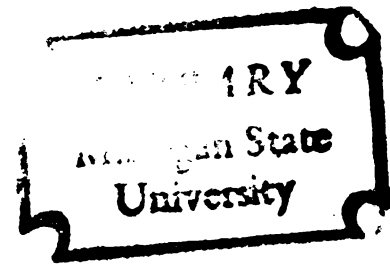


A MODEL FOR EXPLAINING THE DISCREPANCY BETWEEN
OFFICIAL CRIME RATES AND VICTIMIZATION
SURVEY CRIME RATES

Dissertation for the Degree of Ph. D.
MICHIGAN STATE UNIVERSITY
HERBERT L. TYSON, JR.
1977



This is to certify that the
thesis entitled

A MODEL FOR EXPLAINING THE DISCREPANCY BETWEEN
OFFICIAL CRIME RATES AND VICTIMIZATION
SURVEY CRIME RATES

presented by

HERBERT L. TYSON, JR.

has been accepted towards fulfillment
of the requirements for

PH.D. degree in Sociology

Peter K. Manning
Major professor

Date Aug 19, 1977

~~92719~~ 1140

ABSTRACT

A MODEL FOR EXPLAINING THE DISCREPANCY BETWEEN OFFICIAL CRIME RATES AND VICTIMIZATION SURVEY CRIME RATES

By

Herbert L. Tyson, Jr.

Some researchers have investigated the discrepancy between official crime and survey crime, and have found that the two rates covary, but are not perfectly correlated. This thesis sought to explain the discrepancy by hypothesizing that the ratio of the two rates can be used as a social indicator, utilizing a framework derived from the social theories of Emile Durkheim.

This study specified three regression equations using combinations of ten independent social and economic variables to explain each of nine different categories of crime. The equations used operationalize factors specific to the population of large cities, large cities' police departments, and a combination of both types of factors.

It was found that factors relating to population size, density, and age composition were not significantly related to the discrepancy, while the proportion of blacks, the average earnings from manufacturing, police per capita, and police civilian employment tended to explain most of the variance in the dependent variable.

This dissertation concluded that factors such as police bias and data manipulation are not the primary causes of the discrepancy. The most important finding was that the

discrepancy is caused by perceptual factors which influence the attitudes of the population, such as the visibility of racial differences and the visibility of the police. The study suggests that the best way to deal with inaccuracy of police crime statistics is through public education and policies which promote police-community based approaches to crime.

A MODEL FOR EXPLAINING THE DISCREPANCY BETWEEN
OFFICIAL CRIME RATES AND VICTIMIZATION SURVEY CRIME RATES

By

Herbert L. Tyson, Jr.

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Sociology

1977

6107402

This work, as is everything I do,
is dedicated to my wife, Karen, whose
love, patience, intelligence, and un-
derstanding make every thing and every
idea I value worthwhile.

ACKNOWLEDGMENTS

I gratefully acknowledge the guidance, assistance, and encouragement of my doctoral committee: Jim Zuiches, Chris Vanderpool, and Tom Conner. Their thoughtful advice has provided me with more help than they can realize.

I would especially like to acknowledge the appreciation I feel for the time, guidance, editing, advice, and insight given me by Peter Manning. Without his help, I have serious doubts that this dissertation would have been undertaken, let alone completed.

I would also like to thank Larry Hoover, Mike Gins, Bernie Gilman, Harry Greenspan, and Karen Tyson, who have all contributed in various ways to this dissertation.

TABLE OF CONTENTS

List of Tables	vi
List of Figures	vii
Chapter 1 Introduction	1
Chapter 2 Literature and Theory Bearing on the UCR and Other Measures of Crime	13
Introduction to the Problem	13
Theory and Literature Bearing on the UCR and Other Measures of Crime	20
Victimization Surveys	27
A Question of Measurement	28
Reconciling the UCR and NCS Crime Rates	31
Production of the Discrepancy--Citizens and the Police	37
Hypotheses, Variables, and Propositions	41
Chapter 3 Data, Method, and Analysis	50
Data and Variables	50
Analysis	54
Citizen Sector Variables	59
Police Sector	63
General Findings	66
Path Analysis Decomposition of U/V	68
Analysis of Propositions	73
Analysis of Separate Crime Equations	87
Chapter 4 Summary and Conclusions	101
The Problem	101
The Theory	103
Results	105
Discussion	105
Conclusion	110

LIST OF TABLES

Table 3.1	a. Zero Order Correlation Matrix for U/V Discrepancy by Level of Crime and Social and Police Indicators	55
	b. Zero Order Correlation Matrix for Social and Police Indicators	55
Table 3.2	U/V Ratios and Frequencies for Official and Victimization Offenses	58
Table 3.3	R-Squared for Regression Equations and Significance by Category of Crime . . .	67
Table 3.4	Independent and Common Variation Explained by Civilian and Police Sectors and F Tests of Significance for Each Sector in Whole Model by Category of Crime	69
Table 3.5	Zero Order Correlation Matrix of Selected In- dependent and Dependent Variables with Logarithmic Transformations	72
Table 3.6	Means and Standard Deviations for Selected Dependent Variables	72
Table 3.7	Estimated Coefficients and T Statistics for Citizen Sector Regressions by Category of Crime	74
Table 3.8	Estimated Coefficients and T Statistics for Police Sector Regressions by Category of Crime	84
Table 4.1	Summary of Proposition Results	106

LIST OF FIGURES

Figure 2.1	Flow Chart Showing Processing of Potential Criminal Event	36
Figure 3.1	Adjustment Procedure for Making UCR and NCS Comparable within each Category of Crime	51
Figure 3.2	Data Sources and Interpolation Method Used in this Study	53
Figure 3.3	Method Used to Create Variables and Symbols	53
Figure 3.4	Path Decomposition of U/V	70

CHAPTER 1

INTRODUCTION

The use of quantification procedures in attempting to analyze the workings of society is an established practice. The roots of thought concerning the development of knowledge about cause and effect regarding social relations owe a certain part of their heritage to scientific investigation. Such must have enticed the ancients to consider questions of society in a similar way. It was not, however, until comparatively recently that such thought became socially acceptable.

The acceptability of theorizing about society in such terms, cause and effect, has, after all, been challenged at many points in time by conservative influences which considered such questions as not only beyond man's reach, but beyond his jurisdiction as well, bordering on sacrilege and heresy. The division between traditional beliefs and the ideas proposed by sociology's founders and the challenge presented by empiricism, have been discussed by Martindale (1960) and others (Barnes, 1940; Barnes and Becker, 1952).

Much of the question has revolved about the possibility, utility and appropriateness of applying scientific questions to social phenomena. Many have considered, as some still do, that human social behavior is beyond the realm of measurement and generalization, that each being is unique, and that to attempt to prove otherwise is fallacious. It is as if the very posing of such questions were an insult or a threat to man's uniqueness, individuality, and his distinctive posture in the world. To attempt to find patterns in the way people organize

represents a very real attempt to destroy the mystique in which mankind has basked for so long.

Thus, it has not been willingly that many have come to accept the science of sociology as a valid and justified discipline. Many still challenge its most fundamental postulates. Perhaps it was fitting then, that sociology itself began as a challenge: not as an academic discipline, but as a practical step in which certain men sought to use such knowledge to make society "better"—to reform—or to use it for their own gain.

Michael Cullen (1974) put forth the thesis that man first began to collect information about social aggregates during the 1600's, and perhaps earlier. The first applications occurred in Europe, primarily as a means of determining how much tax was due land owners and governments, based on the enumeration of those who occupied it. It was at about the same time that some began to question the humanity of particular social conditions. Social statistics, or "political arithmetic", was then becoming useful for reformers, who sought to prove that certain conditions or relations existed which were contrary to the moral tenets by which they were governed. Thus, such statistics were a political instrument of challenge, in that the conditions to which they testified were a recommendation for change.

Through many phases, the practice of collecting data about groups and social conditions developed, having been formalized in some societies through a regular census, and having

been incorporated into the decision making apparatus of many governments. Still, the study of social relations and human behavior were only recent arrivals, and were, in and of themselves, seldom the object of study. The introduction of human behavior as something which could be measured and explained by aggregate data was still not in vogue into the 19th century.¹

Jack Douglas (1971) has provided a context which is especially relevant to this development. Durkheim, he says, set about to specifically engineer a discipline which would deal with the science of human behavior. A principal vehicle for this effort was the classic study Suicide. Into the 1800's, as even today, suicide was considered by some to be the single most individualistic act that a person could perform--the ultimate demonstration of free will and self-determination. Little of anything else that man could do could so clearly articulate man's independence. While many had gathered statistics on suicide, it was not until the early 1800's that enough data had been gathered to allow trends to become visible. Until then, few took such statistics at more than face value.

In the years preceding Durkheim, students of moral statistics, as they were called, began to notice regularities in suicide rates. Quetelet, Morselli, Buckle, and others noticed that some groups were consistently undergoing the same suicide rates, (see Douglas, 1967: pp. 7-12). Announcing the birth of social indicators, Durkheim's predecessors claimed that these rates were all indications of specific conditions in

society, or certain underlying causes. Joining them in this denial of the individuality of suicide, Durkheim chose to launch the science of sociology, claiming as did they that certain moral relations may be indicated by aggregate rates, and that a certain dimension of underlying meaning produces the connection between different social rates.

There are, Durkheim implied, several layers of meaning which must be understood.² There are the meanings that people themselves give to the various forms of interaction and behavior with which they are occupied. These are the ostensible rationalizations that one encounters. As such, these reasons apply to suicide to the extent that one might cite them as those which compel one to take his own life--money, love, revenge, etc.

Aside from the meanings which individuals assign and recognize, there are meanings within society as a whole--relevant to the systems of relations that exist in societies. That is, why are so many individuals--for whatever personal justifications--at the same time and with the same frequency within given societies, compelled to commit suicide? Why is it that so many people simultaneously begin to steal, murder, and rape? If such acts were truly individualistic, then would not one expect them to occur randomly?

Durkheim posited several underlying phenomena. He theorized that one special general dimension was the rise of modern societies--industrialization and urbanization--and the gradual breakdown of socializing structures which promote some level of equilibrium or social health (see Division of Labor

in Society, pp. 353-373). On one level he analyzed variations from group to group, with very specific (and perhaps ad hoc) rationales. On the broad level, however, Durkheim posed several different theories which relate to people, and why the behavior of groups and societies change over time.

To analyze the change, one may pursue either of two courses. One may analyze the individual groups and investigate how the composition of society changes when some groups wax and wane. On the other hand, one may analyze society to determine what kinds of broad structural changes are occurring. Either the changing composition or broad structural changes may account for changes in human behavior as indicated by aggregate rates, but the broad level deals especially with the cases where the general society is in flux.

Thus, on a particular level, we may determine that anomie is becoming widespread, or that one group is more disposed to egoism than the rest of the society--upsetting the equilibria, however defined, and causing rate changes for that group. On another level, however, a different kind of balance is disturbed--that of socialization routines and the social environment. More specifically, we may determine, as did Durkheim, that certain forms of organization are appropriate for particular sizes of societies. In contrasting mechanical with organic solidarity, Durkheim describes a scenario in which all social behavior is determined through internalization, with small close-knit societies wherein solidarity is insured by virtue of sameness (Division..., pp. 70-110 and 111-132). On the other hand, large groups with diverse

employment and interests can not rely on sameness. The equilibrium of interdependence is more tenuous. One might further hypothesize that socialization practices have not evolved quickly enough to cope with certain ecological changes, e.g. those in technology and population, resulting in an imbalance. Hence, anomie, a condition which is related to the failure to communicate what is socially acceptable and/or expected, can be seen as more prevalent in a rapidly changing society, in which many individuals are alienated and are unaware of what society wants of them.

Anomie is used in a loose sense throughout this discussion, in no way intending to incorporate or assume all of the conceptual dimensions implied by Merton, nor confined just to that range of meaning used in Social Theory and Social Structure. There, Merton uses a more specific conceptualization of anomie, in his discussion of "means and ends", in which anomie is the "imperfect coordination of the two," (p. 159). In the present discussion, anomie is presented as a general state of normative disorder in which social disorganization is prevalent as manifested by high crime rates and other social indicators, such as divorce, suicide, racial strife, and juvenile delinquency. This is similar to the way Lander (1954), Chilton (1964), and Slaten (1969) view society, each of whom makes reference to a more general conceptualization. Here, especially at times when society is in flux (which may be the way many sociologists view modern society), what is and is not normative becomes problematic. Thus, the useage is intended to be taken as the general disorganization resulting

from and/or attending a problematic or unclearly defined normative structure.

Such changes may be seen as occurring over time, but additionally, if we concede the universality of the mechanism which creates anomie, we may measure the difference between particular societies or groups within the same time period. Thus, we might observe different suicide rates in different countries and arrive at certain inferences about them. We may decide that one is closer to equilibrium than the other. Then again, we may decide that one is composed of more individuals who are "well-adjusted" or properly balanced, owing to special characteristics of their groups. In either case, we are using a rate as a measure of some underlying dimension or meaning. At the same time, it should be clear that the social health or equilibrium may be measured in other ways as well: in terms of crime rates, mortality and accident rates, economic levels, and demographic composition. The decision to proceed along these lines, however, is subject to several criticisms.

Douglas criticized Durkheim for precisely this reason-- that he usually assumes the underlying moral relations or meanings, and assigns them his interpretation by using "common sense," rather than empirical validation. This applies specifically to assumptions about what is considered right and wrong in a given society, but as well to the existence of underlying dimensions. Validation of right and wrong as seen by the population is certainly obtainable, within certain limits, through empirical research. Validation of a theoretical concept,

however, is subject to numerous problems which should be obvious from the history of science and sociology.

Even with empirical validation, one must be aware that whatever underlying dimensions are "discovered"--through factor analysis or whatever--are still subject to more detailed interpretation, and in the last analysis are still theoretical. Thus, all of Durkheim's constructs are simply tools for organizing reality as he sees it, just as any theory uses and invents concepts as are necessary to "explain" a phenomenon.

Whether or not such theories are true is beyond practical proof. They may simply remain "valid" until disproven, but they can never be said to be true. Hence, even well taken, Douglas' criticism may never be fully heeded.

Another caveat relevant to the summarization and analysis of aggregate data is that of the "ecological fallacy" (Robinson, 1950). When one says that suicide rates increase due to anomie, another wonders why, then, everyone does not commit suicide. It is here that the task is arduous, and one must become increasingly specific. It is not that anomie creates or causes suicide, but rather that it increases the susceptibility of some who may be in special states of disequilibrium related to certain specific circumstances. The effect is simply that, by the laws of probability, a certain constant proportion of a large population will be in such a state, and that increased anomie will activate the susceptible fraction to a uniform degree. Even so, not everyone in such circumstances will commit suicide--the decision of any one individual is still highly unpredictable. Stochastically, however, we

may know that a particular proportion will commit suicide with a given change in certain social indicators which we say measure anomie. Rather, it is this confusion, that of concern with specific individuals, which creates the problem, in that the economic and social health of a society is in a real sense the composite health of its members. The idea then, is not to relate to the behavior as individual per se, but to provide broad outlines of expectations about large groups, and in the appropriate setting to allow individuals to utilize that information accordingly.

By analogy, we can not tell if an individual will die from smoking tobacco. However, we can apprise him of the risk to his age group, sex, race, and so on. Thus, the ecological fallacy is well taken as a caveat, but should not deter the science of generalizations provided that we do not make predictions about individuals.

These cautions in mind, then one may turn to the question of the general state of society. We have theorized that suicide and crime rates may be indicators of certain underlying societal dimensions. That of crime, particularly, may be seen as relevant to a failure to adhere to socially approved behaviors. Thus, in an anomie prone society, we may expect relatively larger proportions to fail to identify with whatever socially approved means are present, and to take short cuts to perceived goals—i.e. commit crimes. But, what about those against whom crimes are committed?

In his discussion of the "collective conscience," Durkheim posits that certain acts are crimes because they

shock the collective conscience, and not vice-versa. There are also established routines for dealing with such offenses, once juridically defined. There are additionally, in some societies, laws which require members of those societies to report such offenses when they are observed, and which require the utilization of those established routines.

Durkheim effectively defines laws as codified norms, with a potential for strong negative sanctioning of certain behavior by society. Thus, by a Durkheimian definition, reporting crime is the appropriate response to crime which society condones, and which it requires in order to mete out even justice. What then, of those do not report crime? Is this a form of anomie?

Within the Durkheimian conceptualization, the failure to report a crime must certainly be viewed as an indicator of certain dysfunctions of the society. As something which shocks the collective conscience, the prescribed demonstration of that shock is crime reporting. That failing to occur, may be taken as a social indicator, a measure of some underlying meaning. The failure of a large proportion of people to report, consistently, may then be taken as a measure of that society's health, and possibly as an indication of anomie.

It may also be that, as a parallel with increasing complexity, the trend towards increasing formalization increases the collective obligation--i.e. at the formal level--while decreasing that of the individual. That is, a decline in the focus on individual and informal control may provide for the shrinking role of individuals in the control process. Hence,

as a parallel to formalization, individuals may report crime less often, especially when it does not involve them personally, leaving such matters to the formal process. To attempt to incorporate this dimension, formalization (as opposed to anomie, as an additional underlying meaning), into this study, however, might be less than useful. As will be shown, this study concerns a group of large U.S. cities. By their very nature, such cities may have achieved the same level of formalization—a consequence of being part of the same large industrialized country. Rather, such a dimension would be more appropriate to a cross-national study, the scope of which would require considerably more sophisticated and extensive data than is available. Within the U.S., the degree of formalization within large cities is therefore, assumed to be constant, and not very amenable to empirical study due to measuring problems and insignificant variation.

Thus, the central question, anomie, concerns the various levels of meaning involved in the reporting phenomena. There are, as before, several levels.

First, we have the ostensible reasons for failing to report a crime—memories of being called a "tattletale", fear of reprisal, fear that one's own culpability might be revealed, or sympathy with the offender. The fact that these, however, are allowed to outweigh the influence of the "codified norm," or the collective need to have all such crimes reported is a definite clue about the society. The fact that so many people, in particular places, are subject to such circumstances is as much a measure of the general state of society as crime itself.

We may expect that differences which occur are related, as is crime, both to the general conditions of a place--the economic or developmental level--as well as the composition of a place--age, race, sex, etc. We may expect that such factors will be related as well to the indicators of that dimension. Additionally, we may expect that a composition which contains more members which are susceptible or predisposed to the given malady will be correlated with higher rates for the indicators. The missing link, then is the theory, that which bridges the gap between the several indicators and explains whatever relationship exists. After that, then one may explore those relationships, explicating them both in theoretical and practical (common sense) terms.

