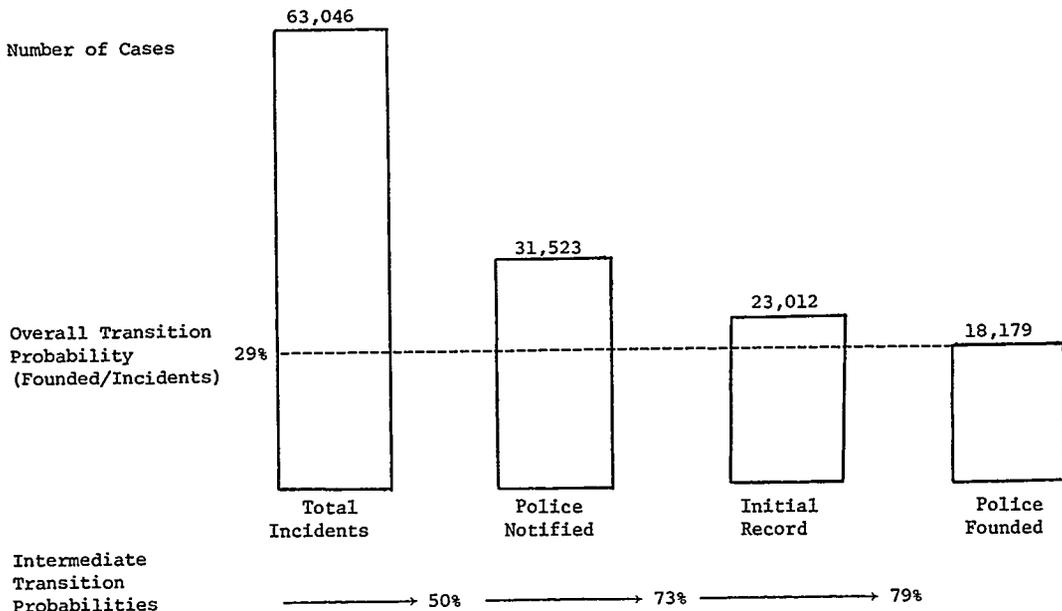


FIGURE 2

ESTIMATED PROBABILITY FLOW OF ROBBERY INCIDENTS FOR CHICAGO FROM OCCURRENCE TO FOUNDED

The ratio of robberies initially investigated and recorded to notified robberies is .73, and the ratio of robberies known to the police (founded) to initially recorded robberies is .79. Therefore, the first decision point, which is mainly victim decisions, eliminates more robbery cases than does the combination of the second plus the third decision points, which are mainly police decisions. Half of the original 63,046 estimated incidents remain after the first decision point, the decision to notify the police. Of these 31,523, an estimated 73% are initially recorded as robberies, and 58% become a robbery known to the police.

The overall transition probability, which is the product of the three intermediate transition probabilities, is 29%. An estimated 29% of all noncommercial robberies occurring in Chicago to residents in 1974-75 became robberies known to the police. This probability represents the cumulative effect of decisions made by victims and the police. Of the 63,000 robberies estimated to have occurred, only 18,000 became official statistics.

#### VICTIM AND POLICE DECISIONS

Figure 2 indicates that both victims and police limit the number of cases they send on to the next stage. But do these decisions follow a pattern or are they totally random? If they are not random, how do they affect the characteristics of victim survey

data and police data? The remaining sections of this paper examine these two questions.

