

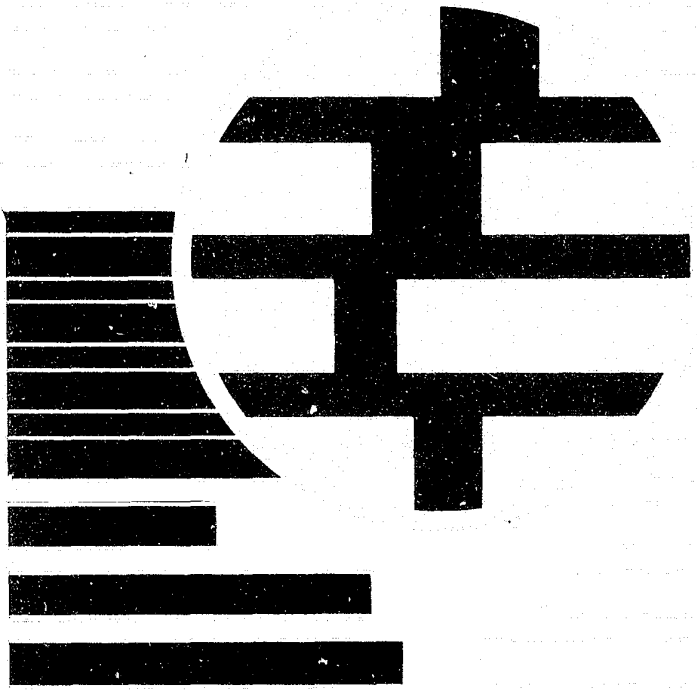
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DECISIONS AND DATA
The Transformation of Robbery Incidents
into Official Robbery Statistics

July, 1980

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ABSTRACT

Victim survey data and official police data each uniquely measure a stage in the transformation of a criminal incident into a criminal statistic. By studying them in combination, we can discover much more about the transformation process than we ever could by studying either of them alone. This paper demonstrates a method by which such a combined analysis is possible. It systematically overcomes methodological obstacles to using both victim survey data and police data in the same analysis.

We estimate the transition probabilities of a hypothetical robbery case moving from incidence, to police notification, to police investigation and writing an initial report, to founding as an official robbery known to the police. These estimates support two sorts of analysis. First, they make it possible to compare citizen and police decisions. Second, they illustrate the effect of cumulative decisions on data sets at successive stages of the transformation process. Because neither citizen decisions nor police decisions are random, the characteristics of a sample of data from a later stage are very different from the characteristics of a sample gathered at an earlier stage.

This report is a revision of an earlier draft that was titled, "A Look in the Black Box: The Transformation of Robbery Incidents into Official Robbery Statistics." It represents the views of the authors and does not necessarily represent the views of the University of Chicago, Loyola University, or the Illinois Law Enforcement Commission.

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INTRODUCTION

It is a common assertion that not all criminal incidents eventually become official crime statistics. The crime of robbery is no exception. 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 really a robbery. If it decides that it was some other 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.

There are two generally acknowledged sources of data on criminal incidents and official crimes in the United States. These sources are commonly seen as competing with one another. They 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.

It should take only a moment's reflection to realize that the NCP and the UCR are not competitive measures of the same thing. They are individual measures of different phenomena, data sets collected at different stages of the transformation of a criminal incident into an official crime statistic. Obviously, 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. It would be a mistake to use victimization survey data to measure crimes known to the police, or to use UCR data to measure criminal incidents.

Figure One 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 paper will discuss only these four.

Between the four data sets are three decision points (Raiffa,1968), 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, mainly includes victim's decisions; the second and third decision points mainly include police decisions.