Hence, derived from Durkheim, the basis of this dissertation utilizes the theory that certain moral relations may be indicated by the way in which members of a society report crime. Greater reporting indicates a more universal incorporation of the norms governing the reaction to crime and norms governing crime itself (e.g. see Rossi and Berk, 1975; Erickson, Gibbs and Jensen, 1977).³ Such behavior may be seen as corresponding to various levels of economic and social integration, however operationalized or measured, as well as the composition of particular places, all of which are in some way determined or made problematic by the underlying dimensions relating to anomie.

On the basis of these broad theoretical concerns, we would now like to look at the general problems of measurement and at a conceptualization of our problem.

CHAPTER 2

LITERATURE AND THEORY CONCERNING CRIME REPORTING

Introduction to the Problem

Historically, there has been a need for accurate crime statistics for use by law enforcement officials, administrators, scholars and the public. Accurate measures of crime are an invaluable tool in planning policy, developing theoretical perspectives on criminality, and giving the public an idea about personal risk and the effectiveness of their police departments. However, the measurement one applies will determine the extent of its usefulness, as will its specific applicability for the problem under study. This concern for obtaining measures of crime has, paradoxically, resulted in there being two such measures, with one being very extensive, yet with much question about its validity, and the other being rather limited in scope, but believed by some to be superior in measuring the magnitude of crime.

In 1929, primarily in response to the administrative needs of police departments and law enforcement agencies, the first of these measures, the Uniform Crime Reports (UCR) "crimes known to the police" was initiated by the International Association of Chiefs of Police. This reporting system was delegated, by Congress, to the FBI in 1931, and continues to this day.

Prior to that, statistics had been kept on the local level, but had never been fully collected on a national basis. Further, such statistics were likely to be of much better quality in the large cities in the northeastern parts of the

U.S., where policing had become a formal and collective problem (Lane, 1971). The establishment of the FBI and the creation of the UCR, in fact, mark the beginning of the recognition of crime as a national phenomenon. Increasing mobility and the common problems attending large cities emphasized the inability to locate local culpability, and the need to focus national resources and attention on the problem. It was in this context that crime became a national concern, as recognized by Congress.

The FBI's Uniform Crime Reports collects data on "offenses known to the police" from over 11,000 rural, state, and urban law enforcement agencies, along with other information, in monthly and annual reports or returns. The annual returns are used to summarize and correct monthly returns, and are filed on forms provided by the FBI. The returns are voluntarily filled out and mailed to the FBI each January, and cover the previous calendar year. The offenses of primary interest in this study are those used by the FBI to construct the "Total Crime Index" (TCI). They are known as "Part I Offenses" and consist of seven crimes which are common and subject to "frequent" reporting. They are:

1. Criminal homicide--"The killing of one human being by another"
2. Rape--"The carnal knowledge of a female forcibly and against her will"
3. Robbery--"A special and vicious type of theft. It takes place in the presence of the victim. To obtain the property or thing of value the robber uses force or violence on the victim or puts the victim in fear by use of threats, violence, etc."
4. Aggravated assault--"An unlawful attack by one person upon another for the purpose of inflicting severe

bodily injury usually accompanied by the use of a weapon or other means likely to produce death or great bodily harm. Attempts are included."

5. Burglary--"Housebreaking, safecracking, or any unlawful entry of a structure to commit a felony or a theft, even though no force was used to gain entrance; includes attempts"
6. Larceny--Theft--"Felonious stealing, taking and carrying, leading or driving away of the personal property of another without claim of right, with intent to deprive him of his ownership or to convert such property to the use of the taker or another"
7. Auto theft--"All cases where automobiles, trucks, busses, motorcycles, motor scooters, or other self-propelled vehicles that run on a non-rail surface, are taken by persons not having lawful access thereto and are later abandoned"

The total crime index consists of all of these (in which homicide excludes negligent manslaughter). The FBI gives explicit instructions for the enumeration of these index crimes in the Uniform Crime Reporting Handbook which defines each crime (the above definitions are paraphrased from the Handbook) and provides procedures for deciding which crimes to include.

The Handbook provides numerous detailed examples. For example, with burglary, actually at least two crimes are usually committed--burglary and larceny. However, larceny would not be recorded, since it is lower on the list--i.e. less "serious." They also detail what not to include, e.g. "taking for temporary use when actually returned by the taker, that is when prior authority has been granted or can be assumed, such as a family situation, or unauthorized use by chauffeurs and others having lawful access to the vehicle, are not counted for auto theft" is provided as a guide for auto theft (pp. 39-40). Situational examples are also provided, such as that presented in the appendix, for auto theft.

As indicated, the UCR uses a statistical convenience for its classifications which effectively reduces the volume of crime. For example, in the case wherein a number of crimes are committed by an individual in the pursuit of one particular criminal episode, the FBI instructs reporting stations to include only the crime which is highest on the list of index crimes (see pages 14-15). In a case wherein burglary was the intent, then, a "secondary consequence" such as rape, aggravated assault, robbery, or murder may be recorded. While such crimes are certainly serious, where such combinations occur frequently, one could not begin to estimate the risk of being burglarized by looking at the UCR data. A large number of the aggravated assaults and robberies are, in fact, the result of burglary, in which the burglar did not anticipate a personal confrontation.

To a large extent, of course, the UCR treatment of crime does not influence either the local police department's handling of such a case nor the legal system's disposition of the case. The individual may still be charged with each crime actually committed, and the actual final disposition of the case is the product of a complex interaction of several factors, the analysis of which is beyond the intent of this study. Such factors may include plea bargaining and other local forms of negotiation contingent upon local practices and traditions.

An additional problem may be found to exist inasmuch as the UCR contributors are not under any effective monetary or administrative compulsion to participate, nor to follow

instructions correctly. The lack of any effective control or supervision in this area results in the aggregation of a wide variety of data which may have been collected in as many different ways as there are police departments.⁴ Here, the large potential for differences renders the entire data methodology suspect. The fact is that it is practically impossible to sort out this dimension, even at a basic level. The aggregation employed by the FBI denies this very real problem.

When assembled, these data are supposed to be "uniform", but uniform only in the final assembly process. Although the FBI cautions against using the data for comparisons, the fact that they, themselves, aggregate the data for states, regions, and the nation as a whole betrays this caution. This is true of the mass-media as well, which was recently illustrated by the release of the second quarter crime figures for 1977 (Detroit Free Press, July 8, 1977). The newspapers and the national broadcast networks readily compared the data without any mention of the lack of comparability, touting the "progress" of some cities, which, as illustrated herein, may be ambiguous progress at best.

Important also is the fact that the UCR total crime index, which is frequently cited as the principal measure of crime, excludes a number of economically and socially important offenses such as arson, forgery, fraud, embezzlement, and kidnapping. There is no attempt to incorporate this dimension, which means the effective exclusion of many "white collar" and federal offenses.

h

t

i

c

7

e

e

i

0

0

2

2

0

b

9

1

1

1

1

1

1

1

1

1

1

1

1

1

1

The changing way in which crime is defined has made many hesitant to make comparisons over time. Gould (1971) expressed this concern in trying to assess whether or not crime has been increasing in the U.S. Because of citizen underreporting, exclusions mentioned above, and other features which change from year to year, it is difficult to interpret and generalize apparent changes, when attempting time series comparisons. For example, for every U.S. city, between 1972 and 1973, the TCI increased by between 20 and 120 percent. This, not because of a crime wave, but because the FBI "suddenly" started including larceny below \$50, which it had previously excluded. Larceny under \$50, it should be pointed out, is typically as large if not larger than any other single category of index crimes. The potential for gross error is further increased by various opportunities for establishing policies of assessing the value of stolen goods in particular ways (see below).

Additionally, because of the greater availability of well-identified police organizations at the city level, and the presence of modern data processing equipment, there is a tendency for rural crime to be underrepresented. This, combined with the other features, and numerous objections related to specific police departments (see below), has left the UCR open to many levels of criticism.

In 1967, in response to the criticism, and in response to the wish to obtain an alternative way of assessing police performance, the Justice Department (OLEA), in connection with a President's Task Force, began a series of victimization

surveys which have continued to the present. The various goals of the surveys are enumerated by Reiss in that task force's report (President's Commission on Law Enforcement and Administration of Justice, 1967). The surveys, with the ongoing sponsorship of the LEAA, have produced several nationwide summary publications, as well as surveys of individual U.S. cities, the latter of which are the focus of this study.

These surveys have provided an alternative picture of crime for the nation, individual states, regions, and selected large cities, which contrasts in a number of respects with the picture provided by the UCR. The most general and important conclusion has been that there is at least twice as much crime in the U.S. as is reported in the UCR (Hood and Sparks, 1970: p. 23). Additionally, Skogan (1974) compared victimization (NCS) and UCR rates for robbery, showing NCS estimates to be as much as 5.6 times as great as UCR figures. While the UCR rates were higher in some cases, in the vast majority they were not. (This is also dealt with in Chapter 3, see table 3.2.)

Indeed, a large part of the problem is manifested by these two measures, in that, historically, there has been a question of what is the best way to measure crime. On the one hand, we have a measure which reflects the general citizenry's picture of crime, as reported to us by them. On the other hand, we have a measure which reflects the organizational structure of one component of the legal system (the police) and the way it deals with crime. While either measure is likely to contain a certain amount of measurement error, each

measure is useful for specific applications, depending on what is being studied.

It is a primary contention in this dissertation that, while the applicability of any measure depends upon the specific context of the problem studied, most of the historical applications relevant to the points raised in the introduction and most of the current research on the causes of crime, can be benefitted best by a measure which contains minimal institutional filtering, and which comes directly from the population under study.

One objective of this study, therefore, is to attempt to reconcile the differences between NCS and UCR data, by showing the theoretical significance of those differences. The specific aim, described below, is to develop a model for explaining the discrepancies, showing that they are neither sporadic nor random, and thereby also to allow a degree of predictability about the level of victimization that occurs based on UCR figures.

Theory and Literature Bearing on the UCR and Other Measures of Crime

In their 46 year life, the UCR have been criticized on a number of grounds. These include differential enforcement policies (wherein some departments enforce laws which others ignore) accidental and deliberate misclassification (see below), record manipulation, and individual and departmental discretion (e.g., choosing which calls to answer, which crimes to report, etc.).

Beattie (1960) warned against using the UCR because of their compilation in different areas in ways which make them

unreliable, inconsistent, and incompatible for various research related comparisons. For example, different states have different systems of criminal law and procedures. Different departmental emphasis can create other differences. Additionally, large urban police departments have access to a much more sophisticated level of record-keeping hardware, such as computers, while many small cities and rural areas may have no specific statistical personnel at all. To then combine such diversely gathered data under one label may require making assumptions about their consistency and comparability which are unwarranted.

Limitations based on the UCR method itself are explored by Wolfgang (1963) and Pittman and Handy (1965) concerning the classification system, inappropriate indexing of crimes, poor reporting, and the fact that the system is voluntary rather than mandatory. Pittman and Handy say that the UCR indexing of Part I Offenses should be subdivided into two categories--crimes against people and crimes against property, as being distinct in their origins and social implications. While many theorists do in fact subdivide them for their own purposes, the FBI does not. Additionally, they point out that specific "crackdowns", direct underrecording by police officers, and downgrading of certain offenses are facts of life which seriously damage the UCR's useability.

In elucidating her assertion that the UCR are not "worth the paper they are written on," Robinson (1964) attacked the official crime rates on the grounds that large city data are "juggled", limited by quota systems, biased in favor of insurance

related complaints (i.e. wherein the complaint is required by the insurance company to validate the loss), and otherwise manipulated for reasons of the specific departments, as referred to below.

Within this context, there are a number of potential sources of bias that come from the police which may be internal (from within the department), external (related to political and citizen pressures), formal (specified department policy) and informal (tacit agreement about the way it should be done). One of the problems is that the specific factors are seldom easy to identify, but frequently present in combinations which make it difficult to sort out the varied effects.

Black (1970), in a study based on police-citizen encounters in which arrests did and did not take place, found several sources of bias. There was a tendency to over-represent "white collar" complaints, and to underrepresent cases in which the victim and the offender are closely related. There was also a tendency for police to consider more thoroughly the complaints of citizens who were especially deferential towards the police. To a large extent, this tends to bias the kinds of data that show up in official reports, thus distorting the actual distribution of crime. Conklin (1972) echoed the criticism of police officer discretion, not only in taking the complaint seriously, but in classifying it correctly.

There are, of course, several varieties of discretion to consider. Goldstein (1964) for example, says that certain

types may be beneficial. These exist because of public opinion (wherein a law is obsolete but remains on the books), limitations on manpower, a need to establish priorities, or to achieve a social good (as in ushering a drunk home rather than incarcerating him). Goldstein sees much of the problem as political, in that the police must consistently publicly deny that they use discretion—i.e. politically, discretion is seen as an "evil". He suggests, in fact, that the police and the public could be better served by admitting the fact of discretion, and then making the amount of discretion a matter of publicly determined policy—i.e. setting the level of enforcement (see also J. Goldstein, 1960, and Davis, 1969 and 1975).

The problem of deliberate manipulation of data is addressed by Siedman and Couzens (1974) in noting the great amount of discretion available in assessing the value of stolen property. They identify several ways in which the police manipulate data to "reduce crime." They focus here on discretion available which allows the police to juggle the property crime rate by undervaluing the reported amounts of property stolen. By undervaluing, certain crimes are downgraded, thus reducing the volume of "grand larceny" recorded for the city. They demonstrated that such was actually being done in Washington, D.C., as evidenced by the large reduction in larceny following the placement of Jerry Wilson as police chief there.⁵ In effect, Siedman and Couzens concluded that, since crime statistics are a police department's report card, the very opportunity for manipulation renders them suspect, and "useless

as a tool for evaluation of social policy," since they distort the picture of crime.

Arguments that such variations and biases are random and tend to cancel each other out, in general, were challenged by De Fleur (1975) who found that, in a study of Chicago drug arrest data "biases that influence official data...distort the validity of drug rates as measures of drug use rates to unknown degrees," i.e. they have distinct patterns of bias and are not random.

Thus, much of the criticism focuses on the sources of bias available to the police as well as the amount of discretion they have. In effect, it is the interaction of discretion and bias which creates much of the problem, in that the discretion allows the bias to surface, and to show up in the data which is reported in the UCR.

On the other hand, several studies have indicated a fair amount of correlation between UCR crime rates and substitute measures, which tend to show that such measures are indicative of the same underlying phenomena--actual crime. Price (1966) used insurance rates relevant to certain types of crime as an alternative measure, and found that the UCR rates correlated moderately with the alternative measures. However, the use of insurance rates, which is itself a biased measure, is questionable. In light of Robinson's findings, such a correlation is explained in terms other than crime, per se. Given the low rate at which the average person purchases such insurance, the use of this measure as a crime indicator at all, let alone Price's assumption that it is a better measure than the UCR

is unwarranted. Thus, his conclusion, even while critical of the UCR, is of questionable validity.

Skogan (1974) provides evidence that the UCR may have specific utility. Using robbery and burglary, he paired NCS and UCR rates for correlation analysis. He found, for example, that while the discrepancies between the rates were quite high, the two rates have almost identical rank orders. This was true both when analyzing by city and by type of crime (e.g. if the UCR rape rate was highest for New York, then so was the NCS rape rate; if rape is the least frequent UCR crime, then it is the least frequent NCS crime).

Hindelang (1975) compared UCR homicide rates with data from the Center for Health Statistics. While not exactly comparable because of different inclusions and exclusions (e.g. CHS includes all deaths caused by other persons, including those brought about by "due process" while the UCR rate includes only criminal homicide: due process includes self-defense, police line of duty, and executions), they show a very close correlation over time. Using 1967 N.O.R.C. victimization data, he found correlations with the UCR rates for other crimes as well, while comparing across national regions and metropolitan area subclassifications. His findings held even when applying various weighting schemes to account for the relative "seriousness" of crime (see Rossi and Berk, op. cit.). As did Skogan, Hindelang concluded that official crime rates do have selective utility, provided that we are mindful of their limitations.

In a purely rhetorical vein, Lejins (1966) argues that the UCR are deficient only in that criminologists make unreasonable demands of them--that they attempt to employ them for purposes for which they were not specifically designed. He claims that the UCR remains useful as a tool for evaluating, improving, and comparing in police work and policy formulation. Kituse and Ciccourel (1963) make the radical claim that crime is uniquely defined by each organizational segment which deals with it, and that it is not unidimensional. Thus, accuracy is not a relevant point since crime is only that which a given organization says it is. Of course, the problem of this dissertation would be omitted by such a claim, though, to a certain extent, one would have to conclude that organizational segments are utilizing an incomplete and biased data set. Additionally, one must question the extent to which statistics such as the UCR, given the criticisms expressed throughout the literature, can be used in either case. They do not really represent all of that with which the police deal, nor are they accurate enough for evaluation purposes. To use them in such a way leaves out the bulk of crime, distorting the needs and effectiveness of the various branches within the criminal justice system.

Studies on juvenile delinquency can also shed some light on this debate, in that many of them have used "self-report" data. Chambliss and Nagasawa (1966) attempted to test the validity of official statistics by comparing them with self-report data, which asks the potential deviant actors themselves the extent of their delinquent behavior, if any.⁶

They found that official data are biased in that they lead to conclusions about the distribution of actual black-white-Japanese delinquency which are contradicted by self-reports of juvenile delinquency. Reiss and Black (1970) also indicated the possibility of situational bias in that arrests are related to the amount of deference which a suspect shows to the police. This may result in an artifact of racial bias in that the deference shown towards the police was related to race (less shown by blacks), even though racism was not identified as a factor.

Victimization Surveys

Although welcomed as long overdue, victimization surveys have not been without their critics. The problem of telescoping (bringing in events from beyond the reference period) and forgetting, have been discussed in the victimization reports themselves and by Skogan (1974b) and Hood and Sparks (1970). Hood and Sparks and Skogan detail the various ways in which a crime may be missed or misrepresented by surveys. For example, Hood and Sparks report (pp. 28-30) that many people (over 25%) refused to be interviewed. Additionally, "conspiratorial" crimes are not likely to be reported, and people under 18 were not interviewed (although persons over 18 were asked about the experience of the entire household, there are likely to be many events that they are not aware of). Older persons and women who tend to be at home more were also more likely to be sampled--and are overrepresented.

Levine (1974) outlines a number of ways in which the victimization surveys may result in overreporting. He warns against a large potential for lying, misperceptions, experimenter expectancy, bad memories, improper coding, and overzealous interviewing. He does not, however, offer documentation to demonstrate that such actually occurs.