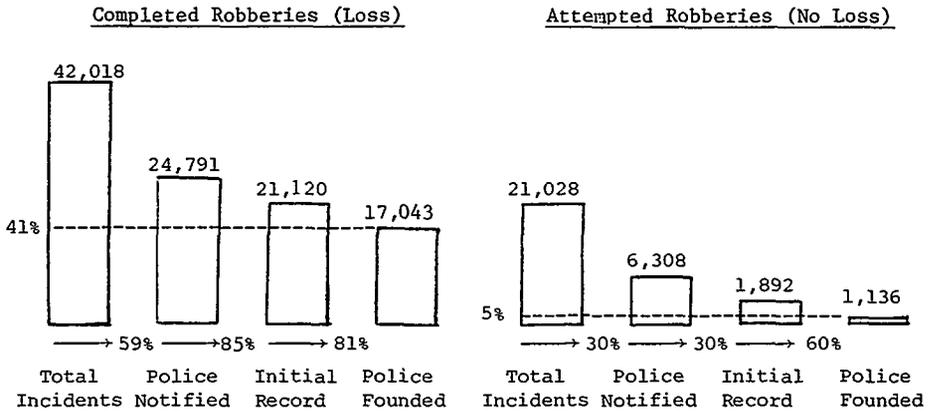
One possible pattern for victim and police decisions is a bias according to characteristics of the victim. However, when these data were analyzed by age, sex, and race of the victim, there was no difference in any decision probability. An alternative hypothesis is that victim and police decisions are based on the nature of the incident. Perhaps the more serious the incident, the more likely it is to survive at each step of the decision tree.<sup>14</sup> The following analysis will explore the effect of two indicia of robbery seriousness—the presence of a gun, and whether property was lost (that is, whether the robbery was attempted or completed). In addition, it will examine the effect of a third variable, victim resistance, on these relationships.

#### SERIOUSNESS

Figure 3 represents the same data as Figure 2, but cases have been categorized by seriousness—

<sup>14</sup> In Black's sample, *Production of Crime Rates*, *supra* note 2, for example, the seriousness of the offense (misdemeanor versus felony) was related to the probability of initial recording and arrest. Skogan, *supra* note 2, also found seriousness to be more important than individual characteristics in the victim's decision to notify the police. See also Hindelang & Gottfredson, *The Victim's Decision Not to Invoke the Criminal Justice Process*, in *CRIMINAL JUSTICE AND THE VICTIM* (W. McDonald ed. 1976).

a) Completion



b) Gun Use

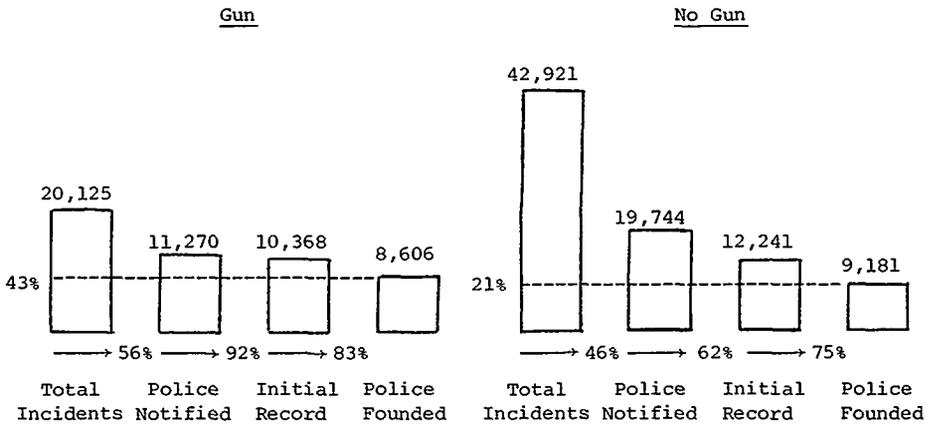


FIGURE 3

EFFECT OF ROBBERY SERIOUSNESS ON DECISIONS

whether a gun was used and whether the robbery was completed. Victim and police decisions are affected by the seriousness of the incident, especially by whether the robbery was completed. Only 5% of attempted robberies become official police statistics, compared to 41% of completed robberies.