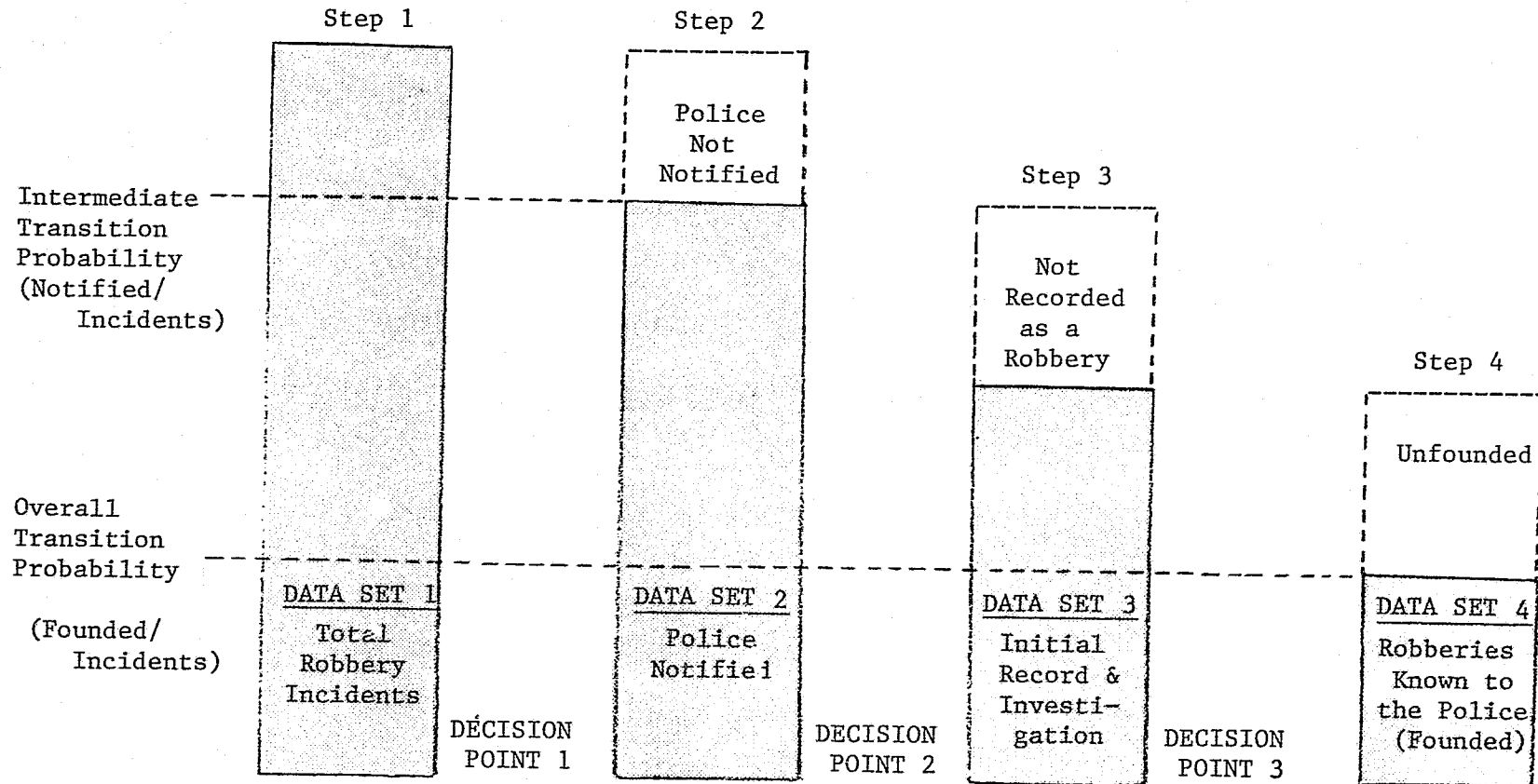
The number of cases in Data Set 1 and Data Set 2, and the characteristics of those cases, may be estimated from victim survey data. The number of cases in Data Set 3 and Data Set 4, and the characteristics of those cases, may be tabulated from police records and UCR statistics. However, researchers and public administrators often use police or UCR data to make 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 there is some maximum number of cases passed on at each decision point. Because each decision maker 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 situation.

If decisions are not random, they 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 also the characteristics of the data will be different. Therefore, conclusions based on a sample of data gathered at a later stage would not necessarily apply to an earlier stage.

Figure One

Decisions and Data
Schematic Diagram of the Transformation of Robbery Incidents
into Official Robbery Statistics



Neither victim survey data nor police data is better than the other. The two measure different things. This paper will demonstrate that we can discover much more by studying them in combination than we ever could by studying either of them alone. It will do this in two ways. First, a comparison of data gathered at later and earlier stages of the decision process will reveal something about the victim and police decisions that must have produced that data. Second, the paper will illustrate the danger of using data from a later stage of the decision process to make conclusions about the characteristics of data at an earlier stage.

DESIGN AND METHODS

The Difficulty of Comparing Data Sets

Few research studies have followed a criminal incident from occurrence to official statistic.¹ This 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 (1977,1980), is interesting 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.² In the end, she determined that 53 per cent of Index Crime incidents were founded as a crime, whether as the initial crime or as some other.³

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

¹There has been some investigation of citizen and police decisions. For example, Block (1974) analyzed the decision of the victim or the victim's representative to notify the police. For a national sample of 2,000 victims, it was 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. Skogan (1976b) found the same result in national and city victim surveys. Black (1970) studied the police decision to write an initial report of certain criminal incidents that originated with a citizen telephone call to the police. The police were more likely to write an initial report of those 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. Race made no difference. The police wrote a report in 72 per cent of the felony incidents.

²Personal communication with Anne Schneider, October 1977.

³Schneider (1980:10) estimates that, "an additional 15 per cent had not been located due to methodological problems or due to the importance of protecting victim confidentiality."

decision points. It only represents the final outcome of the decision tree, the number of robberies known to the police in Figure One. It ignores all the cases which were eliminated at each previous decision point. It tells us nothing about the cases where positive decisions were made, because they cannot be compared to the cases where negative decisions were made. Because the forward record check does provide information about negative decisions, it is the appropriate method for the study of decision points.

The appropriate method, however, is expensive and time-consuming, as Schneider discovered. Therefore, researchers have attempted to approximate forward record check data by comparing victimization survey samples to police records. However, this secondary analysis of available data has a number of methodological problems (see, for example, Maltz 1975, Skogan 1976b). All previous attempts to compare victimization survey data and police data as reported in the Uniform Crime Reports are invalid for the following reasons:

1. 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.
2. 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.
3. 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 cheaper and quicker alternative method of secondary analysis has extremely tricky pitfalls that, if not overcome, render it invalid. This paper uses secondary analysis of victimization survey and police report data for robberies in Chicago in 1974-1975, but systematically confronts each of the methodological threats to validity mentioned above, and attempts to overcome them.

Secondary analysis of available data can provide the answers to some questions much more quickly and cheaply than collecting individual case data with a forward record check. There are, obviously, limits to the sort of analysis that can be done with available data. We will argue that the questions posed by this paper can be answered within acceptable limits of validity, using available data.

Data

A researcher using the forward record check method actually measures the number of cases at each step in Figure One. The study begins with a certain number of cases. Some of them move forward at each decision point, and others drop out. Some of the cases make it through to the end. Percentages calculated with these figures refer to the per cent of these individual cases that reach any given point.