In NEWS REPORT (April, 1977) it was reported that a panel of the National Research Council Assembly of Mathematical and Physical Sciences Committee on National Statistics concluded that the victimization surveys do not, in fact, provide a "picture of actual crime nor of any regular discrepancies between" victimization and UCR rates. In effect, that report (Surveying Crime, Penick, ed.) concludes that neither NCS nor UCR data are indicative of the real rate of crime, however they might define that. While concluding this, however, they report that certain adjustments to the NCS process could produce a series which could be useful for assessing the risk of crime. Additionally, they leave open the door for further question about the UCR and NCS relationship in that their conclusion that the victimization rates can not be "easily" determined from the UCR is not really demonstrated. By not exploring the possibility, they leave unanswered the central problem of this dissertation.

A Question of Measurement

All of the above illustrates an ongoing debate about the best way to measure crime. As indicated by Biderman and Reiss (1967), any given technique will contain some specific

selective properties which make it more useful for some purposes and less so for others. The existence of two measures, both of which contain error and fact, may even make it possible to estimate the amount of error in each, and thus to provide more meaningful measurement.

Indicative of this debate is the question of proactive versus reactive behavior of the police. Black (1968) says that there are two ways by which police become involved-- they react to a request for assistance (reactive) or they intervene on their own authority (proactive). The problem is that only a relatively small amount of crime can be proactively discovered, due to realistic constraints such as the number of policemen, the budget, administrative control and guidance, and public discensus (see Goldstein, 1964). Consequently, much more crime is not discovered both because the police can not ferret out each offense and because much crime is not reported--the latter being quite significant because most crime is dealt with reactively.

Pittman and Handy (1964) provide evidence of this in a study of a random sample of aggravated assault in St. Louis. They randomly (method not specified) chose 241 of the 965 recorded aggravated assault cases for 1961. Examining the police files, they found that less than 7% of the 241 cases were actually "proactively" discovered, and that the rest were reported to the police by victims, bystanders, and the offenders. Pittman and Handy point other problems of data quality in that the error from citizen reporting is compounded with that from police recording. The simultaneous inclusion

of both types of error would then serve only to confound the problem of measurement, making it even more difficult to sort out.

The reasons given by households and commercial establishments for non-reporting are detailed throughout the literature (Skogan, 1974; Hood and Sparks, 1970; Criminal Victimization in the U.S. 1973, 1976). They include such reasons as fear of reprisal, victim precipitated crimes, sympathy with the offender, personal culpability, and a lack of faith in the police. Further, the distribution of these reasons has been shown to vary with the type of crime--i.e. the public may have more faith in the police's ability to handle a murder than to deal with a case of domestic aggravated assault. This has been shown to be the case by Lynn Curtis (1974).

Thus, there is a host of problems associated with measuring crime and criminal victimization in the U.S. These problems are helped very little by the varying interpretations offered in the literature concerning their useability, and advocating the use of one versus the other. For example, in his work on urban crime and public policy, Y.H. Cho (1974) comments about measuring the extent of crime in the U.S.:

Although the accuracy has been questioned, the crime statistics compiled and published by the Federal Bureau of Investigation in its Uniform Crime Reports are undoubtedly the best source available to measure the magnitude of crime in the United States (p. 10)

This he states, even while citing problems concerning the UCR and the discrepancy of magnitude revealed by the NCS surveys. While it is certainly clear that the extent of coverage

by the FBI reports is unmatched, there is a very real question about whether they can be used as a measure of magnitude. Doubt must exist because of the large gap between the level of crime that is officially reported and the level to which the population claims to have been victimized.

Rather, as shown by Skogan, what the UCR can be used for is to measure the relative magnitude of crime. He shows that using either measure will result in similar conclusions about the effects of certain variables relating to the social and economic structure of particular urban areas and their police departments (in Social Science Quarterly, op. cit.). However, Skogan points out that the magnitude of the coefficients which are obtained (in regression analysis, for example) will be very different, depending on what measure is used. Thus, the absolute effects are not the same. However, it should be stressed that Skogan found that the NCS and UCR measures covary closely, and appear to be measuring parts of the same phenomena. Thus, while one may not be able to judge the exact probability of getting assaulted in New York, one can say whether or not assault is more likely there than in Boston, and whether or not assault is more likely than robbery.

Reconciling the UCR and NCS Crime Statistics

There are fundamental contrasts between what the UCR and NCS rates are measuring, even given a certain level of similarities. At the broadest conceptual level, the UCR would be intended to measure crime. The most popular impressions of the UCR, especially with the public, is that its rates reflect

the actual level of crime in applicable jurisdictions, and that such rates provide an effective way of gauging the risk of crime in a given city.

This is not surprising, considering the way in which such statistics are publicized and used. What the UCR is actually measuring, however, is somewhat different. To see this clearly, involves tracing each "crime" back to its inception.

There is a continuous stream of events occurring in society, many of which may eventually be classified as crime. What happens is that the UCR taps this stream of events, but only after much filtering has reduced its magnitude. When a person is victimized, a perceptual filter operates so as to determine whether or not that person will invoke the aid of the police. If the police are notified, then additional filters, institutional and perceptual, intercede between the issuing of the report and the recording of the crime. These filters have been illustrated in the preceding section. Further, such processes act in different ways on different crimes--because of varying opportunities and motives. Thus, an official crime rate must be viewed, not as that full amount of crime that occurs, and not even the amount of crime which is reported or known to the police, but rather, the volume of crime which succeeds in making it through the various levels of filtering.

Victimization rates, on the other hand, attempt to determine the level of crime before filtering occurs. As has been illustrated, however, filtering is involved, even though less than that which is present when measurement occurs at

the UCR stage. Thus, victimization surveys and the UCR are both attempting to measure the same victimization phenomena, from the same stream of perceived offenses. The difference lies in the fact that the measurements are being taken at different points--NCS near the beginning and UCR nearer the end. Hence, it follows that the UCR and NCS will be different, since much filtering and processing has occurred between the two measurements (e.g. see Sellin and Wolfgang, 1964).

Conceptually, there are in fact other measurements which could be taken which can illustrate this process. For example, the individual himself may choose to ignore an offense, and not recall it for the victimization survey. So, if one were able to monitor an individual's life and interactions, they might determine that many "offenses" go unnoticed or ignored, and are filtered out even before the victimization survey level. At some later stage, still before the survey, the individual may discuss the event, and decide not to include it in the report to the interviewer, for whatever reasons. Thus, we can not say that victimization surveys are without filtering, but just that the amount of filtering is cumulatively less than that at the UCR stage.

On the other extreme, filtering may occur after the UCR stage. Only a certain proportion of events generates any arrests. Of those arrests, only a lower proportion are ever charged and arraigned. Following that, fewer still are tried and convicted, with a small fraction ending up in prison. Estimates of the proportions which "survive" to each subsequent level, however, are not easy to obtain.

The President's Commission on Crime and Law Enforcement attempted to demonstrate the filtering effect in the Challenge of Crime in a Free Society (1967), but concluded that their attempt is "only suggestive since no nationwide data exists" (pp. 8-9). Thus, if we trace an offense from its inception, we find that the level of crime may appear different at different points, depending on where it is measured, and the amount that is subject to formal punishment is only a small fraction of the original stream.

The question then, is one concerning not only what kind of filtering occurs, but additionally, at what stage we wish to measure the flow of crime. Much of this may be dealt with by asking what the original intent of measurement was. Clearly, any measurement will contain filtering, both by virtue of the point at which it is observed, and biases contained in the measuring device itself. Then one must ask how much filtering is appropriate or allowable for whatever is being studied.

If one is studying police effectiveness, then one would measure at two points, depending on how effectiveness is defined. For example, we might compare the number of complaints with the volume of resolved cases, to determine a clearance rate. Alternatively, one might measure the effectiveness by comparing the number which goes to trial and those convicted. Additionally, one must be aware that filtering can even occur in response to the fact that monitoring is taking place (e.g. Siedman and Couzens). If one is studying recidivism, the appropriate points of measure might be the

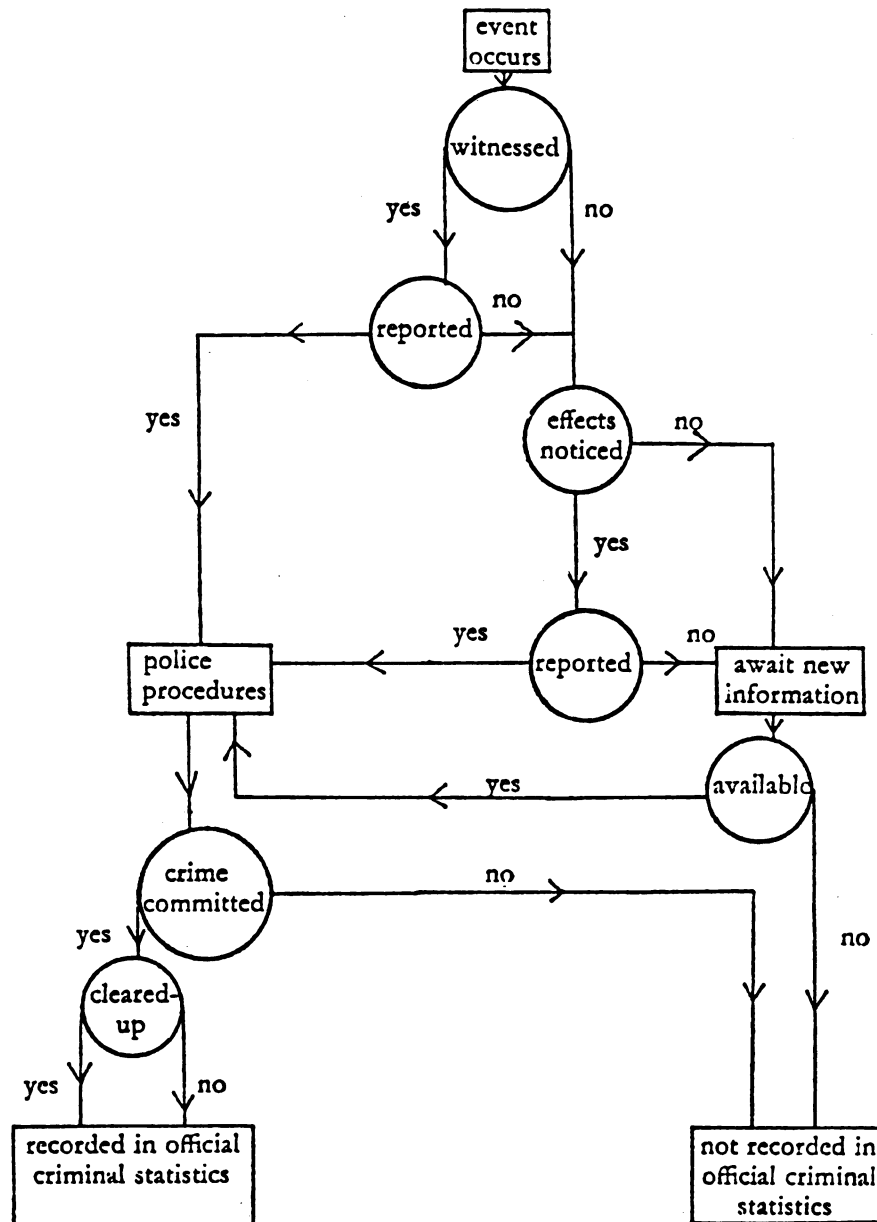
proportion of persons who are in prison who have been there before. Thus, the means of measurement determines the level of what can be studied by its use.

If one is interested in reconciling the UCR and the NCS victimization rates, the appropriate way of going about it is to view these two measurements as being taken on the same stream of events, but at different stages. To reconcile the two, then one must measure the difference or discrepancy and determine what events or conditions have transpired between the two measurements which have affected the filtering.

The problem then, is that there are many possible ways and types of filtering which occur. Basically these can occur during either of two phases: 1) between the time that the victim perceives the event as "important enough" to include in a victimization report and the time that he/she reports it to the police and 2) between the time it is reported to the police and the time they record it for the UCR. This conceptualization may be aided by Figure 2.1, as constructed by Willmer (Crime and Information Theory, p. 2).

From the flow chart, it is clear that there are many points at which the "event" may be diverted from the stream. The event may be witnessed or not witnessed. Innumerable events are not witnessed at all. Even if it is observed, it may be quickly dismissed as trivial or not worthy of further attention. Additionally, at any point new information may alter an individual's decision to report or not to report--i.e. time consumption, involvement of friends, etc.

FIGURE 2.1
 FLOW CHART SHOWING PROCESSING OF
 POTENTIAL CRIMINAL EVENT



From M. A. P. Willmer, Crime and Information Theory, p. 2.

Once the event is reported, additional factors may intercede to prevent it from being recorded. The police may not consider it a crime, or as pointed out earlier, a "more serious" crime may have been committed which will keep the actual complaint out of the UCR report.

It is, however, a practical impossibility to monitor each event and determine what decisions affect its completed or aborted journey. Even if we were to trace a single event, we would miss others that occur during our study of the first. Further, we have no guarantees that the events are perceived by the potential victims, let alone that they are perceived by the victim in the same way as they are by us. Even between our two points of focus, many things happen which are too complicated to thoroughly sort out. How then do we measure what has taken place between the two points?

Production of the Discrepancy--Citizens and the Police

We are aware, from Skogan, Levine, and others, of the various reasons for underreporting and the recording biases that are thought to occur. Thus, the factors that attend the discrepancy must be located in two social subsets--the citizens and the police. Of course, this narrows the focus of events substantially, in that they are only those which are dealt with by both sources of information (i.e. NCS and UCR data).

As has been argued in Chapter 1, the difference between the two measures can itself be a measure of some set of moral relations in a given society, or parts of that society. Specifically, the conditions of the society may in some way be

gauged by how much of the stream of events is diverted before being recorded as "crime". To a large extent, then, this represents the degree to which an event is "important" enough to be recorded in both places. Effectively, this would be a measure of the rate at which the given society or group translates the events from one form of seriousness to another.

If a translatative failure occurs, then it is a feature of the area under study, and its measurement, while a rough aggregate, is an indicator of the social and moral relations in that society. To the extent that such aggregate rates differ from place to place, it is further possible to make inferences about the relative conditions of the two places, based on the inferred meaning of the measure.

For many purposes, those events which are intercepted are not simply ignored, but are thought to be disposed of without involving the police. They may be dealt with in many ways. Within this conceptualization, however, as explained earlier, the social system has prescribed ways of dealing with events such as those covered by the UCR and NCS data. As evidenced by the existence of laws requiring the following of such prescriptions, the failure to do so may be viewed as deviance from some formally defined norm. While it is possible and perhaps valid, to argue that reporting is not really a norm (Gibbs, 1966), but rather is actually a violation of a popular norm which negatively sanctions those who "squeal" or inform, even that may be taken as a form of relative measure. That is, to the extent that underreporting

is due to the operation of such popular norms, the comparative to which such norms operate may be partially addressed by this measure. Hence, while such contrary norms may exist, they operate to different degrees in different places. In that they have replaced the formal procedures, and may not contain a definition of appropriate behavior, a gap is, in fact, produced. This is clearly a form of anomie, as used here, in which a complete definition of appropriate conduct is replaced by or challenged by an incomplete one. Thus, an individual being acted upon by contrasting rules may be effectively alienated from the social system, and if this condition is socially prevalent, we may properly call it anomie, the breakdown of normative structures.

It is in this context, then, that one may view non-reporting as a manifestation of the state of social relations. Where cities vary on this measured dimension, then we assume that they vary as well on some underlying dimension that accounts for or explains the variation. Following this line, we read from Durkheim that other features of society may similarly be affected by or be a reflection of the same underlying dimensions. That is, as this phenomenon, however we define it, occurs, there occurs also a corresponding set of phenomena that is associated with it. Where the dimension is strong, that corresponding set may be more predominant, and less so when the dimension is weak. Thus, by taking the two measures of the stream of offenses, we may form a new social indicator. This indicator tells us how much filtering occurs between the

two measurements. The UCR measure divided by the NCS estimate becomes U/V , and is then an indicator of what proportion of the offenses survives to the second measurement point.

There is a possible objection to this conceptualization, as one might tell from an examination of auto theft. In some instances, U can be higher than V , and there is no underreporting. Thus, the measure, U/V , will also reflect those events whose seriousness or relevance was negated following an official report. The two effects are practically impossible to sort out--that is, overreaction versus underreaction.

We may note, however, there is a net underreaction (i.e. U/V less than 1.00) for most crimes (this will be demonstrated in table 3.2). That the net effect of a community's reaction is less than 100% reporting may be taken as a measure of that community. For example, one can not always tell an election's results by one candidate's share of the votes. However, by noting the net surplus or deficit, the result is obvious. Thus, the net effect, even if it allows for both types of influence, can be a telling factor. It can tell us the extent to which the society, on balance, overreports or underreports.

The next logical step in this inquiry, then, is to find out whether or not other indicators of the state of society covary with the measure defined here. Variation which is common may indeed indicate the operation of an underlying dimension relating to anomie, as conceptualized here. For this, we now set forth the factors and relationships which are relevant to the phenomena.

Hypotheses, Variables and Propositions

From Skogan and Hindelang, we know that victimization rates and the UCR rates are measuring a similar phenomenon, by virtue of their strong intercorrelations. Given that there are large differences between the two, the question is whether or not those differences represent a useful or informative indicator about the social relations. If they are random with respect to other parts of the social system, then one would conclude that they are not useful in this way, and that whatever conclusions one draws from one measure must be the same as those drawn from the other. If, however, these differences occur systematically, then the variations which result are important. Given that different cities are defined by different demographic, social and economic variables, variations in crime rates which result from or are correlated with such variables are worthy of examination.

From the nature of the problem, it follows that the largest part of the gap between the two measures may be seen as underreporting. This is a central hypothesis in this study. If everyone were to report everything, the UCR and NCS would be much closer. However, because of the extra gap created by underrecording, some discrepancy would remain. Thus, by adding in both sides of the discrepancy, the UCR rates would be "restored to that of the victimization level. Thus: $V = U + b_1(\text{citizen variables}) + b_2(\text{police variables})$, where the vector B is the functional delineation of the coefficients.

It is hypothesized that certain relationships exist, and that a measure of underreporting and underrecording, U/V, will be "explained" in large part by cities' characteristics which relate to the underlying dimension. Based on the findings discussed earlier, and based on the following discussion, the following propositions have been derived:

Reporting

1. Reporting is negatively correlated with population size.
2. Reporting is negatively correlated with population density.
3. Reporting is negatively correlated with the proportion of the population under 20.
4. Reporting of property crime is positively correlated with property crime.
5. Reporting is positively related with the suburban/metro-politan population for violent crimes, and negatively for property crimes.
6. Reporting is negatively correlated with the proportion of the population which is black.

Recording

1. Recording is positively correlated with the amount of money a police department spends in connection with each officer.
2. Recording is positively correlated with the ratio of police to alternative income, i.e. relative pay.
3. Recording is positively correlated with the percentage of police personnel which is civilian.
4. Recording is positively correlated with the number of police per capita.