Seriousness not only affects the overall transition probability, but also affects the step at which most cases exit from the system. Most of the eliminated completed robbery incidents are eliminated at the decision point between Step 1 and Step 2, the victim's decision to notify the police. The police eliminate relatively few completed robbery cases or robberies with a gun. However, victims eliminate

a higher percentage of robberies with a gun than the police. Thus, most serious cases that are eliminated are eliminated by the victim, not by the police. On the other hand, less serious robbery incidents do not show as large a difference between victim and police decisions.

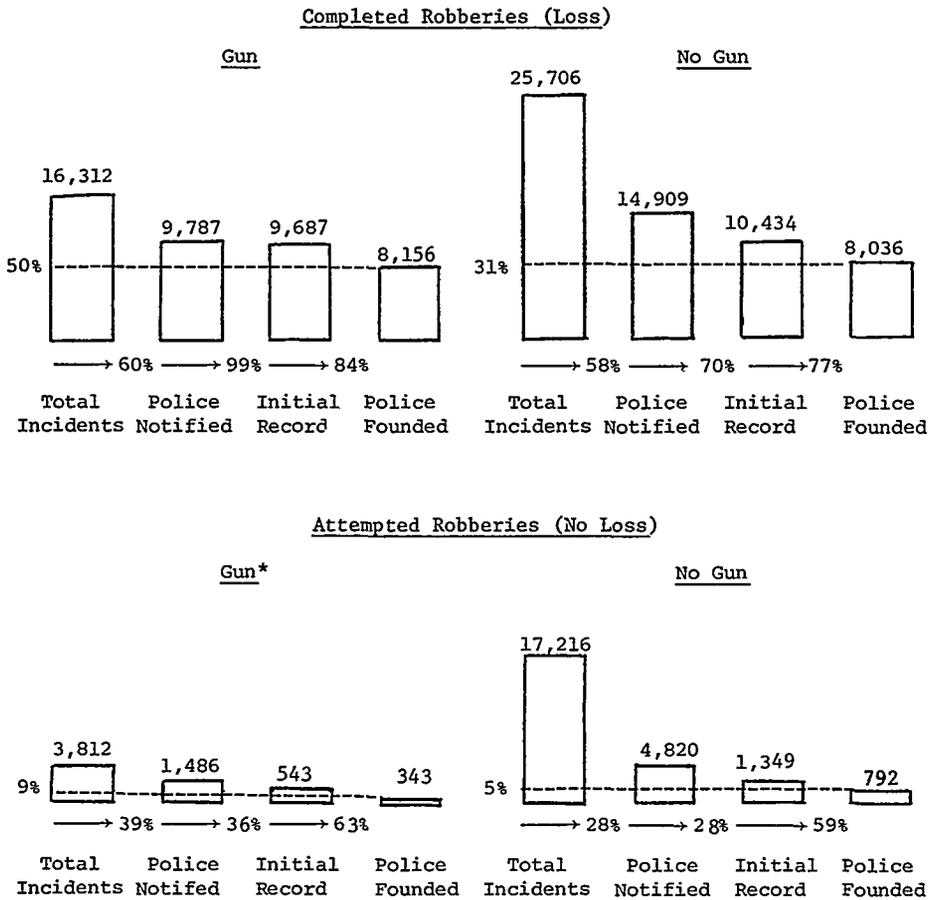
Figure 4 details the joint effects of those two seriousness variables.<sup>15</sup> The combinations are completed robberies with gun use and attempted rob-

<sup>15</sup> Studies of founded robberies show a relationship between gun use and completion. J. CONKLIN, *ROBBERY AND THE CRIMINAL JUSTICE SYSTEM* (1972); Block, *supra* note 2; Skogan, *Citizen Report of Crime: Some National Crime Panel Data*, 13 *CRIMINOLOGY* 535 (1976).

beries with no gun. Fifty percent of the first incident become an official founded statistic, but only 5% of the second. The difference is especially striking for police decisions. Police write an initial report in 99% of notified completed robberies with a gun, but in only 28% of notified attempted robberies without a gun. The two intermediate combinations of completion and gun use stand between the two extremes, as might be expected, but completed robbery incidents without a gun are much more likely to become a founded statistic (31%) than attempted robberies with a gun (9%). Also a larger difference appears in the overall

percentage founded for attempts versus completions with gun use held constant than for no gun use versus gun use with completion held constant. This indicates that whether the robbery was completed or attempted is more important than whether or not a gun was used in determining the decisions of the public and the decisions of the police. Gun use is only important when combined with completion of the robbery.