In the secondary analysis of available data in this paper, we do not measure the number of cases at each step in Figure One. We do not 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 is an assumption that 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 One.⁴ We manipulated the samples so that they overcome all the obstacles to comparability mentioned above: they are all samples of incidents, not victimizations, that occurred in Chicago to Chicago residents, and that were not

⁴The 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 Section 18; FBI-UCR,1977:302), 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.

commercial.⁵ The victim survey sample represents occurrences taking place in 1974.⁶ 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.⁷ UCR founded robbery statistics (which include commercial robberies and robberies occurring in Chicago to nonresidents) do indicate that 1974 and 1975 were similar.⁸

Sample One. 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 One. 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 100 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 Two. 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 (Block, 1977).⁹ 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 18,179 estimated robberies known to the police at Step 4.

⁵With one exception. See page 9.

⁶The 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 Perrin, 1979).

⁷It 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 (Block, 1979), and has found no significant seasonal effect.

⁸There were a total of 22,171 founded robberies 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 per cent 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 per cent. The overall transition probability from incident to founding would be underestimated, given these assumptions, by about five per cent (34 instead of the 29 per cent in Figure Two). However, the exact extent of underestimation cannot be known.

⁹The Chicago Police Department divides the year into thirteen periods of equal length.

Sample Three. To estimate the number of robberies initially recorded and investigated (Step 3), we first estimated the number of unfounded robberies and then added this to the founded estimate (robberies known to the police) in Sample Two. With the cooperation of the Chicago Police Department, a complete listing was obtained 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 Three, and, when added to the estimate of founded robberies, it 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, for the following reasons. 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 Two foundeds, and the two were quite similar, even after commercial and nonresidential robberies had been removed from Sample Two. In addition, it should be remembered that 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 13 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. They 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. It is as if we knew the "marginals" of a table, but not the "interior" cells.

There are several limits to the analysis of these marginals. 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.

The secondary analysis of victimization survey data and police data does, therefore, have limitations. Only certain kinds of analysis are possible. However, the kinds of analysis that are possible are very interesting. Both data sets uniquely measure the number and characteristics of cases at different stages in the transformation of a robbery incident into a robbery statistic. By studying victimization survey data and police data together, we can discover much more about the transformation process than by studying each of them separately.

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 Two.

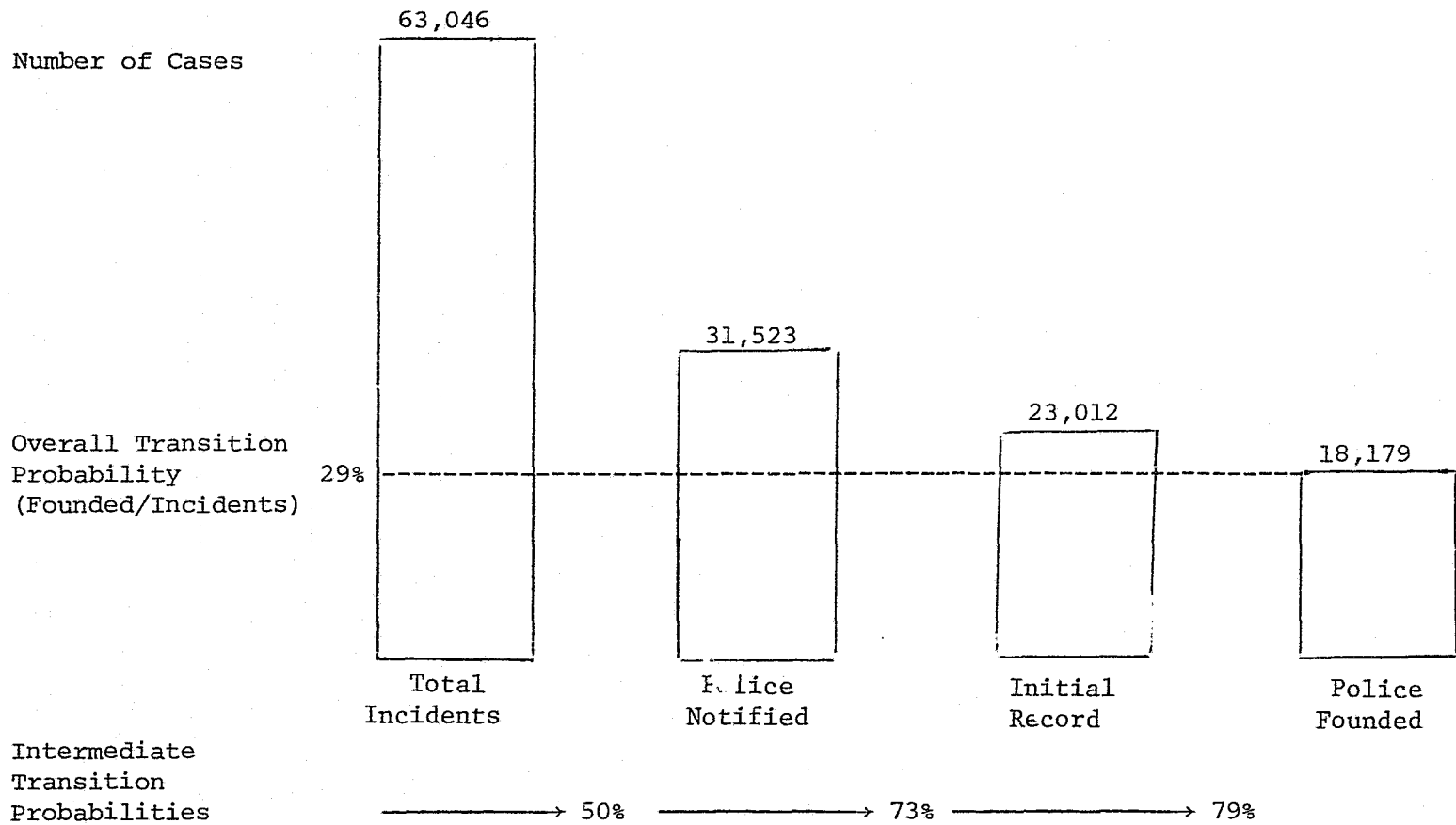
The ratio of notified robberies to robbery incidents in Figure Two is .50. The police are notified in only 50 per cent of robbery incidents. The other half are eliminated from the transformation process. Although this 50 per cent is an estimate, it compares closely to Schneider's finding based on the more rigorous forward record check method. She found that 53 per cent of robbery incidents were reported to the police (Schneider 1980: 17). There were too few robbery cases in Schneider's sample to allow a calculation of the per cent of notified robberies that the police initially recorded or 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 per cent are initially recorded as robberies, and 58 per cent become a robbery known to the police.