From the underreporting and reporting side, most of these relationships have an empirical basis, as spelled out below. Additionally, factors such as population size, the presence of a large number of young people, and the urban concentration of minority groups are also correlates of industrialization and urbanization, factors which Durkheim associated with the onset of normative breakdown. Underreporting may be seen as related to such factors. These, in

are the ostensible meanings which people assign to their actions. In a Durkheimian sense, the underlying meaning may be wholly apart from the common sense rationalizations that people use to justify their actions. Rather, the approach would be to look in terms of other factors, and to leave such reasons for a more practical level of analysis. That is, the process is basically an inferential one. While we may have a collection of reasons for not reporting crimes to the police, as revealed by the victims, those reasons are more appropriately left to some other facet of analysis, since they are not useful in a Durkheimian context.

In the second place, one of the desired consequences of this study was to find a method of estimating the level of victimization in cities by reference to factors that tend to explain it. Even if such reasons provide us with reliable regression estimates for the cities we have which are covered by the surveys, this would be of no use in cities for which such data have not been collected. Thus, it is to our theoretical and practical advantage to utilize only those data which are generally available, and not to use those generated by the survey, except of course for the construction of the dependent variable.

Much of the literature has indicated factors which tend to be associated with reporting discrepancies. The survey results themselves have provided summaries of reporting behavior by race, age, sex, and income, along with other factors. Empirically, reporting was lower for persons under 20, and varied for particular cases of income and race.

Whether or not the victim was female, as opposed to male, did not appear to have significant bearing on the question.

Income has several possible relationships which have been indicated by the survey data. From a theoretical standpoint, one expects that higher income will be associated with higher levels of personal efficacy and commitment to the social system and its rules. On the practical level, it has been shown that very high income groups tend to report property crime with greater frequency than the general population. This may be a reflection of the theoretical relationship which is additionally indicated by the higher amount of reliance on insurance among high income groups, and the consequent "need" to involve the police to collect on their insurance policies. There is some indication, which we do not attempt to explain, that the very high income groups to report violent crime with less frequency.

Racial composition, similarly may be a confounding factor. Some empirical investigations have shown that more blacks are associated with greater reporting (which we attempt to explain later), while the theoretical expectation is that more blacks means lower reporting. By virtue of their exclusion from many facets of the social and economic mainstream, blacks are expected to have less normative commitment to the system, and to be somewhat disaffected. Consequently, one expects that a large proportion of blacks would reduce the U/V ratio by adding in a component with a lower reporting probability.

Population density and magnitude are expected to be related in that they indicate the potential for urban complexity and diversity. While not necessarily the case in an underdeveloped country, in an industrialized nation, higher population and density is expected to be associated with more complex levels of development. Within that greater complexity, coordination and the balance of interdependence is harder to manage, yielding a breakdown in various means of social control. As this occurs, various forms of deviance, as herein defined, come to be more prevalent, including non-reporting. From a practical standpoint, larger and denser populations are thought to make it more difficult for an individual to receive aid from the police, and to make the police's job harder. As suggested by Goldstein (1964), the reduction in reporting may well be a reflection of the "level of enforcement" which, because of largeness, complexity, and changing norms, is appropriately lower in larger cities.

The ratio of suburban to metropolitan population is also included. In this case, the adjacent population is likely to move in and out (commute) of the urban center with great frequency. The larger this adjacent population, the greater the "exposed" population within the city, which may not be reflected in the urban population itself. Thus, this proportion is intended to correct for that gap. Additionally, a large adjacent population may be a further indicator of the moral relation in the area under study. The fact that so large a population has formed outside the city, but not in it,

indicates different styles of living, and perhaps differing amounts of normative commitment. Thus, its inclusion will add a distinct component into the total, in that a population with potentially different ways of dealing with crime is contributing to the enumeration of events which are being measured at the UCR stage. This may additionally be important in that this group may contribute at the UCR stage, but not at the victimization level, since the NCS surveys give only urban estimates. Thus, a large suburban balance may have practical as well as theoretical impact on the set of relationships.

Within the police sector, Skogan, Robinson, and Hood and Sparks provide a rationale for expecting the influence of several variables which might affect the ability and motivation of the police in handling cases at various levels. Each of these is expected to have a cumulative impact on recording. That is, the combined features which might contribute to effecting the greater normative commitment of officers are expected to effectively increase the proportion of complaints which are translated into official reports.

Civilianization has been posited as a possible factor. The including of clerks whose duties are specifically related to the processing of crime rate information may enhance the chances for accurate data production. Further, the use of such clerks may break the utilitarian linkage between two conflicting facets of police work--i.e. that of preventing crime on the one hand, and that of telling the population how much crime is occurring on the other. Thus, the linkage

which might be automatically made by an officer who is required to do his own paperwork is not so automatic here. Of course, even civilians may be requested to "fudge" the statistics, however, the probability that civilians will be motivated to do so on their own is reduced.

Additionally, removing the police officers from such paperwork duties lessens their resentment and may enable them to spend more time in ways which they feel are more productive-- crime prevention. This may provide them with less motivation to reject the normative system and as well reduce the problem of specific police-victim-offender interactions affecting the recording. This may be related to another variable as well, that of police per capita, in that both translate into more potential time to spend doing actual enforcement activity. This has the effect of increasing the effectiveness of each officer, on the one hand, by reducing his workload, and of increasing the visibility of the police on the other.

Police department expenditures may also be related. By taking the amount of money a city spends per police officer, salary included, one may obtain a relative measure of each urban area's commitment to crime prevention and control. This type of factor has been used by others (Wellford, 1974), but not in this way. What was expected to be important is the degree to which a police department utilizes its manpower. One may hypothesize that more money spent per officer indicates greater utilization of that officer and more resources for that officer to use. Thus, a department which

only spends enough for stationhouse upkeep and salaries may be making less effort than a department with an additional thousand dollars per officer--providing better equipment, benefits, training, etc. (Since data for the specific categories are not available, this would appear to be a reasonable alternative.)

One other economic factor is included. Similar to the factor just discussed, the relative pay of police officers (relative to what they might make in another form of employment) is expected to play a role in that it indicates the relatively higher or lower value the community assigns to police functions. Additionally, this factor has a relationship, potentially, to the individual police officer's self esteem, being an indication that he/she is of higher status than some around him/her. This should contribute to his commitment to his job, in that for his occupation, the system is providing a relative advantage over others. Such higher status would be expected to increase a U/V ratio by producing better morale and job performance.

The main purpose of this study, then is to test whether or not the theoretical propositions spelled out above can explain the discrepancy between the victimization rates and official rates. Using the factors just outlined, the next section explains the methods which were used to operationalize the dependent and independent variables, the mode of analysis, and the results of that analysis. The next step, then is to provide a close examination of data and sources which are available to effect this study.

CHAPTER 3

DATA, METHOD, AND ANALYSIS

Data and Variables

This study utilized ten independent variables and nine dependent variables. The dependent variables were formed by taking the ratio of UCR to NCS crime for each category of offense included in the study: total crime, violent crime, property crime, rape, robbery, larceny, aggravated assault, burglary, and auto theft. The UCR data was obtained from 1971-3 volumes of the Uniform Crime Reports, while the NCS data came from three victimization reports (Criminal Victimization in the Nation's 5 Largest Cities, Criminal Victimization in 13 American Cities, and Criminal Victimization in 8 American Cities). Those three reports covered periods which were equivalent to January-December of 1972, January-December of 1973, and July of 1971 to June of 1972 respectively. For each group of 5, 13, and 8 cities surveyed by the NCS, corresponding crime figures were obtained from the UCR by matching each NCS estimate with UCR tabulations for the same year or period. This method provides a dependent variable with a sample size of 26, which is internally consistent. This procedure has also been applied by Penick (1976), in a recent appraisal of the victimization surveys.

Some further adaptation of the data was necessary before the dependent variables could be formed. The UCR reports its crime figures in seven categories (murder, rape, robbery, aggravated assault, larceny, burglary, and auto theft) while

the NCS reported the victimization survey estimates in three sectors (Household, Personal, and Commercial). In the same way as done by Penick, the data from the survey was tallied in such a way that the groups included were equivalent to those covered by the UCR. That adjustment procedure is summarized in Figure 3.1.

FIGURE 3.1

ADJUSTMENT PROCEDURE FOR MAKING UCR AND NCS COMPARABLE
WITHIN EACH CATEGORY OF CRIME

Generic Label	UCR Label	NCS Label
Rape	Rape	Rape
Robbery	Robbery	Personal and Commercial Robbery
Aggravated Assault	Aggravated Assault	Aggravated Assault
Larceny	Larceny/Theft	Household and Personal Theft
Burglary	Burglary/Breaking and Entering	Household and Commercial Burglary
Auto Theft	Auto Theft	Completed Motor Vehicle Theft

Thus, this study concerns six crimes, and three crime categories, total, violent (rape, robbery, aggravated assault), and property (larceny, burglary). Homicide is excluded because the NCS does not include survey estimates for homicide. The actual number of homicides revealed in the surveys was too low to allow a statistically reliable estimate. Hence, there are nine distinct categories of crime to be analyzed

with respect to ten independent variables, which are discussed below.

The "adjustment" procedure just outlined provides a uniform sample with respect to time and type of crime. Similarly, all of the independent variables were derived from data sets in the appropriate time period, for each observation. That is, due to the fragmented sample, data for the 26 cities were obtained for the appropriate year or were estimated using linear interpolation based on the most recent two or three observations available. So, for the first 5 cities (Chicago, Detroit, Los Angeles, New York, and Philadelphia), all independent and dependent variables are for 1972. For the next 13 (Boston, Buffalo, Cincinnati, Houston, Miami, Milwaukee, Minneapolis, New Orleans, Oakland, Pittsburgh, San Diego, San Francisco, and Washington, D.C.), all data are for 1973. Similarly, for the remaining 8 cities (Atlanta, Baltimore, Cleveland, Dallas, Denver, Newark, Portland, and St. Louis) all data were for the average of 1971 and 1972, except when otherwise specified. In this last case, monthly data were not generally available, and, as did Penick (above) this study averaged the two years which the study overlapped. The exact way in which each variable was projected, where applicable, is described in Figures 3.2 and 3.3.

Factors used in this study included some which were not part of the regression analysis presented later in this chapter. Basically, these were included to help explicate certain relationships, as described below, and as alternatives, which

FIGURE 3.2
DATA SOURCES AND INTERPOLATION METHOD
USED IN THIS STUDY

Label Used in this study	Source	Interpolation Method
Percent of Population under 20	U.S. Census	Linear interpolation of 1960 and 1970
Percent black	Statistical Abstract	Linear interpolation of 1960 and 1970
Median Income	U.S. Census	Actual (1969) for families
Percent below poverty level, families	U.S. Census	Actual (1969)
Percent above \$15,000, families	U.S. Census	Actual (1969)
Urban Population	Statistical Abstract	Regression estimate from 1960, 1970, and 1973
S.M.S.A. population	"	"
Area of City in square miles	"	Actual (1977 ed.)
Average weekly manufacturing wage	Employment and Earnings	Monthly reports, Jan.-Dec. for 1971 and 72, July-June for 1971/2
Total Police Employment	U.C.R.	Actual (1971-3 reports) 1971/2 = average of 1971 and 1972
Civilian Police Employment	U.C.R.	Actual "
Entrance and Maximum police salaries	Municipal Yearbook	Actual (1972-4 report)
Police capital Outlays	Municipal Yearbook	"
Total Police Expenditures	Municipal Yearbook	"

FIGURE 3.3
METHOD USED TO CREATE VARIABLES AND SYMBOLS

Symbol	Variable	Method and Components
SALR	Average annual wage in manufacturing	Weekly average wage X 52
UPOP	Urban population	Method specified in Figure 3.2
BLK	Percentage of blacks in population	"
AGE	Percentage of population under 20	"
Density	Urban density	UPOP/area
PPOP	Suburban proportion of S.M.S.A.	$[(S.M.S.A. \text{ population}) - (UPOP)] / [S.M.S.A. \text{ population}]$
PRD	Relative pay	$(\text{Entrance} + \text{Maximum police salaries}) / 2$
PCIV	Civilianization	$\frac{\text{SALR} \times \text{Civilian Police Employment}}{\text{Total Police Employment}}$
EXP	Expenditures per officer	$\text{Expenditures} / (\text{Total} - \text{Civilian Employment})$
COPS	Police Concentration	$(\text{Total} - \text{Civilian Employment}) / \text{UPOP}$

To minimize the possibility of error, the above calculations were all done by computer.

for various reasons were ruled out. Those factors included in the Zero-Order Correlation Matrix but not in the multivariate analysis were: the percentage of families below the 1970 poverty level (POV), percentage of families above \$15,000 (RICH), median family income (MY), and police department capital outlays (PCAP) as a percentage of total police expenditures. All factors which were included in the analysis or which were used to form the independent variables are shown in Figure 3.2.

From the factors shown in Figure 3.2, ten variables were formed to attempt to operationalize the factors outlined as Propositions in Chapter 2. These are:

- Urban Population
- Suburban/Metropolitan Population
- Percentage Black
- Percentage Under 20
- Annual Manufacturing Wages
- Police/Manufacturing Income Ratio
- Police Per Capita
- Urban Population Density
- Police Expenditures Per Officer
- Civilian Police Employment

Each of these was computed as shown in Figure 3.3.

Analysis

Data for the 26 cities included in this study were analyzed using a zero-order correlation matrix (Table 3.1) and multiple regression. The latter form of analysis provides several types of useful information. Foremost, it allows the specification of a set of factors whose contributions comprise an explanation of the phenomenon under study. It provides a useful way of summarizing the relation

TABLE 3.1a
Zero Order Correlation Matrix for U/V Discrepancy
By Level of Crime and Social and Police Indicators

Crime Category	Variable													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Total Crime	-.32	.26	.21	.15	.22	-.12	.50	-.08	.37	-.29	.50	-.51	.26	.29
Violent Crime	-.29	.21	.19	.13	.23	-.15	.49	-.11	.36	-.26	.48	-.48	.37	.14
Property Crime	-.33	.28	.22	.16	.21	-.14	.45	-.04	.34	-.28	.48	-.49	.20	.34
Rape	-.18	.09	.38	.07	.43	.13	.63	.11	.29	-.11	.32	-.24	.70	-.02
Robbery	-.16	.09	.23	.14	.33	-.08	.54	.04	.27	-.24	.43	-.42	.49	-.03
Aggravated Assault	-.34	.28	.19	.08	.21	-.11	.45	-.18	.38	-.29	.52	-.51	.28	.18
Larceny	-.34	.30	.22	.18	.23	-.10	.48	-.04	.30	-.31	.48	-.49	.23	.31
Burglary	-.27	.17	.12	.04	.10	-.21	.28	-.08	.40	-.20	.40	-.45	.04	.33
Auto Theft	.05	-.09	.15	.23	.08	-.38	.05	.09	.34	-.25	.64	-.12	.23	-.02

Numbered variables are:

1 Manufacturing wages	6 Percent below 20	11 Percent below poverty level
2 Relative pay ratio	7 Percent black	12 Median Income
3 Expenditures per officer	8 Urban Population	13 Police per capita
4 Percent capital outlays	9 Suburban percentage	14 civilianization
5 Urban density	10 Percent above \$15,000	

TABLE 3.1b
Zero Order Correlation Matrix for Social and Police Indicators

Variable Label	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 SALR	1.00	-.52	.19	-.40	-.04	-.12	-.04	-.23	.26	-.28	.15	-.31	.35	.08
2 PRD	—	1.00	.43	.13	.40	-.40	-.22	.51	-.08	.14	.33	-.16	.21	-.03
3 EXP	—	—	1.00	-.04	.51	-.43	.06	.39	.08	.04	.48	-.15	.35	-.03
4 PCAP*	—	—	—	1.00	.00	.21	.19	.28	-.55	.00	.07	.15	-.01	.03
5 DENS	—	—	—	—	1.00	-.26	.17	.64	-.04	-.53	-.06	.06	-.02	.64
6 AGE	—	—	—	—	—	1.00	.42	-.12	-.28	-.08	-.24	.31	-.19	.06
7 BLK	—	—	—	—	—	—	1.00	-.06	.17	-.05	-.21	.66	-.42	.62
8 UPOP	—	—	—	—	—	—	—	1.00	-.60	-.28	.36	-.13	.29	.24
9 PPOP	—	—	—	—	—	—	—	—	1.00	.09	-.22	.08	-.21	.12
10 PCIV	—	—	—	—	—	—	—	—	—	1.00	.16	.20	-.10	-.48
11 RICH*	—	—	—	—	—	—	—	—	—	—	1.00	-.58	.86	-.05
12 POV*	—	—	—	—	—	—	—	—	—	—	—	1.00	-.86	.13
13 MY*	—	—	—	—	—	—	—	—	—	—	—	—	1.00	-.04
14 COPS*	—	—	—	—	—	—	—	—	—	—	—	—	—	1.00

*For all variables except PCAP, RICH, POV, and MY, see text for full description. These are:

PCAP Percent of Police Expenditures for Capital Outlays
 POV Percent of families below poverty level, 1969
 RICH Percent of families above \$15,000 income, 1969
 MY Median family income, 1969

between a set of independent or explanatory variables and a dependent variable. Further, multiple regression allows us to control for each of the other factors while examining particular variables. Additionally, this mode of analysis provides a method of determining the extent to which the relationships defined by the regression equations are statistically significant--whether or not confidence in the various "models" or particular variables is warranted, with reference to some specified level of confidence (here, $p = .05$, a 5% chance that the relationship estimated could be due to pure chance).

The dependent variable was operationalized by forming the ratio of crime known to the police (U) to victimization survey crime (V). U/V represents the proportion of the total which is both reported by citizens and recorded by the police. Hence a ratio of 1 would mean that one of the following is true:

1. All crime is reported and recorded accurately.
2. Crime is underreported, but overrecorded such that the latter compensates for the former.
3. Crime is overreported, but underrecorded such that the latter compensates for the former.

Any ratio less than or greater than 1 may involve either of the latter two arrangements in which compensation is not perfect, or cases in which both under or both over reporting and recording are occurring simultaneously. As illustrated previously, however, there are compelling reasons to expect that most crimes dealt with in this study and reported in the crime index are both underreported and underrecorded. The single exception (average) is auto theft. Auto theft represents a particular case in which more is reported than

actually occurs. Because of the immediacy of the loss, and the fact that the loss is generally substantial, along with the fact that auto theft contains few of the specific personal motivations for nonreporting that are discussed elsewhere in this study, people tend to report it quickly after the car disappears. If the car reappears, without police help, the proportion who cancel the theft report is somewhat lower than 100%, thus producing a certain amount of inaccuracy in the official reports. Once the car is recovered, many people feel embarrassed at having involved the police and fail to report the recovery of the car. Others may entirely forget that they even called the police. So, when a victimization survey interviewer asks about auto theft, the respondent may say "No," while a police report says otherwise. Thus, a comparison of the two sources shows, on the average, that the police record 26% more auto theft than the victimization surveys, indicating that a sizeable proportion of the total may be in error.