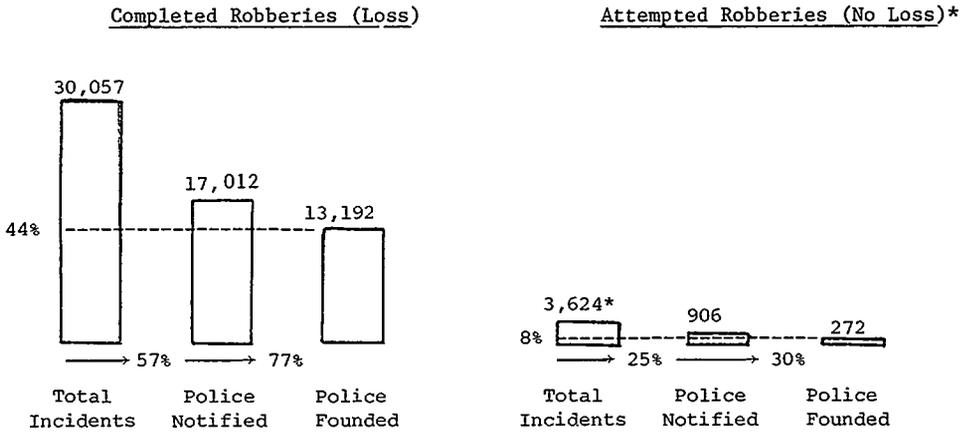
Further, for completed robberies the factor of gun use is important only to police decisions, not to the victim's decision to notify the police. The percentage of victims who notify the police of a



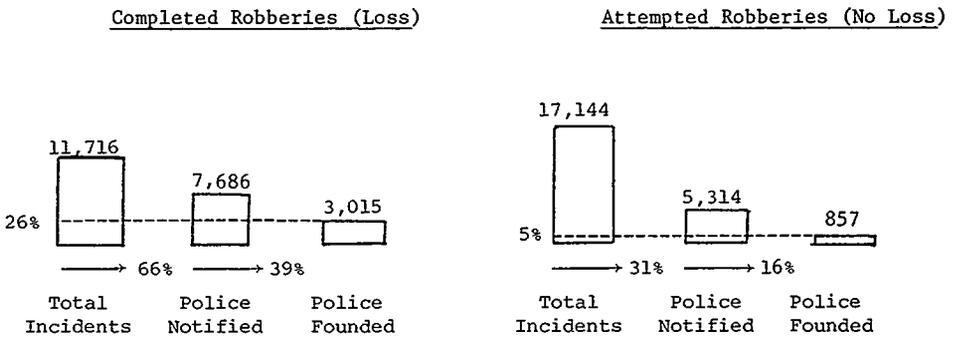
\*Real N is fewer than 40 cases.

FIGURE 4  
COMBINED EFFECTS OF ROBBERY COMPLETION AND GUN USE ON DECISIONS

No Resistance



Resistance



\* Real N is fewer than 40 real cases.

FIGURE 5

COMBINED EFFECTS OF ROBBERY COMPLETION AND VICTIM RESISTANCE ON DECISIONS

completed robbery incident is virtually the same whether or not a gun was used, but the police are more likely to decide to initially report a completed incident as a robbery and to find it if the robber used a gun. On the other hand, whether the robbery was completed is important at every decision point, both for victim and for police decisions, and for incidents with or without a gun.