The overall transition probability, which is the product of the three intermediate transition probabilities, is 29 per cent. An estimated 29 per cent of all noncommercial robberies occurring in Chicago to residents in 1974-1975 became robberies known to 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.

Figure Two

Estimated Probability Flow of Robbery Incidents for Chicago from Occurrence to Founding



VICTIM AND POLICE DECISIONS

Figure Two shows that both victims and police limit the number of cases they "send on" to the next stage. They make decisions. But are these decisions totally random, or is there a pattern to them? 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.¹⁰ The following analysis will explore the effect of two aspects of robbery seriousness--the presence of a gun, and whether or not property was lost (that is, whether the robbery was only attempted or was completed). In addition, it will look at the effect of a third variable, victim resistance, on these relationships.

Seriousness

Figure Three represents the same data as Figure Two, except that the cases have been categorized by seriousness--whether or not a gun was used and whether or not the robbery was completed. Victim and police decisions are affected by the seriousness of the incident, especially by whether the robbery was completed. Only five per cent of attempted robberies become official police statistics, compared to 41 per cent of completed robberies.

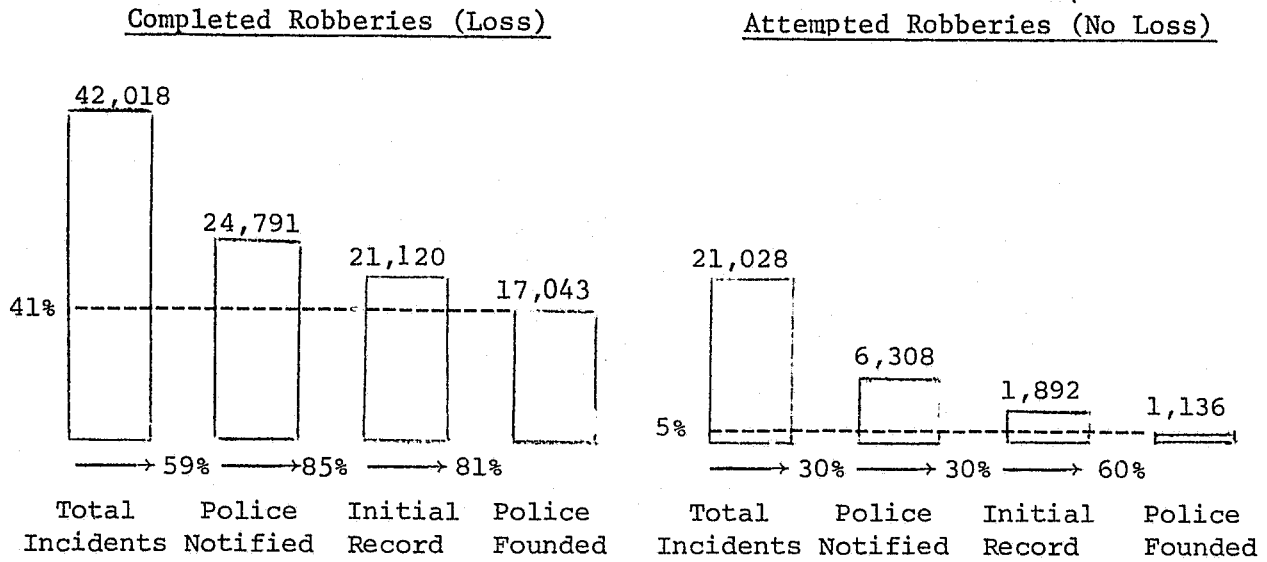
Seriousness not only affects the overall transition probability, but also affects the step at which most cases exit from the system. Most of the completed robbery incidents which are eliminated, are eliminated at the decision point between Step 1

¹⁰In Black's (1970,1971) sample, for example, the seriousness of the offense (misdemeanor versus felony) was related to the probability of initial recording and arrest. Skogan (1976b) also found seriousness to be more important than individual characteristics in the victim's decision to notify the police. Also see Hindelang and Gottfredson (1976.)