For this reason, auto theft is not included as a property crime--there is no underreporting which needs to be explained--nor in the total crime figures. It is, however, analyzed separately to determine whether or not any of the variables used in the model explain any of the U/V variation.

The U/V ratios produced are presented in Table 3.2, along with the average relative frequency of each type of crime as reported in the UCR and NCS, for the 26 cities being investigated.

TABLE 3.2

U/V RATIOS AND FREQUENCIES FOR OFFICIAL AND VICTIMIZATION OFFENSES

Crime Category	U/V Ratio	U Percentage of UCR Total	V Percentage of NCS Total
Violent crime	.397	18.3%	20.7%
Rape	.401	.7	.9
Robbery	.368	10.4	12.8
Aggravated Assault	.502	7.2	7.1
Property Crime	.317	81.7	79.3
Larceny	.308	49.7	44.8
Burglary	.339	32.0	34.5
Auto Theft	1.262	4.7*	16.1*
Total Crime	.329	100.0	100.0

* The total was computed without auto theft for all categories except auto theft, for which the total was re-computed, for reasons outlined in the text. Thus, the rape U percentage's denominator is rape + robbery + assault + larceny + burglary, while the U percentage for auto theft has that denominator augmented by auto theft.

For both sets of data (UCR and NCS) the different types of crime have similar relative frequencies and rank orders, except for auto theft. It should be pointed out also that those crimes with the least frequency--rape, robbery, auto theft, and aggravated assault--are also the most completely reported and recorded, though not in perfect inverse correspondence. This would lend initial support to the idea that people react more thoroughly to crimes of rarer occurrence, and are perhaps desensitized or less responsive to those of greater frequency. (This relationship is additionally explicated by the whole question of normative agreement and reporting and crime frequency, discussed earlier.)

For each of the nine crime categories listed in Table 3.2, multiple regressions were performed to attempt to identify the structure of the relationship. Additionally, a correlation matrix summarizing each of the pairs of relationships was created to guide the analysis. Before proceeding to the results, however, a discussion of the independent variables is in order.

Citizen Sector Variables

The theoretical expectations outlined earlier were translated in each case into some operational form. The operational form for each variable is used to attempt to grasp specific conceptual formulations, as social indicators for phenomena which may not be directly measurable.

The average annual earnings in manufacturing (SALR) was used as a measure of the economic position that the average

person might obtain. This figure may serve both as a comparative base for police income (see below) and as an indicator of the city's general state of economic health. While this variable does not incorporate all of the dimensions of wealth and poverty which the given city experiences, it does provide information about the relative economic climate, and the implications about factors which are necessary to generate such a pay rate (e.g. highly paid alternatives, unionization, regional differences, etc.). As shown in the correlation matrix in Table 3.1, the manufacturing wage was tested for its relationship to other factors as well. Particularly, other economic dimensions including the percentage of families below the poverty level (POV) and the percentage above \$15,000 median family income, along with the median family income (RICH and MY) were used alternately to determine which was the most useful, and to explicate the exact effect of SALR (while people in manufacturing do not really receive salaries, which the label might imply, SALR is an annual average which is used to convey what a manufacturing salary might look like).

As illustrated by the patterns of intercorrelations in Table 3.1, SALR is not as sensitive to the extremes (POV and RICH) as median family income. The r 's for SALR and POV and SALR and RICH were $-.31$ and $.15$ respectively, while the r 's for median income were $-.86$ and $.86$ (POV and RICH). Thus, when a combination of SALR, POV, and RICH was used, excluding median income, in the multivariate model, three different concepts could be incorporated, instead of one. In this way,

it was determined that manufacturing earnings was a much more useful concept, and that the extremes play little or no explanatory role. Thus, POV, RICH, and MY were excluded in the final analysis. Indeed, it was determined that the inclusion of any of these three variables introduced multicollinearity in the multivariate analysis (a problem associated with intercorrelation among the independent variables, see Frank, 1971).

Urban population (UPOP) was selected as a measure of demographic complexity. Contrasted with the s.m.s.a. population, urban population was seen as more appropriate, even given a large commuting population. The most effective and relevant method would have been to adjust the urban population for the number of in-commuters, out-commuters, vacation net gain or loss, and other factors relating to time of day and year, to arrive at the actual "exposed" population. Such data were not available. Rather, urban population was seen as the best average population for the area under study.

The size of the suburban population, however, was viewed as a potential factor. Instead of including just that, however, the suburban contribution to the s.m.s.a. was used, i.e. the ratio of population in the ~~smsa~~ but not in the city under study, to the population of the entire s.m.s.a. Thus, this represents the percentage of the s.m.s.a. which is not in the central urban area (although such population may be in the central areas of other cities included in the s.m.s.a.), and was labelled PPOP. The larger the ratio, the more the exposed population and the greater their contribution to whatever

reporting behavior is observed--i.e. the more their particular reporting characteristics will influence the U/V ratio.

Urban density (DENS) was used as an additional attempt to grasp the concept of urban complexity. One of the concomitants of industrialization and urbanization, population density increases the opportunity for conflict and the opportunity for conflictive interaction with someone whom one might not wish to report. An increase in density, without a corresponding increase in the mechanisms which promote cooperation and coordination, is seen as increasing the likelihood that certain forms of deviance (one of which is non-reporting) will occur. While a denser population, on a practical level, may increase the probability that a criminal will be observed in the commission, various concomitants of this increase also increase the chance that certain acts (e.g. auto theft and burglary) may be observed but effectively go unnoticed. That is, in a dense population, each individual is acquainted with a smaller proportion of the total population, and the probability that any given individual knows "who owns which car" or which people are authorized to enter which houses or businesses is correspondingly lower than in a town without such population dimensions. Whether this particular relationship is one relating to largeness or density is a question upon which the simultaneous inclusion was intended to shed light.

Two additional factors included to incorporate the characteristics of the city were racial and age composition. Based on the theoretical reasoning outlined earlier, and based on NCS findings with respect to age, the age variable was

created by calculating the proportion of the urban population which is under 20. This group was viewed as particularly susceptible to the consequences of normative breakdown.

The percentage of blacks in the urban population was included as an additional measure of urban complexity. The initial theoretical expectation was that blacks, as a disaffected and alienated portion of the population, would rely less upon institutional or formal channels for crime control, which would result in lower reporting and recording rates where blacks are a large proportion of the city under study.

Police Sector

In this sector, an attempt was made to incorporate variables which would be indicative of several dimensions of police influence, police effort, and police susceptibility to bias. These include economic and compositional characteristics, just as the citizen sector.

The relative pay of police officers (PRD) with respect to those in manufacturing was used to reflect the relative position of the average patrolman to the average person in manufacturing--i.e. a measure of relative advantage. It was hypothesized that this measure would yield the relative status of the patrolman and his relative value to the community, compared to that of a "typical" other. One problem with this variable was the numerator, which is the simple average of minimum and maximum pay for police officers. That is, it is not known how many officers are at each level, nor how much officers are receiving at intermediate levels or grades.

Since additional information was not available, however, this was taken as a compromise. Actually, the assumption about equality at both ends may not be too presumptuous, since an entry and exit balance would be necessary to maintain the overall level of police officers, especially in a large city in which a certain proportion reach retirement age each year. Thus, the most problematic assumption is that the increments of pay are uniform and that the distribution of officers is normal about the mean.

A second variable was also economic. The ratio of expenditures to the number of police officers was used to reflect the city's police effort. Alternatively, total expenditures and expenditures per capita were analyzed, but were subsequently seen as less useful, and conveying less information than that which was used (EXP). Total expenditures, of course are not meaningful except as related to other city variables--total budget, population, etc.--and was altered accordingly. Per capita expenditures, while providing more information than expenditures per se, still was not very useful in this model. Greater expenditures per capita can only indirectly be translated into better reporting, and only if money is spend in certain ways. Greater expenditures per capita may only reflect the greater difficulty of management in a large city. Expenditures per officer allowed a measure of how much effort per unit of enforcement is being exerted. Here, greater expenditures per officer can more easily be translated into modernization of recordkeeping (i.e. purchasing of computers, clerical personnel) and perhaps greater

professionalization, having a direct impact on recording while the effect of per capita data would be more indirect, involving more perceptual filters.

The inclusion of non-officer personnel, civilianization (PCIV), provided a variable which is the ratio of civilians employed by the police department to total police department employment. This is a measure of the extent to which the police department relieves the "paperwork" burden of police officers—which should result in better overall correspondence between recorded and reported crime. To clarify this point, if one's only job is recordkeeping, we may expect that job to be done more efficiently (benefits of specialization) than if one's primary function (law enforcement) is "interrupted" by the relatively menial task of recordkeeping. Thus, less resentment of the task is anticipated on the part of civilians who are hired specifically for that job.

A final factor included was the number of police per capita (COPS). This variable is a direct way of measuring the potential visibility of police in the community. Of course, we have no present method of determining whether the police are concentrated in diverse pockets or if they are dispersed evenly with respect to the exposed population. However, it is assumed that the greater the number of police per capita, the greater their visibility, and the more the opportunity for reporting. Additionally, that greater visibility may produce greater confidence that the police may be effective (i.e. if the police are very visible, one may be more likely to report a crime, in that, by virtue of that

presence, the citizen expects that the police will be closer to the problem and available to solve the crime or alleviate the situation).

General Findings

For each of the nine categories of crime, the following regressions were performed:

- (1) $U/V = f(\text{constant, citizen variables, police variables})$
- (2) $U/V = f(\text{constant, citizen variables})$
- (3) $U/V = f(\text{constant, police variables})$

In all cases, due to the large number of variables, the "whole" model (equation 1) explained more variation than either sector alone. However, because of the large number of variables and the small number of observations, many of the variables which are significant in equations 2 and 3 are not significant in equation 1. Whether this is due to the sample size or due to a true null hypothesis, however, is not possible to say without a larger sample. The general results and F-statistics are shown in Table 3.3.

In general, the whole model explains significantly more of the variation than either partial model. F-tests were performed to determine whether or not the results of equation 1 were significantly better than those for equations 2 and 3, for each category of crime. That is, starting with equation 2, for example, this tested whether or not the inclusion of the variables from equation 3 improves the results obtained in equation 1, i.e. whether $U/V = f(\text{citizen} + \text{police})$ is better than $U/V = f(\text{citizen})$ or $U/V = f(\text{police})$.

TABLE 3.3
R-SQUARED FOR REGRESSION EQUATIONS AND SIGNIFICANCE
BY CATEGORY OF CRIME

Category of Crime	Whole Equation	Citizen Equation	Police Equation
Total Crime	.66*	.57*	.36*
Violent Crime	.58	.56*	.37*
Property Crime	.66*	.52*	.34
Rape	.75*	.60*	.62*
Robbery	.47	.46*	.30
Aggravated Assault	.64*	.59*	.40*
Larceny	.66*	.52*	.35*
Burglary	.54	.40	.18
Auto Theft	.42	.25	.10

* Significant at the .05 level

The citizen sector improves the model significantly in every case except robbery, and the police sector improves the model in each case except rape. These F-tests are shown in Table 3.4 and are derived from:

$$F = \frac{S_2}{S_1} \cdot \frac{N - (K + 1)}{p}, \text{ with } N - (K + 1) \text{ degrees of}$$

freedom in the numerator and p degrees of freedom in the denominator. Here S_2 is the sum of the squared residuals from the restricted (single sector) and the unrestricted (whole model) equations, S_1 is the sum of the squared residuals from the unrestricted equation, N is the number of observations (26), K is the total number of independent variables, and p is the number of restrictions (number of variables in the whole model minus the number of variables in the single sector).

The fact that the r^2 from the citizen sector is generally larger than that from the police sector may not in itself be important, since the citizen sector contains 2 more variables than the police sector. Thus, while much of the explanation of U/V may be attributable to the citizen sector variables, an evaluation of the specific coefficients is more appropriate for determining the exact contribution.

Path Analysis Decomposition of U/V

In a strict sense, each of the independent variables is related to U/V because each is related to U and V , and because U and V determine U/V . This relationship is illustrated

TABLE 3.4

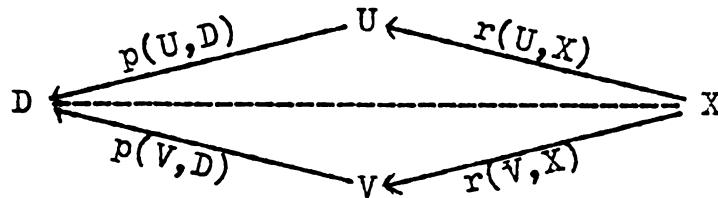
INDEPENDENT AND COMMON VARIATION EXPLAINED BY CIVILIAN AND POLICE SECTORS AND F TESTS OF
SIGNIFICANCE FOR EACH SECTOR IN WHOLE MODEL BY CATEGORY OF CRIME

Crime Category	Whole Equation		Citizen Equation		Police Equation		Common Variation	
	Variation	F	Variation	F	Variation	F		
Total Crime	.66		.30	7.19	.09	8.45		.27
Violent Crime	.58		.21	6.22	.02	4.69		.35
Property Crime	.66		.32	7.39	.14	9.06		.20
Rape	.75		.13	6.34	.15	2.64		.47
Robbery	.47		.17	5.79	.01	7.56		.29
Aggravated Assault	.64		.24	6.67	.05	8.06		.35
Larceny	.66		.31	7.15	.14	9.06		.21
Burglary	.54		.36	6.94	.14	8.63		.04
Auto Theft	.42		.32	6.39	.17	8.62		---

F statistics test the hypothesis that R^2 (whole model) is improved by the citizen and police sectors respectively. $F_{15,4}$ for citizen sector is significant at .05 level when above 5.85 and $F_{15,6}$ for police sector is significant at .05 level when above 3.94. This table was derived from table 3.3 by subtracting R-Squared(Police) from R-Squared (Total) to get Citizen variation, and by subtracting R-Squared(Citizen) from R-Squared(Total) to get Police variation.

by Figure 3.4, in which X is an independent variable (such as COPS or BLK), D is U/V , and U and V are UCR and NCS figures respectively. In this analysis, X is related to both U and V . The extent to which these effects are reflected in D is determined by the relative effects of U and V on D .

FIGURE 3.4
PATH DECOMPOSITION OF U/V



Borrowing from Brown and Fuguitt (1972), who applied this type of analysis for black and white differences, their

$D = W - B$ becomes $D = U/V$. They show that

$r_{DX} = p(W,D) \cdot r(W,X) - p(B,D) \cdot r(B,X)$, where W and B are analogous to U and V , and p is:

$$p(U,D) = \frac{\sigma_U}{\sigma_D} \quad \text{and} \quad p(V,D) = \frac{\sigma_V}{\sigma_D},$$

the path coefficients for our model. Notice that $U/V \neq U - V$, but rather $\log(U/V) = \log(U) - \log(V)$. Thus the U , V , and U/V data are computed in logarithms for this analysis. Hence, it is clear that, in our analysis:

$$r(\log D, X) = \frac{\sigma_{\log(U)}}{\sigma_{\log(D)}} \cdot r(\log U, X) - \frac{\sigma_{\log(V)}}{\sigma_{\log(D)}} \cdot r(\log V, X).$$

Using the information provided in Table 3.5, we find that the correlation of the log of U/V for total crime and BLK is .50. This .50 may be understood because an increase in BLK raises U while decreasing V , thus increasing U/V . The extent of this effect ($r_{\text{BLK},\log(U)} = .06$, $r_{\text{BLK},\log(V)} = -.15$) will be mitigated by the path coefficients, which are $p_{\log(U),\log(U/V)} = 2.16$ and $p_{\log(V),\log(U/V)} = 2.29$. Applying the equation for $r(\log D, X)$ on page 70, we find that

.50 = $2.16(.06) - 2.29(-.15)$, which is the correlation coefficient obtained from the direct path.

Thus, the effect of the proportion of blacks may be seen as occurring because of its differential effects on U and V . Of course, there has not been postulated a logarithmic relationship between U/V and the independent variables. From a theoretical standpoint, however, logarithmic transformations are necessary in this analysis to effect the identity of U and V with U/V while retaining the fundamental equation for path analysis. Additionally, the logarithmic relationship may be somewhat justified in that the zero order correlations between the unlogged independent variables and the logged dependent variables are very similar to the correlation coefficients obtained in Table 3.1, in which nothing is logged; e.g. $r_{\text{BLK},U/V}$ from Table 3.1 for total crime is also .50.

Hence, while the discussion presented below focuses on U/V as a measure, it is implicit that the U/V behavior is determined by the effects of both U and V . In fact, for practical purposes, much of the following discussion takes V as

TABLE 3.5

ZERO ORDER CORRELATION MATRIX OF SELECTED INDEPENDENT AND DEPENDENT
VARIABLES WITH LOGARITHMIC TRANSFORMATIONS

Independent Variables	Violent Crime		Property Crime		Total Crime				
	<u>LOG U</u>	<u>LOG V</u>	<u>LOG U/V</u>	<u>LOG U</u>	<u>LOG V</u>	<u>LOG U/V</u>			
BLK	.28	.003	.53	.01	-.19	.45	.06	-.15	.50
PCIV	-.22	-.31	.14	.03	-.13	.36	-.03	-.17	.31
COPS	.47	.29	.38	.15	.07	.17	.23	.11	.24
SALR	-.23	-.09	-.28	-.21	-.06	-.31	-.22	-.08	-.30

72

TABLE 3.6

MEANS AND STANDARD DEVIATIONS FOR SELECTED DEPENDENT VARIABLES

Statistic	Violent		Property		Total				
	<u>LOG U</u>	<u>LOG V</u>	<u>LOG U/V</u>	<u>LOG U</u>	<u>LOG V</u>	<u>LOG U/V</u>			
Mean	8.960	10.000	-1.040	10.566	11.768	-1.202	10.765	11.934	-1.169
Standard Deviation	.928	.872	.477	.685	.730	.320	.709	.752	.328

given and considers how intervening factors affect whether or not it is translated into U--i.e. factors that tend to reduce V to that level which is reported as U.⁷

Analysis of Propositions

The large number of independent variables and the small sample size combined to make many of the coefficients estimated in equation 1 insignificant. This occurs because so many variables are included to explain the variation that their influence is spread thinly. Thus, with so many variables, only a larger sample size would allow one to speak with any confidence about the results. Therefore, in this section, we look only at the coefficients estimated by equations 2 and 3, leaving the results of equation 1 for the appendix. The results of equations 2 and 3 are shown in Table 3.7 and 3.8.