Therefore, whether the robbery was completed or only attempted is the main factor in the victim's decision to notify the police. This factor is also important in police decisions, but the police also

take gun use into consideration in reporting completed robberies.

VICTIM RESISTANCE

Victim resistance has been found to be related both to whether the robbery was completed and to whether a gun was used for founded robberies.<sup>16</sup> Does a relationship exist between resistance and the decisions of victims or police to send a case on to the next step? Figure 5 outlines the combined

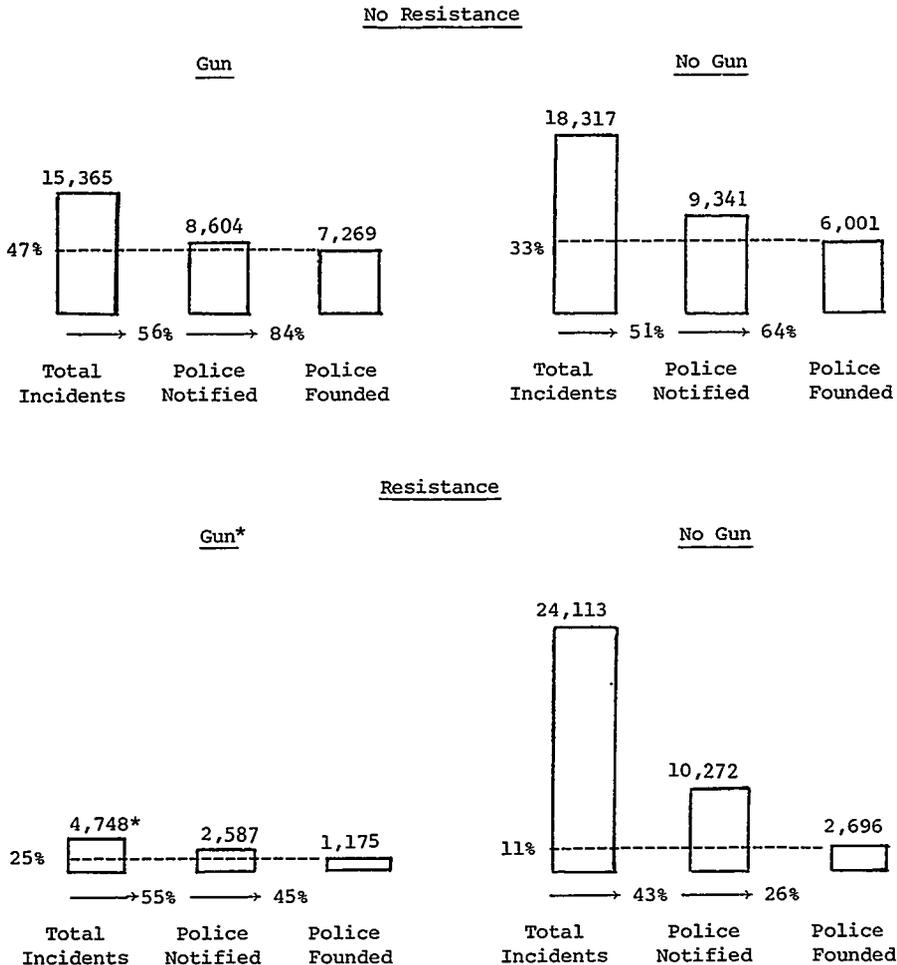
<sup>16</sup> Block, *supra* note 2.

effects of victim resistance and robbery completion on transition probabilities. Only three samples are given, since initial report data were not available for resistance.

Completed robberies with no resistance are more likely to be transformed from an incident into an official statistic than attempted robberies with resistance. Robberies in which the victim resisted, and where the resistance was apparently successful because the robbery was not completed, have only a five percent chance of becoming an official statistic. The intermediate combinations—completed robberies with resistance and attempted robberies

without resistance—show that whether the robbery was completed, with resistance held constant, is important to the decisions of both victims and police. Resistance, with completion held constant, affects victim and police decisions in opposite ways. The police are more likely to unfound a notified robbery incident, whether completed or attempted, if the victim resisted, but victims are slightly more likely to notify the police if they resisted.