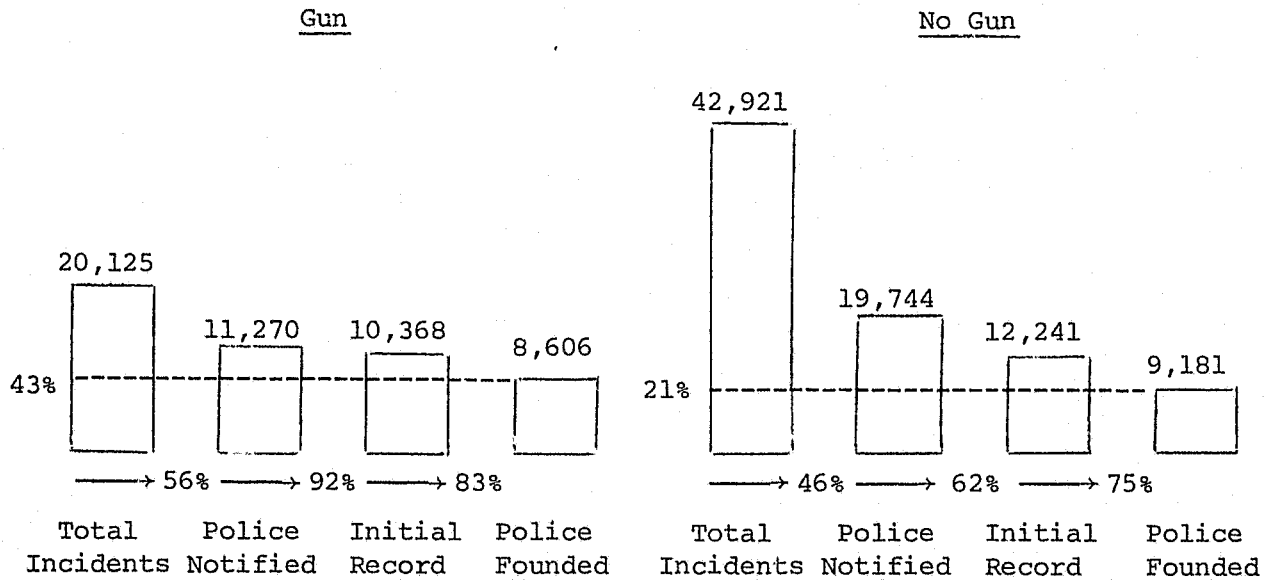
Figure Three

Effect of Robbery Seriousness on Decisions

a) Completion



b) Gun Use



and Step 2, the victim's decision to notify the police. The police eliminate relatively few completed robbery cases. This is also true for robberies with a gun. Victims eliminate a higher percentage of robberies with a gun than the police do. Thus, most of the 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 Four details the joint effects of those two seriousness variables.¹¹ The two extreme combinations are completed robberies with gun use and attempted robberies with no gun. Fifty per cent of the first sort of incident become an official founded statistic, but only five per cent of the second. The difference is especially great for police decisions. Police write an initial report in 99 per cent of notified completed robberies with a gun, but in only 28 per cent 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, there is a bigger difference 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 it is combined with completion.

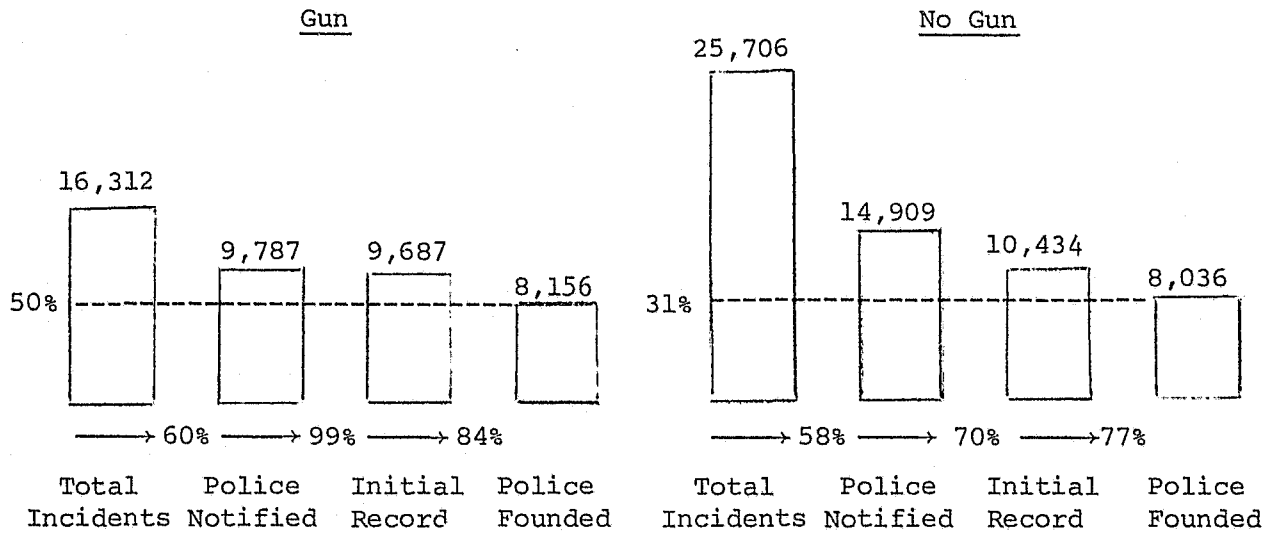
Further, for completed robberies, the factor of gun use is important only to police decisions, not to the victim's decision to notify the police. The percentage of victims who notify the police of a completed robbery incident is virtually the same whether or not a gun was used, but the police are more likely to decide to initially report a completed incident as a robbery and to found it if the robber used a gun. On the other hand, whether or not 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.