Reporting and Manufacturing Wages--SALR

In all cases except auto theft, the coefficients for manufacturing wages were negative. They were significant (.05) for total, violent and property crime, along with aggravated assault and larceny.

In the case of this variable, a negative coefficient means that as upward movement occurs in the independent variable, a downward movement occurs in the dependent variable, all other things remaining constant--i.e. as SALR increases, U/V moves down, away from 1. On the average, SALR was approximately \$10,524, and varied from \$7,000 to \$12,000. As shown in Table 3.7, in each of the equations, the SALR coefficients

TABLE 3.7
ESTIMATED COEFFICIENTS AND T STATISTICS FOR CITIZEN SECTOR
REGRESSIONS BY CATEGORY OF CRIME

Category	Constant	SALR	UPOP	BLK	AGE	DENS	PPOP
Total Crime [*]	.9000	-.00004	-.00001	.0038	-.0119	.000003	.1591
T Statistic	2.44	-2.67	-.394	2.96	-1.69	.50	.74
Violent Crime [*]	1.5520	-.0007	-.00003	.0678	-.0238	.000007	.1640
T Statistic	2.34	-2.49	-.757	2.92	-1.88	.74	.42
Property Crime [*]	.8458	-.00004	-.000003	.0033	-.0110	.000001	.1556
T Statistic	2.37	-2.51	-.139	2.65	-1.61	.26	.74
Rape [*]	-.2345	-.00003	.00003	.0054	.0071	.00001	.1556
T Statistic	-.375	-1.28	.628	2.45	.598	1.26	1.61
Robbery [*]	.721	.00002	-.000002	.0048	-.0114	.000005	.1340
T Statistic	1.43	-1.12	-.06	2.73	-1.18	.684	.459
Aggravated Assault [*]	3.169	-.00018	-.00015	.01237	-.0439	.00003	.031
T Statistic	2.27	-3.09	-1.57	2.54	-1.65	1.41	.16
Larceny [*]	.9990	-.00005	-.00002	.00414	-.0131	.000004	.0906
T Statistic	2.30	-2.53	-.509	2.73	-1.58	.587	.36
Burglary	.650	-.00003	.00001	.0018	-.0078	-.000002	.261
T Statistic	1.98	-.95	.512	1.55	-1.25	-.45	1.46
Auto Theft	3.472	.00001	.000005	.0071	-.0584	-.00001	.4536
T Statistic	2.68	.196	.545	1.56	-2.36	-.59	-.60

Variables are as defined in Figure 3.3. T Statistic is significant at .05 level when it is greater than 2.09, absolute value.

^{*} Indicates that equation was significant at the .05 level.

are all on the order of magnitude of 10^{-4} and 10^{-5} , very similar. For total crime, the coefficient is approximately -.000041. This means that for every \$1 increase in manufacturing wages, the U/V ratio decreases by .000041. Thus, if SALR is 10,000 and U/V is .329 (total from Table 3.2), then a 1000 increase in SALR will decrease U/V from .329 to .288.

What this means is that manufacturing earnings is an effective variable whose one or two thousand dollar inter-city variations may account for a large amount of variation in U/V. The better the average economic position, the lower the rate of translation of V to U, i.e. U/V. The effect is especially noted for aggravated assault, whose coefficient is -.00018.

What does this mean? Basically, especially for aggravated assault, greater income corresponds with less tendency to translate crimes reported in the victimization survey into "crimes known to the police." This may be explained in several ways. The NCS reports found that higher income groups typically are more apt to report property crime, but are less likely to report violent crime. The fact that manufacturing wages' greatest effect is on aggravated assault--i.e. that with a large potential for victim culpability and offender sympathy--supports this.

However, the fact that a negative coefficient exists for property crime contradicts the expectation conveyed in proposition 1. It was expected that higher income would be associated with higher U/V ratios. What may in fact explain this is something which the data used here can not reveal.

That is, rather than higher income being associated with greater confidence in the police and higher average losses (i.e. the more you have, the more you lose), it may be that average losses are not higher for such groups. If, for example, the average larceny loss is \$45 for all income groups, then that \$45 represents a smaller fraction of a high income than a low one. Consequently, the higher the income, the less salient such losses. Unfortunately, the data do not allow the testing of this idea.

Reporting and Population Size---UPOP

Urban population has a negative coefficient for six of the crime categories, as shown in Table 3.7, but is not significant in any case. If the sample were larger, it might be possible to make some inferences based on the fact that most of the coefficients are negative (the expected direction); however, at the .05 level, one can not be confident that the coefficient for urban population is significantly different from zero. It was considered that the inclusion of urban density (see below) may have "washed out" the effect of UPOP, due to their moderate correlation (.64). However, when each was dropped from the model, the coefficient of the other did not significantly improve.

One note of interest is the fact that, while insignificant at the .05 level, UPOP was significant at the .15 level for aggravated assault. For this crime, more than others, urban population was expected to have an effect on the U/V ratio. Increased numbers of people increases the number of

conflictive opportunities, which was expected to decrease the likelihood that victimizations would be viewed as "important enough" to be translated into official crime reports. Such an effect can not be ruled out by this analysis, and given an expanded data set, warrants further examination.

Reporting and Racial Composition--BLK

The proportion of blacks in the population had a result which was contrary to the theoretical expectations of proposition 6, citizen sector. The coefficient for BLK was decidedly positive in every case, and was significant in seven of the nine crime categories (all except burglary and auto theft). From Table 3.7, we see that the total crime coefficient for BLK was .0038. BLK ranged from 5.8 (Portland) to 76.3 (Washington, D.C.), and the U/V ratios for Portland and Washington were .32 and .52, respectively. With a $76.3 - 5.8$ or 70.5 difference, we would expect, based on Portland's .32 U/V ratio, for Washington to have a U/V ratio of $.32 + 70.5 \times .0038$, or .58. As evidenced from their actual values, such an effect is present.

Thus, a population with a higher proportion of blacks experiences a higher level of victimization to official report translation. Given the wide variations in the proportion of blacks, this effect can be significant, as illustrated by Portland and Washington, in which the BLK variable would explain a U/V increase from less than 33% to nearly 60%. However, the theoretical expectations were that blacks would be associated with lower U/V ratios. That expectation focused on

blacks as an alienated or disaffected group which distrusts the police and does not rely on them. Does this mean that blacks have more active reporting habits than whites? Not necessarily.

What is happening may be explained in part by two issues. The theoretical expectations focused on blacks primarily as a reporting group. However, it is possible that blacks involved more as a perceptual factor. First, it is possible that a larger proportion of blacks results in greater enforcement--i.e. a white police department expects more crime from a heavily black population and is more likely to record such crimes than crimes committed by whites. This effects a higher rate of translation from V to U. Since the statistical probability is that in a population with more blacks, more crime is committed by blacks, it follows from previous findings that black crime is reported more than white crime, and that more blacks mean more crime in the official reports. This does not mean that more blacks commit crime than whites. It simply means that black crime is subject to a higher rate of V to U translation than white crime, and that, even if blacks and whites commit crime at the same rate, more of the black crime will be transformed from victimization to official reports.

A second issue bears on the influence of reporting habits. That is, the presence of blacks may encourage whites and blacks to report crime more--i.e. a crime is more salient and less likely to evoke sympathy or empathy with the offender if the offender is of a different race than the victim. With a

larger proportion of blacks, the probability of interracial crime increases. In the case of interracial aggravated assault, for example, the typical situation of family member-provoked assault and victim-offender relationships is effectively eliminated in most cases. Conversely, in all-white or all-black cities, there is a greater probability that assault is intraracial and does involve someone related to the victim. Thus, the effect detected in this analysis may be that whatever reporting habits the blacks may have as a group (presumably lower than whites), that effect is negated by their perceptual impact on the community and the police in increasing the probability that victimizations will be officially reported, both through the police and through the citizens.

Reporting and Age Composition--AGE

The proportion of persons below 20 was expected to be one of the more significant variables in the analysis, having been indicated as a factor by the NCS reports. However, in this analysis, AGE was shown to be insignificant at the .05 level in every case except auto theft. Age should not be dismissed too quickly, however. The coefficients for AGE were uniformly negative--the expected direction. Additionally, as in the case of UPOP, several coefficients were significant at the .15 level (total, violent, property, assault, larceny). A larger sample could very well provide us with confidence about these coefficients. Even so, the effect would be very difficult to detect both because of the low value of the

coefficient (.0118 for total crime) and because of the small amount of variation in age from city to city: the extremes were 27.2% for San Francisco, and 43.6% for Newark.

From NCS findings, it was suggested that young people would have lower reporting rates, which would help to effect a lower U/V ratio. This may have been due to several factors. The most obvious is the stereotypical view of the young as a group which distrusts the police and has a lower stake in society's rules. There is also, perhaps, greater fear among the young that dealing with crime at the legal level may get them into trouble with peers or the police, or that their age will mitigate their believability. Additionally, offenses against young people may be more likely to be committed by friends or family--wherein the fear of reprisal may play a large part. On the macro level, then, AGE was expected to be associated with factors which reduce the probability that an even will be translated from victimization status into "official" crime. The consistently negative coefficients indicates that such a relationship can not be ruled out, but must wait for testing with a larger sample.

Reporting and Urban Concentration--DENS

Urban density was insignificant in every equation, and had essentially the same results as urban population. As pointed out earlier, the dropping of either variable did not improve the results of the other. This might be explained in several ways.

The blurring of urban boundaries, the existence of high rise apartment buildings, and the general variance between neighborhoods may be too complex to allow density to be a clear cut factor, from city to city. That is, urban density may be quite low in some parts of the city, and quite high in others. Similarly, the U/V ratio in those parts of the city may be different from that in contrasting sectors. Thus, if density has any independent role, it is possible that it is simply not being measured adequately in this analysis. Rather a whole city density of 9,000/square mile may indicate a city with uniform density throughout, as well as a city with pockets whose density approaches 50,000/square mile but with large unpopulated parks. This possibility warrants consideration, but is too complex for the relatively less refined data which are currently available.

Reporting and the Suburban Contribution--PPOP

In this analysis, the suburban element was found to be an insignificant factor. While its coefficients are positive for all cases except auto theft, it is not possible to confidently draw any conclusions. Only in the case of rape was PPOP significant at even the .15 level. Here, this result might be due to the fact that a larger proportion of non-residents reduces the probability that the victim is acquainted with the rapist, and consequently increases the probability that the victimization will become part of the official crime records. Beyond this hedged inference, however, any conclusion would be tenuous.

Recording and Relative Pay--PRD

The ratio of police to manufacturing earnings was positively correlated with the U/V ratio in every case except auto theft, but was significant only for aggravated assault. Aggravated assault, however, does not appear to contain any special characteristics which would single it out for significance. Particularly, larceny was expected to be more clearly related, since the relative economic position of the police was expected to influence the U/V in cases in which recording was expected to be especially susceptible to bias. However, larceny was not even significant for PRD at the .15 level.

A better relative economic position of police officers was expected to be related to conditions leading to more professional conduct--including their processing of criminal statistics. Perhaps a higher relative wage does indicate greater value of the police to the community, indicated by the community's willingness to pay a higher wage to them than to the manufacturing worker. In the case of aggravated assault, then, the greater perceived status of the police may increase the V to U translation, by increasing the probability that the public will call in the police when such crimes occur. There may also be some effect in that the perceived higher status is perceived by the police as well as the public, affecting both sectors.

Recording and Civilianization--PCIV

Civilianization provided positive coefficients for each category of crime, which were significant for total, property, rape and larceny. The percentage of civilians employed by police departments varied from a low of 1.9% for Pittsburgh to a high of 27.9% for Oakland. The estimated coefficient for total crime was .773, as shown in Table 3.8. Thus, given Pittsburgh's 1.9% PCIV, and its U/V of .255, and Oakland's PCIV of 27.9%, one would expect the Oakland U/V to be $.255 + (.773) \times (.279 - .019)$, or .455. This compares favorably with Oakland's actual U/V of .408.

Conceptually, PCIV was expected to have a positive effect on U/V--more civilians reduce the burden on police officers and also represent a department's greater commitment to developing their data collection methods. Clearly, such an effect is possible here. The use of civilians instead of police for recording purposes in effect reduces the effect of bias, which is one of the perceptual filters which mitigates the V-U transformation. Thus, the U/V ratio increases as civilianization becomes more prevalent. More detailed expectation might provide that PCIV's greatest effect would be to increase the translative processing of those crimes which are ordinarily most subject to reclassification--i.e. those winding up in categories other than what the victim reported--such as aggravated assault. A crime such as burglary, the nature of which may be considerably less ambiguous, has a significantly lower PCIV coefficient than assault and larceny.

TABLE 3.8

ESTIMATED COEFFICIENTS AND T STATISTICS FOR POLICE SECTOR REGRESSIONS
BY CATEGORY OF CRIME

Category	Constant	PRD	PCIV	EXP	COPS
Total Crime [*]	-.215	.221	.773	-.0056	.0597
T Statistic	-1.77	1.42	2.16	-.87	2.72
Violent Crime [*]	-.612	.320	1.284	-.013	.123
T Statistic	-1.78	1.70	1.37	-1.56	3.14
Property Crime	-.151	.176	.858	-0.004	.050
T Statistic	-.832	1.25	2.33	-.45	2.32
Rape [*]	-.38	.080	1.200	-.0003	.1663
T Statistic	-1.46	.39	2.46	-.04	5.61
Robbery	-.08	.096	.560	-.004	.084
T Statistic	-.32	.57	1.03	-.41	2.95
Aggravated Assault [*]	-1.995	.873	2.693	-.025	.226
T Statistic	-2.75	2.42	1.18	-1.18	2.91
Larceny [*]	-.301	.2409	1.013	-.006	.065
T Statistic	-1.35	1.48	2.30	-.63	2.48
Burglary	.109	.076	.585	-.002	-.024
T Statistic	.66	.536	1.80	-.15	-1.17
Auto Theft	1.39	-.283	.448	.013	.063
T Statistic	2.27	-.87	.77	.87	.94

Variables are defined in Figure 3.3. T statistics are significant at .05 level when they exceed 2.08, absolute value.

^{*} Indicates that equation was significant at the .05 level.

In general then, PCIV is an effective variable whose city to city variations tend to explain a significant amount of the variation in U/V.

Recording and Financial Effort--EXP

The level of expenditures per officer was negatively related to U/V for everything except auto theft, but was also insignificant in every case. Although we may not speak with any confidence about the EXP results, the fact that a larger sample could have yielded significant results is worth mentioning--especially since the relationship obtained was contrary to the theoretical expectations.

What may explain this finding is the possibility that EXP is not in itself an effective factor, but is a proxy for some other factor not already identified in the model. Particularly, that factor might be the seriousness of crime, in that the community elects to spend money based on a perceived crime problem, one dimension of which is the failure to involve the police in crime control. If this were the case, then one would expect the EXP variable to be related to the U/V ratio (even as a general measure of a "problematic" dimension) much as it appears to be. Additionally, one might expect a weak relationship to exist if a given factor has an independent effect and is acting as a proxy for another variable. In this case, even if EXP is a substitute for the seriousness of crime or some other social condition related to U/V, that relationship might be obscured due to a counter effect of EXP itself, in which EXP does increase the U/V,

when controlling for the level of seriousness. Because EXP appears to contain potentially both factors, it was not possible to test such effects without a new variable, such as crime seriousness for each city, which was not available for this study.

Recording and Police Concentration--COPS

The number of police per capita was significant in every category except burglary and auto theft. The hypothesized relationship was discovered in all cases--positive. COPS ranges from a low of 1.34 per 1000 for San Diego to 6.73 for Washington. Looking at the coefficient for this factor for aggravated assault, we find that it is .226. If the number of police per 1000 were to be increased from 1.34 to 6.73, then the resultant change in U/V would be an increase of around 1.21. In this case, using San Diego as a base, one would expect Washington to have a U/V assault ratio of 1.37 (San Diego U/V = .16). This is not totally different from Washington's actual assault U/V of .99.

In general then, we find that police concentration does have a very significant effect of reducing the barriers to a high U/V ratio. Analyzing more closely, the effect on property crime was somewhat less than the effect for violent crime. To understand this, it is necessary to recall the fundamental contrast between the two types of crime. Property crime itself frequently needs to be pointed out, whereas many types of violent crime are obvious to a bystander. Thus, a large number of police whose job it is to

detect crime, increases the probability that such crimes as rape, assault, and robbery may be discovered, and reported, at a steeper rate than property crime. It may also increase the opportunity for finding a police officer soon after a crime has been committed. Thus, a heavy concentration of police tends to "saturate" the community, and reduce the opportunity for perceptual factors to intercede between U and V.

The larger effect may also be due to the fact that greater police visibility differentially affects the two types of criminal. On the violent side, crimes are motivated by passion and anger, except robbery which has a lower coefficient than either rape or aggravated assault. The property criminal, on the other hand, generally thinks the crime out in advance. Since his crime is more "rationally" planned, he tends to get caught less and to be especially wary of the police. Thus, where crimes occur more spontaneously, as rape and aggravated assault, the greater police visibility is expected to greatly enhance the prospects of "accidental" or proactive discovery, while such greater visibility may have the effect of making property criminals more careful.

Analysis of Separate Crime Equations

For each of the various categories of crime investigated, differences were found as to what best explained each type of crime, as well as certain common sources of variation. In this section, each category is discussed showing how much variation is explained, and analyzing the relevance of

particular variables within each equation. As shown in Table 3.3, equation 1 was significant for total and property crime, rape, assault and larceny. Equation 2 was significant for all except burglary and auto theft. Equation 3 was significant for total and violent crime, rape, assault and larceny. Thus, the only crimes whose variation in U/V was significantly explained in all three equations were total crime, rape, assault, and larceny. Burglary and auto theft were not significantly explained at all.

Total Crime

Variation in the U/V ratio for total crime (which includes rape, robbery, aggravated assault, larceny, and burglary) was significantly explained by all three equations, as shown in Table 3.3. Because of the large number of variables and the relatively small sample, however, only one of the coefficients in equation 1 is significant, while two each are significant for equations 2 and 3. Actually, whether the significance of manufacturing wages, civilianization, and police concentration disappears due to increased control, or due to the small sample is difficult to say from this analysis. That the percentage of blacks remains significant, however, does point to it as a crucial factor in explaining the U/V variation from city to city.