The same pattern exists for the combined effects of victim resistance and gun use. Figure 6 indicates that either variable makes little difference in the victim's decision to notify the police, but both



\* Real N is fewer than 50 cases.

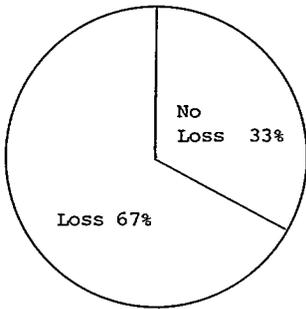
FIGURE 6  
COMBINED EFFECTS OF VICTIM RESISTANCE AND GUN USE ON DECISIONS

affect the police decision to initially investigate the incident or to unfound it. Police are more likely to unfound a robbery incident if the victim resisted and resistance is, in fact, more important to the police decision than is gun use.

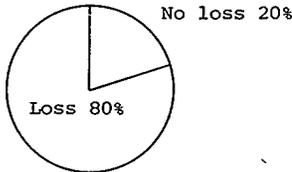
In summary, neither victim decisions nor police decisions are random. Both victims and police are less likely to eliminate a robbery from the system if it is completed, not merely attempted. The police, in addition, are less likely to eliminate a case if it is committed with a gun and if the victim does not resist.

EFFECT OF DECISIONS ON DATA

The previous section showed that neither citizen nor police decisions to eliminate robbery cases from the system are random. Therefore, the data sets produced by these decisions will differ. Moreover, a sample of data collected at a later stage of the transformation process will have different characteristics than a sample of data collected at an earlier stage. This section illustrates how the choice of sample affects the apparent relationships among three variables—whether the robbery was com-



Total Incidents = 63,046 cases



Police Notified = 31,523 cases



Initially Reported  
as Robberies = 23,012 cases



Robberies Known to the Police = 18,179 cases

FIGURE 7

ATTEMPTED VERSUS COMPLETED ROBBERIES (NO LOSS VERSUS LOSS) AT FOUR STAGES IN THE TRANSFORMATION PROCESS

**TABLE A**  
**EFFECT OF SAMPLE ON APPARENT RELATIONSHIP BETWEEN VICTIM RESISTANCE AND ROBBERY COMPLETION**

		<u>INCIDENT SAMPLE</u>		
		Attempted	Completed	(N)
Victim Resistance?	Yes	59%	41%	(28,860)
	No	11%	89%	(33,681)
	Difference	48%	48%	

		<u>NOTIFIED SAMPLE</u>		
		Attempted	Completed	(N)
Victim Resistance?	Yes	41%	59%	(13,000)
	No	5%	95%	(17,918)
	Difference	36%	36%	

		<u>FOUNDED<sup>a</sup> SAMPLE</u>		
		Attempted	Completed	(N)
Victim Resistance?	Yes	22%	78%	( 3,464)
	No	2%	98%	(13,464)
	Difference	20%	20%	

<sup>a</sup>Robberies known to the police.

pleted, whether a gun was used, and whether the victim resisted.

The area of each of the four circles in Figure 7 corresponds to the number of cases that survived to each stage of the transformation process. Not only does the "circle" of cases become smaller with each succeeding step, but the characteristics of those cases also change. Figure 7 illustrates one characteristic, the percent of robberies that were completed versus those robberies that were only attempted. Because both citizens and police systematically eliminate attempted robberies, 33% of total robbery incidents are attempts, but only 6% of robberies known to the police are attempts. Using official police statistics (robberies known to

the police) to determine the likelihood that an attempted robbery incident is completed will thus be misleading.