¹¹ Studies of founded robberies have shown a relationship between gun use and completion (Block, 1974; Skogan, 1976a, Conklin, 1972). This relationship is apparent in this study as well: 81 per cent of robberies committed with a gun were completed, compared to 60 per cent of robberies without a gun.

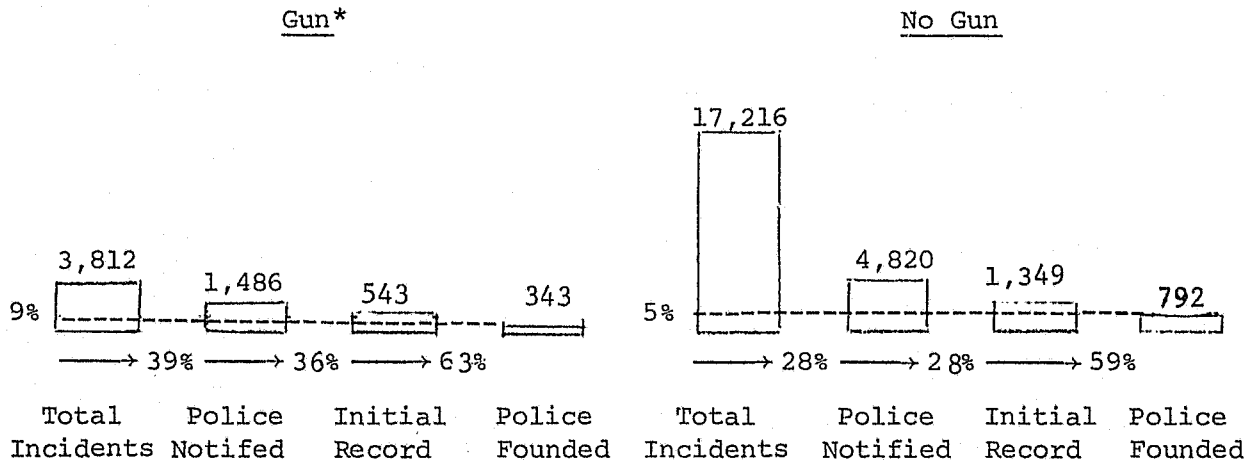
Figure Four

Combined Effects of Robbery Completion
and Gun Use on Decisions

Completed Robberies (Loss)



Attempted Robberies (No Loss)



*Real N is fewer than 40 cases.

Therefore, whether the robbery was completed or only attempted is the main factor in the victim's decision to notify the police. It is also of major importance in police decisions, but for completed robberies, the police also take gun use into consideration.

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 (Block,1974). Is there a relationship between resistance and the decisions of victims or police to send a case on to the next step? Figure Five outlines the combined effects of victim resistance and robbery completion on transition probabilities. There are only three samples given, since initial report data were not available by 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 per cent 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 much 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 is seen in the combined effects of victim resistance and gun use. Figure Six shows that neither variable makes much difference in the victim's decision to notify the police, but both of them affect the police decision to investigate the incident initially or to unfound it. The police are much more likely to unfound a robbery incident if the victim resisted. In fact, resistance is 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 much less likely to eliminate a robbery from the system if it is completed, not just 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.

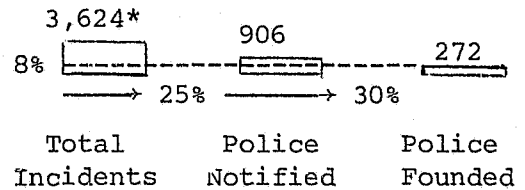
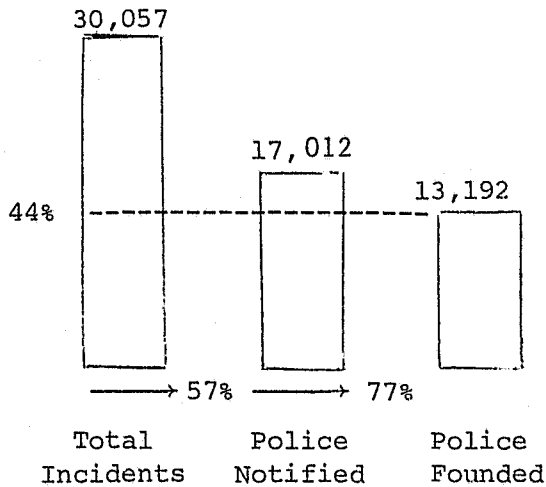
Figure Five

Combined Effects of Robbery Completion and
Victim Resistance on Decisions

No Resistance

Completed Robberies (Loss)

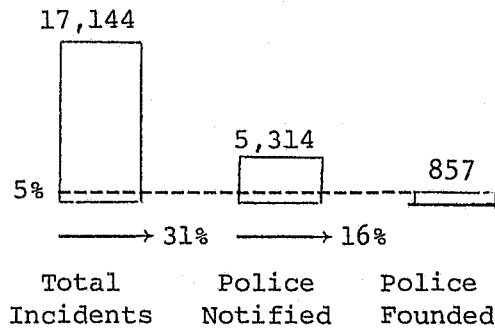
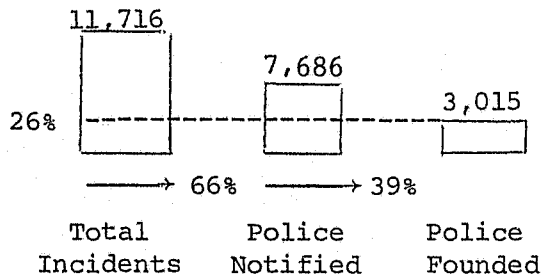
Attempted Robberies (No Loss)*