From the citizen sector, equation 2, SALR and BLK best explain the variation in U/V for total crime. As pointed out earlier, the effect of manufacturing wages is difficult to sort out, especially in that its effect was different from

that postulated, as was the percentage of blacks. It would appear, based on the explanations given earlier, that both variables may be acting at the perceptual level. That is, one of the basic assumptions of this thesis was that U/V variation would be mostly determined by city composition--i.e. that the reporting habits and characteristics of the population would determine the level at which U/V would be found for each city. Rather than being indicative of composition, however, these variables appear to be factors to which the population is reacting. Instead of race acting as a factor which decreases the U/V ratio, by virtue of lower normative agreement with the legal system among blacks, the larger number of blacks acts to increase the sensitivity of the community. This comes about because the presence of blacks increases the amount of interracial crime and makes recording and reporting of crime more likely. This effect is repeated throughout all categories.

Similarly, the manufacturing wage variable may be a perceptual variable. That is, by increasing the wages, assuming (no data available) that the average loss is constant, the relative loss decreases. This would have the potential effect of making the loss less salient to groups earning higher incomes.

While many of the variables lose their significance when moving from either equation 2 or 3 to equation 1, it should be emphasized that the whole model does explain significantly more variation than either of the individual sectors. As

shown by the F tests in Table 3.4, if we begin with either sector, and test the null hypothesis that the additional variables from the other sector do not significantly alter the results, we reject the null hypothesis. U/V variance is significantly more explained by the ten variables than by the six from equation 1 or by the four from equation 2.

If we begin with either side and add in the other set of variables, we find also that 9/66 of the variation is explained by the police sector, 30/66 by the citizen sector, and 26/66 by variation which is common to both sectors. This analysis is shown in Table 3.4. One of the important features of this finding is that neither side is acting in total isolation from the other--much of the explained variation is common to both sectors. What this may indicate is that factors located in either side are in some way interacting with factors in the other sector, creating a certain amount of common variation. The extent of this which is common and the extent which is purely interactional can not be revealed from this, however.

Violent Crime

As was the case for total crime, the complete model diminishes greatly the significance of the coefficients. In this case, none of the equation 1 coefficients are significant, while SALR and BLK are significant for equation 2, and only COPS is significant for equation 3. In this instance, the police sector and citizen sectors improve the model. 21/58 of the variation is explained by the citizen side alone

while 2/58 and 35/58 are explained by the police side and common factors respectively. As shown below in the discussion of the individual violent crimes, if we assume that the interaction between the two sectors to be large--i.e. that certain population characteristics coincide with such factors as police concentration to increase the probability that victimizations will be translated into official crime--violent crimes whose reporting is especially problematic due to ambivalent motivations are especially susceptible to such "interaction" which may partially account for the large amount of common variation. This contrasts notably with the smaller common variation found for property crime, shown below.

Property Crime

Combined burglary and larceny is significantly explained by the complete model and citizen sector. As was the case for total crime, only BLK is significant in the complete equation, while BLK and SALR and PCIV and COPS are significant within the individual sector equations.

Most interesting is the much smaller common variation found for the model. Each sector improves the model significantly, as shown in Table 3.4, but the separate effects of the sectors are more distinct, with only 20/66 common. This may be due to the fact that property crime depends much less on proactive discovery, and that most of the personal motivations which might affect the U/V ratio (from the citizen sector) affect the U/V for violent crime. When

property is taken or a home is burglarized, the reporting depends more upon the individual characteristics within each sector than upon the features shared in common. Thus, more of the U/V variation will be explained by common variation for violent than property crime. In general, then, one might conclude that the more ambiguous the crime, the more influence the police can have in effecting a change in U/V.

Rape

Of the nine categories of crime, rape was by far the best explained in terms of R-squared. In equation 1, civilianization and police density were significant, in equation 2, only BLK was significant, and in equation 3 PCIV and COPS were significant. By far the most influential variable was police density.

The most interesting finding here is that almost twice as much variation is explained by common factors as by both individual sectors combined--citizen sector 13/75, police 15/75, and common 47/75. Curiously, even though the police sector has a marginally higher R-squared, adding it into the model was not significant. This is surprising in view of the fact that the citizen sector only had one significant coefficient and which was less significant than either of those on the police side (although all are significant at least at the .05 level).

The primary thrust of the results of this analysis is support for the idea stated above, that for crimes such as rape, the influence of the police is essential in obtaining

crime reports. Rape victims in general are reluctant to report and even more reluctant to prosecute, primarily because of the ordeal which they may face, coupled with the social stigma of rape. Consequently, the availability of police near or soon after the incident may improve the probability that the victimization will enter the legal system. The influence of the civilianization factor may be significant also, but not enough is known about the individual cities to gauge that importance. Particularly, some police departments may have special personnel who deal with rape and assault victims, which may have an effect on increasing the U/V ratio.

Other factors which may come into play but which are not brought out in this analysis would include the number of women in certain age groups, the number of men between 18 and 29, or the existence of "rape crisis" centers. Any number of factors may help account for the large common variation between the two sectors, and which may differ from city to city. With such a small sample, however, even if other data were available, the multiple partitioning of the sample could very well limit the chances of discovering such relationships.

Robbery

In contrast to rape, robbery was not significantly explained by the whole equation nor by the police sector. None of the equation 1 coefficients were significant, while only BLK and COPS were significant from equations 2 and 3 respectively. Although robbery is a violent crime (use of aggravated assault coupled with larceny), its motivations differ from

those of other violent crimes. Thus, one expects certain aspects of the U/V ratio to be different.

In this case, most of the variation explained by the police sector was common with that of the citizen sector, with 1/47 in the police sector, 16/47 citizen, and 30/47 to the common variation. As with the other violent crimes, the common variation is high. Additionally, both sectors improve the model (if we round to 1 significant digit for the citizen F and critical level).

One factor which might explain the common variation is fear. In general, we are acquainted with the theatrical stereotype of the robbers who tell their victims that they will be killed if the police is called. One possibility is that such is not simply theatrics, perhaps fear does play a role. Thus, if more police are present, perhaps even to proactively discover a robbery in progress (COPS is significant), the victim does not have a choice, and the victimization automatically becomes involved in the legal system. Additionally, racial resentment may play a role in that a robbery committed by someone of a different race evokes more hostility and a greater tendency on the part of the population to report.

Aggravated Assault

Equation 1 for aggravated assault explains 64% of the U/V variation, which is significantly higher than that explained by either sector alone. Significant variables were BLK for equation 1, SALR and BLK for equation 2, and PRD, EXP, and COPS for equation 3. The citizen sector explains

24/64 of the variation, the police sector 5/64 and common 35/64.

Similar to the results obtained for rape, in that the common variation is quite large, aggravated assault's translation from V to U depends upon a number of factors which may not be included in the model--i.e. which are manifested in the interaction between the two sectors. Of interest, in addition to the conclusions provided above, is the fact that PRD and EXP are significant here. Police expenditures are negatively related, which may be, as indicated elsewhere, an indication of the level of crime seriousness. This type of effect may be noted in a city like New York, for example, where muggings occur frequently and are seldom reported (U/V for New York is .18 compared to 26 city average of .50). In New York, in reaction to the perceived crime problem (which may be especially emphasized by the number of people who accept muggings as "normal"), much money is spent. Thus, we find that expenditures are related to the U/V ratio, but that the line of causation is probably reversed.

For the relative pay of police officers, on the other hand, the surplus of police over manufacturing pay may indicate higher status of police officers, and a greater willingness to involve the police or rely upon them in cases of assault or domestic conflict. That is, the higher the perceived status of the police, the greater the public confidence in their ability to handle matters, and thus the higher the U/V ratio. This may be especially true in cases of aggravated

assault in which the situation may be very ambiguous. That is, if the police are a well-respected group, that fact (as indicated by PRD) may be the crucial factor in helping to persuade the public to accept or request police help. The importance of this may be illustrated by contemporary examples in which some police manage to exacerbate a situation while others seem to calm the disagreement. Particular cities may acquire a reputation for having short-fused police, such as Philadelphia, which has a PRD of 1.25, while others have a reputation for having cool-headed police, such as New York, which has a PRD of 1.5.

Larceny

Larceny is the most frequent of all crimes, and has the lowest U/V ratio. However, it is the only property crime whose U/V is significantly explained--and it is explained in all three equations. Each sector improves the overall R^2 significantly. The citizen sector accounts for 31/66 of the variation, police 14/66, and common 21/66. As indicated earlier, while larceny is under-reported and recorded, that fact is less likely to be subject to the complex interaction of citizens with the police than are violent crimes.

Here, for equation 1, only BLK was significant, for 2 BLK and SALR, and PCIV and COPS for equation 3. While the larceny equation contains some of the same variables which were significant for violent crime, the exact effect is explained differently. As before, the BLK and SALR variables operate as explained under the property crime heading. The effects of COPS and PCIV, however, may operate more as

dynamic variables. That is, their effects are in more than one area.

In the case of civilianization, for example, the theoretical expectation was that a large civilian employment would increase the accuracy of criminal statistics, which has a direct impact on the U/V translation. Secondly, this additionally has the effect of increasing the amount of time the police may spend on the streets, thus increasing their visibility, and perhaps increasing the perceived effectiveness of the police in dealing with crime. This second effect is compounded by the variable COPS which may be seen as having a two tier effect.

First, police concentration may have the effect of making the average policeman's job easier, by reducing the relative burden--i.e. 4 police per thousand, other things being equal, distributes the work more easily than 2 per 1000. If this fact is perceived by the public, we get the additional affect that they will respond to the greater availability of the police by increasing the V to U transformation. This second effect, the perceptual, is seen as especially important in that it provides the greatest producers of the discrepancy--the public--with the means and incentives to report more.

Burglary

Like larceny, burglary is one of the least reported and most common crimes. Unlike larceny, however, the U/V variation could not be significantly explained by the model, nor

by either sector. Here, none of the coefficients were significant. It is quite possible that a complex series of factors have been left out of the model which relate especially to burglary in the commercial sector. Particularly, insurance rates might tend to explain some of the underreporting. If insurance rates in the commercial sector are high and are keyed to crime experience of specific establishments or neighborhoods, then a commercial operation would have less motivation to report a burglary--given that rates might rise. This might be less the case for businesses which experience large losses through burglary or the loss of sensitive goods, such as alcohol and firearms. Unfortunately, not enough of these concepts or others which might be relevant are included in the model to explain burglary.

Auto Theft

Unlike all the other crimes, auto theft is overreported, as explained earlier. A specific rationale used for this thesis was geared to explain underreporting and consequently, the model does not contain features to explain the overreporting phenomena. In the equations, only AGE was significant, for equations 1 and 2. We might expect some relationship to exist here because a higher population concentration of teenagers and adolescents may increase the probability that reported auto thefts are not really thefts--i.e. that unauthorized family members "borrow" the car. The larger the under 20 proportion, then, the more likely this phenomenon, and the lower the U/V ratio for auto theft.

Comments about the Predictability of Victimization

Three separate attempts were made to determine whether or not reliable estimates for victimization rates could be obtained based simply on the uniform crime rates and population characteristics and police characteristics, as those used in the body of this analysis. The amount of error, however, was substantial. In particular, some cities, such as Miami (with an aggravated assault U/V which exceed 1) defied explanation in terms of the variables used, thus increasing the discrepancy between the victimization rates estimated here and those found in the NCS.

So, while it is possible to generate victimization rates for total crime which are subject to an 8.3% average error (see appendix), the actual effect would be to unjustifiably constrain all of the elements to a pattern which does not necessarily fit. There is substantial variation which needs to be explained before such is done. To utilize the estimates produced by these procedures might allow an "educated" guess about what the pre-filtering victimization level is, but this would not be very useful for detailed analysis. Too much variation might be related to factors not discussed here, leading one to miss important relationships. A description of the prediction method, and selected results are presented in Appendix 2.

Summary of Findings

In general, this study found that the discrepancy between the UCR and NCS crime figures, as measured by U/V, may be

partially understood by reference to four major factors: economic level, racial composition, police civilianization, and police density. Most importantly, it was found that most influential factors which operate on the U/V ratio are perceptual variables, which alter the public's awareness of the police and crime, and consequently affect their reporting habits.

It was also found that the perceptual interaction between the police and the public will have its greatest impact where crimes are ambiguous, such as rape and aggravated assault. Therein lies the greatest potential for police involvement with the public for increasing reporting. Direct effects of the police variables--civilianization and reduced workload--are most likely in unambiguous situations, i.e. where calling the police is not mitigated by personal motives such as personal culpability and sympathy with the offender.

Unfortunately, much of the potential for investigating and expanding these findings is limited by the sample size. A larger and more detailed sample could provide the opportunity to clarify, support, or reject some of the apparent relationships which have been deduced.

CHAPTER 4

SUMMARY AND CONCLUSIONS

The Problem

Since the inception of the Uniform Crime Reports in 1931, much controversy has surrounded its methodology and dissemination. The critics pointed to the wide amount of bias and discretion, and in some cases the large potential for falsification and manipulation of data, subject to political, economic, and social pressures. While some have accepted the UCR unquestioningly, others have used them only grudgingly because no alternative existed.

As a result of the culmination of various criticisms, and in order to meet a collection of administrative and public needs, the government initiated victimization surveys in 1967. The surveys sampled a huge variety of households and commercial establishments in order to determine the level and frequency of victimization in the U.S. After much pre-testing and experimentation, a method was developed which the researchers believe maximize the opportunity for obtaining reliable estimates of the amount of victimization in the U.S. Those estimates revealed what many had anticipated--the level of victimization was much higher than the level of crime one might infer from the UCR.

Just as was the case with the UCR, much criticism has surfaced regarding the victimization survey methods. Unlike that of the UCR, however, some have claimed that the surveys may be counting too much, while others maintain that under-

counting is present. In any event, the expense of the surveys has prevented us from obtaining the extent of coverage found in the UCR. Thus, the official crime statistics still remain the principal choice for many researchers.

In recent years, some researchers have turned their attention to comparisons of the data available from these two sources. Skogan and Hindelang, for example, have indicated that, for many types of analysis, even though the discrepancy was large, the NCS and UCR data will yield similar conclusions. This is true because of the high degree to which the two rates are correlated.

To stop at this point, however, would be to commit a very serious error. To constrain all conclusions to the common variation of these two measures is to assume that the differences which are present do not in any way bias the results. That is, although high, the UCR and NCS correlations are not perfect. To assume that the remaining variation is not significant would be premature at best.

If, for example, there could be found factors in the population which were associated with higher and lower amounts of discrepancy, then an assumption of randomness of the discrepancy would lead us to dismiss a significant set of relationships.

In this context, then, this thesis sought to probe the relationship between the two rates, to explicate, if possible, the discrepancy, and to determine whether or not the analysis must be constrained by the common variance of the two measures.

The Theory

Through a long tradition of research, sociologists and other social scientists have come to rely upon certain forms of empirical research to make inferences about particular phenomena. Various states of a society's health or well-being it is believed, can be measured or indicated by such data, as they pertain to the whole community. Nowhere is this more prevalent than in the routines of those who formulate and evaluate public policy--those who aggregate data to summarize the impact of broad policies and to infer social needs.

Durkheim claimed that such aggregate rates could be used to indicate the moral relations of society. He believed that certain sets of factors would be present in correlated combinations where certain underlying dimensions were at work. Hence, high rates of suicide might be correlated with high rates of unemployment, indicating the presence of some form of anomie. Such applications, Durkheim extended to suicide and crime rates, and their relationship to the distribution of the population with respect to number, religion, sex, and other socio-demographic characteristics.

It was theorized here that, in the same way, the discrepancy between the two rates of crime is a measure similar to crime itself. That is, the relative discrepancy could, in itself be used to indicate the state of society. Further, it was proposed that this could be demonstrated by showing the relationship between the discrepancy to other factors in the social system.

Simply put, the discrepancy exists because the same stream of events is being measured at two distinct points. The discrepancy results from various kinds of "filtering" which occurs between the two points--the more the filtering, the greater the discrepancy. This may be represented by the proportion of events which is measured at one point but not at the other. This is the ratio of official to survey crime, U/V .

The filtering which occurs is a function of the general state of society. More filtering is taken to indicate the greater presence of factors which contribute to underreaction to the offenses which are being measured. That is, when fewer such events are measured at the second point, the ones which are omitted were in some way not seen as "serious enough" to be kept in the stream. This is a form of desensitization, and higher amounts of underreporting is taken as an indicator or less normative agreement about what is serious. Consequently, such may be an indicator of the moral relations of a society.

These moral relations, then, are indicative of the amount of filtering which occurs between the two measurements. Thus, the appropriate way to test the underlying hypothesis that the filtering is not random but is socially significant, is to examine the discrepancy in its relationship to theoretically valid and empirically operationalized variables. The factors used were enumerated in the form of ten propositions (p. 42) which detailed the expectations of each.

Results

The hypothesis was tested by breaking its components into a dependent variable (U/V) and several independent variables. The independent variables are shown on page 54.

For each of nine categories of crime, three regression equations were estimated, resulting in 27 sets of coefficients, three sets for each type of crime. The equations estimated were:

- (1) $U/V = f(\text{constant, citizen variables, police variables})$
- (2) $U/V = f(\text{constant, citizen variables})$
- (3) $U/V = f(\text{constant, police variables})$

where U/V is formed for each crime.

Of the 27 equations, 5 from equation 1, 7 from equation 2, and 5 from equation 3 were significant at the .05 level (F-test). For total crime, rape, aggravated assault and larceny, all three regressions were significant, as shown in Table 3.3

Of the 10 independent variables, manufacturing wages, the percentage of blacks, civilianization, and police concentration were the most frequently significant, while population density, relative police pay, urban population, and police expenditures appear to have little if any role in explaining U/V variation. A summary of how the propositions fared is shown in Table 4.1.

Discussion

The pattern of results clearly indicates that U/V is not a random phenomenon. This is emphasized by the fact that 7 of the citizen sector equations were significant, and that several of the variables were consistently significant through

TABLE 4.1
SUMMARY OF PROPOSITION RESULTS

Proposition Variable	Expected Effect On U/V	Cases Positive (Multivariate)	Cases Negative (Multivariate)	Number of Cases
1. Population	Negative	3 (0)	6 (0)	9
2. Density	Negative	7 (0)	2 (0)	9
3. Percent under 20	Negative	1 (0)	8 (1)	9
4. Manufacturing wages	Positive	2 (0)	7 (5)	9
5. Suburban proportion of population	Positive-violent Negative-property*	4 (0) 3 (0)	0 (0) 1 (0)	4 4
6. Percent black	Negative	9 (7)	0 (0)	9
7. Expenditures per officer	Positive	1 (0)	8 (0)	9
8. Police/Manufacturing income	Positive	8 (1)	1 (0)	9
9. Civilianization	Positive	9 (4)	0 (0)	9
10. Police per capita	Positive	8 (7)	1 (0)	9

Numbers in parentheses indicate the number of cases which are significant at the .05 level as shown in tables 3.5 and 3.6.

*Property crime includes auto theft. Total crime is excluded from variable #5 in this table because it contains elements of both types of crime ($b_{ppop} = .1591$, not significant).

most of the analysis. What conclusions can be drawn from this?