The researcher's choice of sample affects the apparent effect of victim resistance on whether or not the robbery was completed (Table A). In the founded robbery sample, a victim's resistance appears to have little effect. Seventy-eight percent of resisted robberies were completed despite the resistance, and resistance only improved the victim's chance of not having the robbery completed by twenty percentage points. On the other hand, in the incident sample, the majority of resisted robberies were not completed, and the percentage point difference is forty-eight. Victim resistance

appears to be more rational in samples gathered from data early in the transformation process.

The same distortion that occurs with completion data also occurs with gun use data, but to a lesser extent (see Table B). A study testing the hypothesis that victims are less likely to resist when a gun is used would find more support for the argument in a sample of robbery incidents than in a sample of robberies known to the police. Similarly, Table C illustrates the misleading conclusions from using founded data to infer the effect of victim resistance on whether the robbery incident will be completed or only attempted, holding constant the effect of gun use.

The incident sample suggests that resistance is rational. Whether or not the robber uses a gun, most of the robberies that are not resisted are completed (91% and 87%). However, if the victim resists, fewer than half of the robberies are completed (49% and 39%). Resistance thus improves the victim's chances of foiling the attempted robbery by 42 or 48 percentage points. On the other hand, the founded sample suggests that resistance makes little sense. Nearly all robberies without resistance were completed (98% and 97%) as were 81% and 75% of the resisted robberies. Instead of improving the victim's chances by about 45 percentage points as in the incident sample, resistance

**TABLE B**  
EFFECT OF SAMPLE APPARENT RELATIONSHIP BETWEEN GUN USE AND VICTIM RESISTANCE

		<u>INCIDENT SAMPLE</u>		
		Victim Resistance?		(N)
		Yes	No	
Gun Use?	Yes	24%	76%	(20,113)
	No	57%	43%	(42,430)
	Difference	<u>33%</u>	<u>33%</u>	
		<u>NOTIFIED SAMPLE</u>		
		Victim Resistance?		(N)
		Yes	No	
Gun Use?	Yes	23%	77%	(11,191)
	No	52%	48%	(19,613)
	Difference	<u>29%</u>	<u>29%</u>	
		<u>FOUNDED<sup>a</sup> SAMPLE</u>		
		Victim Resistance?		(N)
		Yes	No	
Gun Use?	Yes	14%	86%	( 8,444)
	No	31%	69%	( 8,697)
	Difference	<u>17%</u>	<u>17%</u>	

<sup>a</sup>Robberies known to the police.

**TABLE C**  
**APPARENT EFFECT OF VICTIM RESISTANCE ON WHETHER THE ROBBERY WAS COMPLETED, CONTROLLING FOR GUN USE,**  
**IN THREE SAMPLES**

<u>Per cent of Robberies that were Completed (Loss)</u>				
<u>INCIDENT SAMPLE</u>				
		Resistance?		Percentage Points Difference
		Yes	No	
Gun Use?	Yes	49% (4748) <sup>a</sup>	91% (15365)	42
	No	39% (24113)	87% (18317)	48
<u>NOTIFIED SAMPLE</u>				
		Resistance?		Percentage Points Difference
		Yes	No	
Gun Use?	Yes	58% (2587)	95% (8604)	37
	No	59% (10272)	94% (9341)	35
<u>FOUNDED<sup>b</sup> SAMPLE</u>				
		Resistance?		Percentage Points Difference
		Yes	No	
Gun Use?	Yes	81% (1175)	98% (7269)	17
	No	75% (2696)	97% (6001)	22

<sup>a</sup>Numbers in parentheses are total N's

<sup>b</sup>Robberies known to the police.

in the founded sample appears to improve the victim's chances of foiling the attempted robbery by about twenty percentage points.