Resistance

Completed Robberies (Loss)

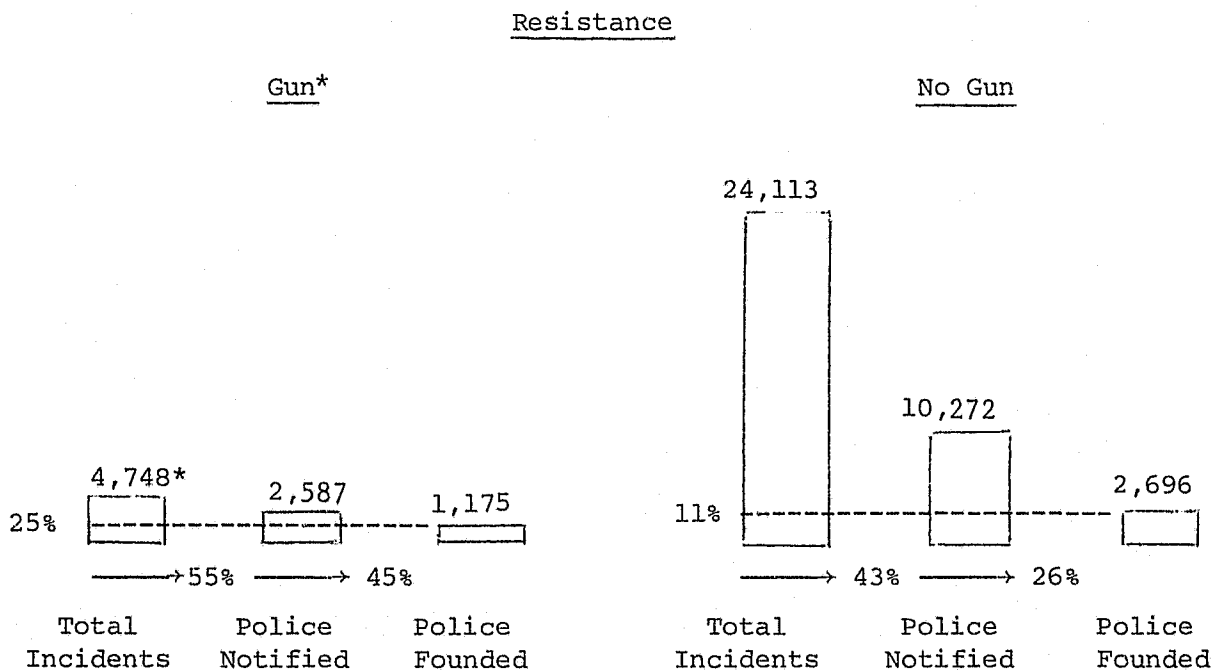
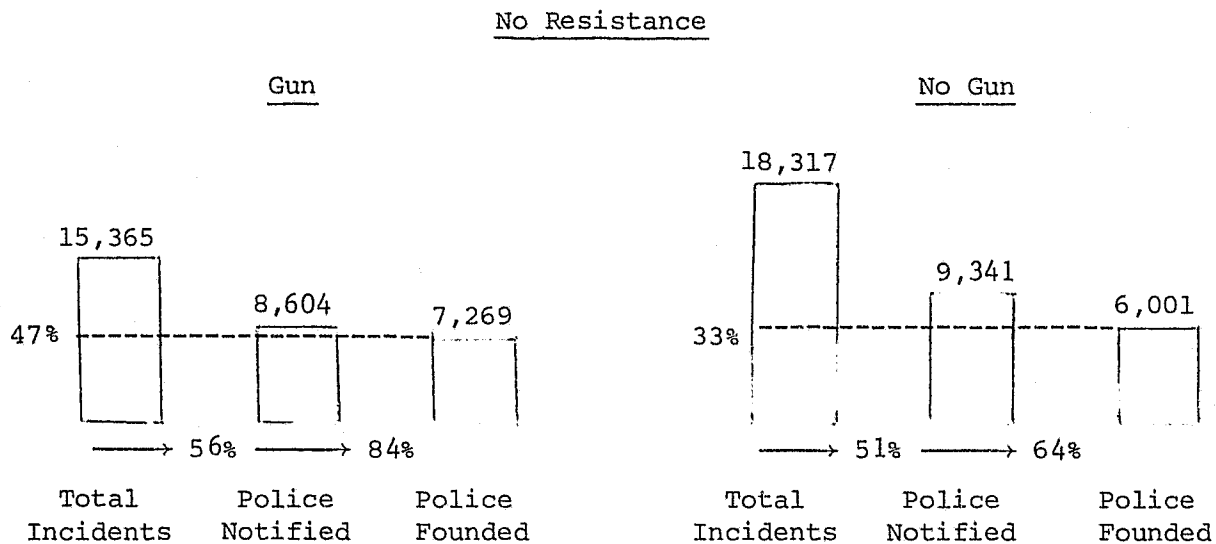
Attempted Robberies (No Loss)



* Real N is fewer than 40 real cases.

Figure Six

Combined Effects of Victim Resistance and Gun Use on Decisions



* Real N is fewer than 50 cases.

EFFECT OF DECISIONS ON DATA

Decisions affect 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 from each other. 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 completed, whether a gun was used, and whether the victim resisted.