A sample of founded data, therefore, would be a biased indicator of the relationship between gun use, victim resistance, and the completion of robbery incidents. Similarly, a sample of incident data cannot be assumed to be an unbiased indicator of the characteristics of robberies known to the police. An incident sample, taken from victim survey data, describes the victim as resisting when a gun is not

present, and then probably being successful in the resistance. A sample of robberies known to the police gives an image of a victim who is less rational in resisting and more powerless to affect the situation. The earlier in the decision process that data are gathered, the more rational and the more self-protective citizens appear to be.

That the characteristics of victim survey samples are systematically different from the characteristics of police data samples does not imply that one is more accurate than the other, but only that the

two sets measure different phenomena. The data exist at different steps in the transformation process from a robbery incident to an official robbery statistic. All the decisions that occurred earlier in the process cumulatively alter the characteristics of data. Victim survey data can describe the characteristics of robbery incidents. Police data can describe the characteristics of robberies known to the police. The two measures are not the same.<sup>17</sup>

#### CONCLUSIONS

Both citizens and the police make decisions on whether a robbery incident should become an official robbery statistic or it should be eliminated from the system. As a result of these cumulative decisions, robbery data at a later step of the transformation process are systematically different from robbery data at an earlier step. A comparison of these data sets helps explain the decisions that produced them. Such a comparison also points out the danger of using data from a later step of the transformation process to make conclusions about the characteristics of data at an earlier step.

This article suggests the following conclusions:

(1) Overall, about one-fourth of Chicago noncommercial robbery incidents become official robbery statistics. (2) Neither citizen nor police decisions to eliminate a robbery from the system are random. They are affected by the robbery situation, not by the characteristics of the victim or offender. (3) Whether the robbery was completed or only attempted is the main factor in the victim's decision to notify the police. Completion is also of major importance in police decisions, but the police take gun use and victim resistance into consideration.<sup>18</sup>

<sup>17</sup> Hindelang & Gottfredson, *supra* note 14, argue that the same thing is true of official data and self-report surveys of delinquency. They find that both are valid, "within the domain of behavior effectively tapped by each method."

<sup>18</sup> Future studies may discover other factors that victims or police also take into consideration, for example, the extent of injury to the victim or the amount of property stolen. It is also quite possible that these data represent only Chicago noncommercial robberies in 1974-75. On the other hand, the phenomena found here may be more universal. Therefore, this analysis should be repeated for other places, times, and crimes. Once the

Such data may suggest a circular effect. Citizen and police decisions on whether a robbery incident should continue to the next reporting step seem to be based on a stereotypical idea of robbery—a helpless victim attacked by a gun-wielding thug. The more an incident approximates this ideal robbery, the more likely it will become an official robbery statistic. Yet, on what is the stereotype based? Probably, police support the stereotype with official reports of robbery. If true, then the existence of the stereotype produces the facts that support it.

Since neither citizen nor police decisions are random, the characteristics of a sample of data from a later stage of the transformation process are different from the characteristics of a sample gathered at an earlier stage. They differ in the prevalence of completion, gun use, and resistance. They also differ in the apparent relationships among these three variables. Therefore, conclusions about robbery incidents should be based on incident data; conclusions about founded robberies should be based on founded data. Otherwise, those conclusions will be distorted.

One objection to victimization survey data is that the "extra" crimes uncovered are likely to be minor compared to police statistics. This analysis of Chicago robbery data supports that contention. The incident sample had more attempts, for example, than the founded sample. However, it is these very cases which may be the most interesting. For example, they include incidents in which citizen self-defense thwarted a more serious crime.

However, to conclude that either victim survey data or official police data is superior to the other would be a mistake. Both uniquely measure a stage in the transformation process from robbery incident to robbery statistic. This article demonstrates a method for studying the measures in combination. It systematically overcomes methodological obstacles to using both victim survey data and police data in the same analysis.

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transformation process has been more generally investigated, it may be possible to weight founded data in order to obtain estimates of incident characteristics. See Maltz, *supra* note 6.