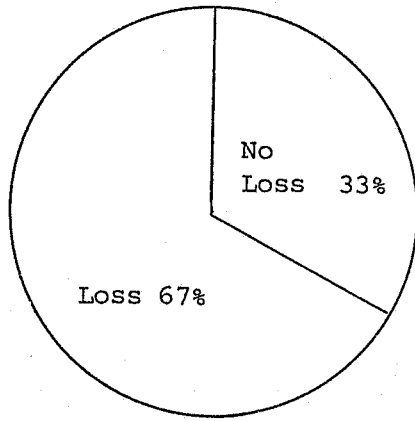
The area of each of the four circles in Figure Seven corresponds to the number of cases that survived to each stage of the transformation process. Not only does the "circle" of cases become smaller with each succeeding step, but the characteristics of those cases also change. Figure Seven illustrates one characteristic, the per cent of robberies that were completed versus those robberies that were only attempted. Because both citizens and police systematically eliminate attempted robberies, 33 per cent of total robbery incidents are attempts, but only six per cent of robberies known to the police. A researcher using official police statistics (robberies known to the police) to determine the likelihood that an attempted robbery incident is completed will, therefore, be misled.

Not only does the prevalence of completed robberies, robberies with a gun, and robberies where the victim resisted systematically change with each step in the decision process, but the apparent relationships among these three variables also change. This is illustrated in Tables A, B and C.

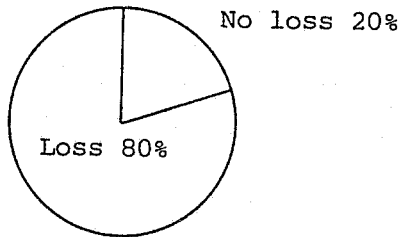
The researcher's choice of sample affects the apparent effect of victim resistance on whether or not the robbery was completed (Table A). In the founded robbery sample, a victim's resistance appears to do very little good. Seventy-eight per cent of resisted robberies were completed despite the resistance, and resistance only improved the victim's chance of not having the robbery completed by 20 percentage points. On the other hand, in the incident sample, the majority of resisted robberies were not completed, and the percentage point difference is 48. Victim resistance appears to be more rational in samples gathered from data early in the transformation process.

Figure Seven

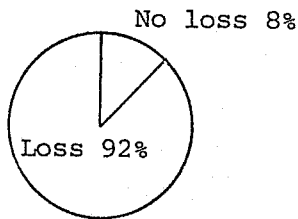
Attempted versus Completed Robberies (No Loss versus Loss)
at Four Stages in the Transformation Process



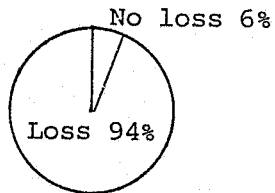
Total Incidents = 63,046 cases



Police Notified = 31,523 cases



Initially Reported
as Robberies = 23,012 cases



Robberies Known to the Police = 18,179 cases

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 | <u>11%</u> | <u>89%</u> | (33,681) |
| | Difference | 48% | 48% | |

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

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

^aRobberies known to the police.

The same distortion that occurs with completion data also occurs with gun use data, but to a much 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.

Table C illustrates the misleading conclusions that might be made if an analyst used founded data to infer the effect of victim resistance on whether or not the robbery incident will be completed or only attempted, holding constant the effect of gun use.

Someone analyzing the incident sample might conclude that resistance is rational. Whether or not the robber uses a gun, the vast majority of 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, someone analyzing the founded sample might conclude that resistance makes little sense. Nearly all robberies without resistance were completed (98% and 97%), but so 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 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 active in self-protection citizens appear to be.

The fact that the characteristics of victim survey samples are systematically different from the characteristics of police data samples does not imply that one is

TABLE B

Effect of Sample on 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^a 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> | |

^aRobberies known to the police.

TABLE C

Apparent Effect of Victim Resistance on Whether the Robbery was Completed, Controlling for Gun Use, in Three Samples

Per cent of Robberies that were Completed (Loss)

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

^aNumbers in parentheses are total N's

^bRobberies known to the police.

more accurate than the other. It only implies that the two measure different things. 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 are not the same.¹²

¹²Hindelang, et al. (1979) 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."

CONCLUSIONS AND SUMMARY

Both citizens and the police make decisions as to whether a robbery incident should continue on its way to becoming an official robbery statistic, or whether 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 can tell us something about the kind of decisions that must have 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 paper uses the secondary analysis of available data to estimate the transition probabilities of a hypothetical case moving from robbery incidence, to police notification, to police investigation and writing an initial report, to founding as an official robbery known to the police, for Chicago in 1974-1975. Victim survey and police samples are made comparable in that they contain noncommercial robbery incidents, not victimizations, occurring to Chicago residents within Chicago.

These estimates suggest the following:

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. It is also of major importance in police decisions, but the police also take gun use and victim resistance into consideration.¹³

¹³Future 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 1974-1975. 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 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, 1975).

There may be a circular effect here. Citizen and police decisions about whether a robbery incident should continue on to the next 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? What "facts" support it? Probably, the facts supporting the stereotype are taken from official police reports of robbery. If this is true, then the existence of the stereotype produces the facts that support it.

Because neither citizen nor police decisions are random, the characteristics of a sample of data from a later stage of the transformation process are very 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 many more attempts, for example, than the founded sample. However, it is these very cases which sometimes may be the most interesting. For example, they include incidents in which citizen self-defense thwarted a more serious crime from occurring.

It would be a mistake to conclude that either victim survey data or official police data is better than the other. Both uniquely measure a stage in the transformation process from robbery incident to robbery statistic. By studying them in combination, we can discover much more about the process than we ever could by studying either of them alone. This paper has demonstrated a method by which this is possible. It systematically overcomes methodological obstacles to using both victim survey data and police data in the same analysis.

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