Previously, the literature has concentrated in large part on police bias and data manipulation as being responsible for the inaccuracy of crime statistics, and the failure of the UCR to fully measure crime. The findings here, however, indicate that such is not generally the case. The factors relating to the perceptual mechanisms and police interaction with the general population explain more of the variation, and with greater significance than factors relating purely to police activity and potential bias. Only in the case of rape were the police variables more significant (and this may be "significant" in that the police side contains fewer variables than the citizen sector), and only by a marginal amount. Even there, a strong interaction effect may be evidenced by the common variance of the two sectors, which would be further indicative of the inability of the police factors to operate in isolation (see Chapter 3, pages 73-88).

The most significant factors in explaining the U/V variation were racial composition and police concentration. Both of these are seen as having strong perceptual links to the general population, such that their primary effect is in increased reporting--i.e. from the citizen sector. In the case of racial composition, a larger concentration of blacks tends to heighten the awareness in the population, and effect more reporting, and hence a higher U/V ratio.

When there are more police per capita, it was argued, it is likely that proactive discovery will increase which increases reporting. There is also greater visibility. The effect which was inferred tend to provide evidence for both types of influence, indicating a further perceptual link between the variable (police concentration) and the U/V ratio.

Bringing this back to a broader theoretical level, the U/V discrepancy occurs because of a translative failure--i.e. those victimizations have not been translated into official crime reports. At the broadest level, this failure occurs because of a failure to communicate or to internalize the reporting routines which society prescribes. Thus, as a normative indicator, U/V represents the degree to which the social aggregate fails or succeeds in doing what is theoretically socially appropriate--i.e. report crime. The larger this failure, the smaller the U/V ratio.

The central hypothesis of this dissertation sought to examine the extent to which the U/V ratio covaries with certain other indicators which were related to anomie in a Durkheimian sense. Urbanization and industrialization being the central processes attending normative breakdown, in recent times, features which were related to both were incorporated--urban population, density, racial composition, etc. In fact however, those variables which were argued to be most representative of Durkheim's thesis--population and density--were not at all significant in this study, given the specific criteria for rejection of the null hypothesis.

What was found was that variables such as the percentage of blacks and manufacturing wages were related to U/V , but in an unexpected direction. Thus, as conceptualized herein, they were incorrectly assumed to be related to anomie, as defined, or they incorporated enough of alternative underlying meanings that the expected relationships did not surface. Clearly, they are still indicators of some underlying meaning, but part of the basic assumptions about anomie necessarily attending urbanization and industrialization must be inappropriate. The percentage of blacks, while increasing, does not result in a U/V decrease. This, given that historically, the increasing concentration of minorities in the central city has been a concomitant of urbanization.

Rather, the perceptual linkedness is seen as important. That is, given a particular reporting norm, the degree to which it is acted upon will in many ways be mitigated by certain perceptual factors. While reporting may be appropriate behavior, enough normative variation apparently exists that the norm will be more closely adhered to when there is a larger proportion of blacks, more police per capita, and lower manufacturing wages (economic level). Better V to U translation is further facilitated by a large concentration of civilians within the police department.

What is notable about this finding, however, is that three of the factors which were found to be related to the U/V ratio have current trends which would increase U as a fraction of V . Civilianization, the black proportion, and police density are all increasing. Thus, while we may still view large

cities as being in flux, as adjustment to modernization continues, one measure of anomie (U/V) is decreasing. This fact is clearly spelled out in a recent nationwide victimization report (1977), which showed that 1975 victimization rates were closer to the UCR figure than in 1973 and 1974. Additionally, the NCS reported reporting rates were increasing.

Conclusion

Two of the consequences of urbanization are increasing moral density and increasing individuation. The apparent contradiction is mediated by other factors in the social system. The mass media, for example, promotes the homogenization of the population in a way which helps establish the collective consciousness. This intervening or mediating factor helps to decrease the discrepancy between the general sets of norms and the individual, increasing the U/V ratio, in this case. The media-promoted prominence of victimization has, then, a large (and apparently real) potential for increasing U as a proportion of V.

Additionally, we find that the level of integration of the population is increasing. This may be indicated by the U/V ratio in that increasing it means a merging of two general levels of normative reaction. That is, a police officer may attempt to apply a set of formal rules in his police work. However, the greater the integration of the community (moral integration), the closer will the set of rules used by the police be to that with which the population identifies. Thus, the more integrated population reduces the discrepancy.

While it is clear that a set of perceptual filters operate to reduce crime between the two measuring points, it is not clear that such is due to anomie. Rather, the variables tend to take on a more active role--rather than being associated with increasing anomie, they are associated with increasing reporting, as in the case of racial composition, police concentration and civilianization. In fact, if this were a time series analysis, each of these trends appears to be on the rise, which would indicate increasing sensitivity. The presence of a potentially alienated group, blacks, in higher concentrations does not reduce the reporting--any effect which they might have by virtue of lower reporting habits is more than cancelled out by the effect they have on reducing perceptual obstructions to reporting.

The failure to find support for an anomie dimension, as defined above, may be viewed in several ways. First, it is possible that anomie is not present. Second, it is possible that by virtue of their similar positions within an industrialized nation, each of the large cities is at the same level with respect to anomie, and does not vary on the anomic dimension. That is, perhaps anomie is a more subtle process which can not be measured in minute gradations, and a more appropriate comparison would be cross-national, or between large and small cities. A third possibility is that anomie is present, but can not be measured adequately in this framework (some support for this might be found in the consistent, if insignificant, effects of age and population).



Thus, the discrepancy between the UCR and NCS is not random--it occurs as the product of perceptual filters which operate to different degrees depending on the characteristics of the individual cities. Further, those filters are more active at the citizen level, providing little support for the idea that the police are the primary source of the discrepancy.

Future Directions and Limits of this Study

One problem of this dissertation lies in the small sample of cities which was available. The confidence one may have in the results of empirical analysis is often determined by the sample size. Such was not possible here. That significant results were obtained in spite of the small sample provides convincing support for the conclusions offered above. The fact that many variables were not significant, however, demonstrates the problem of obtaining confidence when using such a small sample.

Thus, one need in the area is that the victimization studies be expanded to include more cities, and perhaps a wider variety of city sizes to provide a better basis for comparison. Perhaps more subtle variation could be detected if the data were more voluminous and more refined. Many of the relationships which appear insignificant in this study may in fact be significant in an alternative framework.

Future surveys might also benefit by conducting their sample such that all 26 cities are surveyed for the same time frame. From a practical standpoint, certain economies might result from such an approach, given that many things which are

replicated for each phase of each survey would only have to be done once. This would allow a sample which is more amenable to comparison, unlike that used here in which time series pooling was necessary.

Thus, most of the future directions one might suggest are contingent upon an expanding data base. Comparisons across city sizes, time series comparisons, and analysis of variance can only be accomplished with a larger group of observations. For the latter, if one group of cities with a population above 250,000 has less or more U/V variation than a group of cities between 25 and 50,000, then we might make further tests about the notion that the smaller cities have less normative variation than larger cities. This would also release us from the assumption that normative conformity is only indicated in reference to U/V's distance from 1.

Policy Recommendations

There are, of course the obvious policy recommendations which accompany the expressed need for a larger sample. This need is clear. One of the most enlightening findings from this study, however, is that the power to increase the "accuracy" of crime statistics lies primarily in the hands of the general population. While civilianization is a very important factor in improving recording, most of the U/V discrepancy exists because crime is not reported to the police to begin with. Most important is the fact that the problem is a perceptual one.

Where the sensitivity of the population is heightened, either by racial fear or greater police visibility, reporting is greater. That is not to say that racial mistrust and a high police/citizen ratio is good. It does, however, point out the importance of attitudes and perceptions in effecting a community-based approach to crime.

This would suggest, for example, that the current trends in improving police-community relations, and the publicization of police emergency reporting numbers is in the appropriate direction. This lends support to the idea that such efforts will not be ineffective. Further, the more the public is made aware of crime, it appears the more they will attempt to deal with it, rather than ignore it. This, in turn, has the effect of increasing the effectiveness of the police--they have more information to work with--which may eventually have some impact on reducing crime itself. Additionally, greater community awareness may have the effect of improving normative control over crime, having a direct impact on its reduction.

In line with this, a further policy recommendation would suggest that victimization survey results be more heavily publicized. If the victimization results were publicized as heavily as the UCR rates, perhaps greater awareness that a problem exists could be generated, leading to some alleviation of the problem. In general then, this study suggests a great potential for improved reporting even without the touted computerization of information processing. The greatest potential for accuracy lies in the cooperation and education of the public.

FOOTNOTES

FOOTNOTES

1. For a discussion of the development of empirical methodology see, for example, Jack Douglas, American Social Order, 1971; especially pages 7-12.
2. This is a recurring theme in Durkheim's approach, used here in the early chapters of Suicide, and repeated in The Rules of Sociological Method (1938: pp. 1-13) and The Division of Labor in Society (1933: pp. 49-63). In many ways, Durkheim's "underlying meaning" is a unifying concept, serving a purpose similar to that of function for the functionalists.
3. This is a general concern of labelling theory, i.e. the norms governing reaction. For an overview, see Lemert (1951) or Becker (1963). Although there is a very large literature concerning reaction to "deviance", very few have been concerned with the particular issues discussed here.
4. This is implied by others who have noted the "local traditions" in policing such as Wilson (1968) and Manning (1977).
5. Although such incidents are thought to occur elsewhere, it is rare that documentation is so clear. In Washington, political pressures were quite strong, and were part of a larger context of public deceit.
6. This is part of a large body of literature concerning self-reporting. See also Akers (1964), Wenninger (1962), and Reiss and Rhodes (1961).
7. Using V as a standard can be justified by reference to NCS surveys which show that victim responses to their own reporting behavior are on the order of 90% correct or true. If we extrapolate that accuracy to the broader set of data being dealt with, even if not 100% accurate, the victimization rates are closer to "real crime" than the UCR.



APPENDICES

APPENDIX 1

ESTIMATED COEFFICIENTS AND STANDARD ERRORS FOR WHOLE EQUATION

Equation	CONSTANT	SALR	UPOP	BLK	AGE	DENS	PPOP	PRD	PCIV	EXP	COPS
Total Crime *	.422	-.00002	-.00006	.004	-.006	.00001	.132	.065	.491	.000001	-.025
Standard error	.562	.00002	.00007	.002	.008	.00001	.232	.199	.382	.000001	.031
Violent Crime	1.347	-.00006	.00003	.007	-.024	.00001	.077	.081	.218	-.000001	.019
Standard error	1.113	.00004	.0001	.003	.016	.00001	.459	.394	.757	.000002	.062
Property Crime *	.341	-.00002	-.00007	.004	-.004	.00001	.144	.053	.533	.000008	-.033
Standard error	.512	.00002	.00006	.002	.008	.00007	.211	.181	.349	.000001	.019
Rape *	-.959	-.00002	-.00008	.0001	.019	.00001	.576	-.060	1.214	.000001	.102
Standard error	.841	.00003	.0001	.003	.012	.00001	.347	.297	.572	.000001	.047
Robbery	.910	-.00003	.00003	.004	-.013	.00005	.162	-.106	.061	-.0000003	.013
Standard error	.853	.00003	.0003	.003	.013	.00001	.352	.302	.580	.000001	.048
Assault *	1.313	-.0001	-.0001	.015	-.033	.00004	.288	.832	.581	-.000001	-.029
Standard error	2.225	.00008	.0003	.007	.033	.00003	.918	.787	1.513	.000003	.124
Larceny *	.195	-.00002	-.0003	.004	-.003	.00001	.029	.179	.605	.000001	-.035
Standard error	.623	.00002	.00008	.002	.009	.00008	.257	.220	.424	.000001	.035
Burglary	.726	-.00003	-.00001	.002	-.006	.00005	.343	-.176	.342	.000004	-.037
Standard error	.492	.00002	.00006	.002	.007	.00001	.203	.174	.335	.000001	.027
Auto Theft	5.441	-.00007	.00005	.002	-.070	-.00003	.033	-1.000	-.120	.0000004	.109
Standard error	1.947	.00007	.0002	.006	.029	.00003	.803	.688	1.325	.000003	.108

Figures are shown to three significant digits except when order of magnitude would render that number equal to zero. * indicates significant F; t significant above 2.131 at .05 level.

APPENDIX 2

QUALITY OF PREDICTIONS

Three separate methods were employed to predict the victimization level based on UCR data. The first simply uses the regression coefficients from:

$$V = a + bU,$$

where a and b are the intercept and slope. The second method uses a combination of the independent variables used in the structural analysis, other independent variables, and U , to predict V , using the coefficients from:

$$V = a + b_1U + b_2\text{SALR} + b_3\text{UPOP} + b_4\text{PPOP} + b_5\text{DENS} + b_6\text{AGE} + b_7\text{BLK} + b_8\text{PRD} + b_9\text{PCIV} + b_{10}\text{COPS} + b_{11}\text{EXP}$$

where b is the vector of beta coefficients, and a is the constant or intercept. The third method predicts the actual subtractive discrepancy ($V - U$) from the above equation with U excluded (i.e. ten b 's instead of eleven), and then uses that predicted discrepancy to "correct" the U figures.

On the average, this third method proved to be superior to the others. The simple correlation of U and V did not work well, and the TCR (total crime) predictions for victimization were an average of 16.3% different from the actual victimization figures. While the r^2 for the second method was marginally (but not significantly) higher than that from the first, the second method produced an average error for TCR of 8.8%, while the third method's error was 8.4%. The reason for this apparent contradiction is that for the third method, a smaller \hat{Y} was being predicted (i.e. $V-U < V$). Thus, as a percentage of $V-U$, the error was comparatively larger than the error from method 2 as a percentage of V . However,

once the smaller $V-U$ is added to U , the resultant error is a smaller fraction of actual $(V-U)+U$ than before, yielding a better series of predictions. Those predictions are shown below.

CITY	Actual Victimization	Method 1	Method 2	Method 3
Chicago	551200	499110	590100	587673
Detroit	303100	330721	291088	295425
Los Angeles	615600	592721	592819	600935
New York	1176300	1205040	1174620	1175350
Philadelphia	350000	193004	321772	307974
Boston	139900	120669	116263	119588
Buffalo	67700	72951	80924	78107
Cincinnati	101700	96566	92349	90853
Houston	306000	226466	297134	295400
Miami	42800	100423	47587	44957
Milwaukee	148800	93691	148725	145072
Minneapolis	112600	103458	104401	108547
New Orleans	108000	103750	100879	97762
Oakland	90100	127738	94851	92160
Pittsburgh	76600	76861	90030	92601
San Diego	182000	140232	187524	184373
San Francisco	166100	161202	164202	165451
Washington, D.C.	87800	155278	85720	84353
Atlanta	108900	130391	86421	88504
Baltimore	158600	209370	173660	179017
Cleveland	121900	119533	135363	135969
Dallas	179000	200413	202689	199936
Denver	148100	138129	137711	139966
Newark	55600	108696	49575	53057
Portland	101900	114245	110922	110664
St. Louis	101500	180147	124448	129101

This set of predictions is for total victimizations, whose error is substantially smaller than any of the other series. This obviates the fact that using such predictions, or using the coefficients to produce estimates for non-survey cities seems to be problematic.

APPENDIX 3

UNIFORM CRIME REPORTING HANDBOOK INSTRUCTIONS FOR AUTO THEFT

Examples:

7.1 An unlocked auto is reported stolen from a street in your jurisdiction. You recover the undamaged car 1 day later some distance from the point of theft. Count one offense, not cleared.

1 CLASSIFICATION OF OFFENSES (PART 1 CLASSES)	2 OFFENSES REPORTED OR KNOWN TO POLICE (INCLUDE "UNFOUNDED" AND ATTEMPTS)	3 UNFOUNDED, I.E. FALSE OR BASELESS COMPLAINTS	4 NUMBER OF ACTUAL OFFENSES (COLUMN 2 MINUS COLUMN 3) (INCLUDE ATTEMPTS)	5 NUMBER OF OFFENSES CLEARED BY ARREST THIS MONTH	6 BY ARREST OF PERSONS UNDER 18 (INCLUDED IN 5a)
7. AUTO THEFT	/		/		

7.2 An auto parked with the key in the ignition switch is stolen. It contained clothing and luggage valued at \$375. It is recovered 4 days later. When recovered, it is in a stripped condition and the clothing and luggage are missing. Count one auto theft, not cleared. The additional theft of accessories and personal items is ignored in classifying such cases (see Classifying and Scoring). Also note that the carelessness of the owner in leaving his car unlocked and with the ignition key in the lock makes no difference in the scoring as an actual offense.

1 CLASSIFICATION OF OFFENSES (PART 1 CLASSES)	2 OFFENSES REPORTED OR KNOWN TO POLICE (INCLUDE "UNFOUNDED" AND ATTEMPTS)	3 UNFOUNDED, I.E. FALSE OR BASELESS COMPLAINTS	4 NUMBER OF ACTUAL OFFENSES (COLUMN 2 MINUS COLUMN 3) (INCLUDE ATTEMPTS)	5 NUMBER OF OFFENSES CLEARED BY ARREST THIS MONTH	6 BY ARREST OF PERSONS UNDER 18 (INCLUDED IN 5a)
7. AUTO THEFT	/		/		

7.3 An auto is reported stolen in your jurisdiction. Later a business house is held up by two armed men. The bandits are captured by police. They are driving the stolen car. This represents 2 separate offenses, 1 auto theft and 1 armed robbery. Both are cleared by arrest.

1 CLASSIFICATION OF OFFENSES (PART 1 CLASSES)	2 OFFENSES REPORTED OR KNOWN TO POLICE (INCLUDE "UNFOUNDED" AND ATTEMPTS)	3 UNFOUNDED, I.E. FALSE OR BASELESS COMPLAINTS	4 NUMBER OF ACTUAL OFFENSES (COLUMN 2 MINUS COLUMN 3) (INCLUDE ATTEMPTS)	5 NUMBER OF OFFENSES CLEARED BY ARREST THIS MONTH	6 BY ARREST OF PERSONS UNDER 18 (INCLUDED IN 5a)
1. ROBBERY TOTAL	/		/	/	
a. ARMED - ANY WEAPON	/		/	/	
b. STRONG-ARM - NO WEAPON					
7. AUTO THEFT	/		/	/	

(If the bandits obtained the car during the holdup, there would be only one offense, *robbery*.)

Excerpt from Pages 39-40, Uniform Crime Reporting Handbook,
F.B.I., 1966.

7.4 A juvenile, 14 years of age, takes a car from in front of the owner's residence and abandons it 3 hours later a block from the owner's residence. Count one offense of auto theft. Age of offender and location of auto when recovered do not change the fact the car was stolen. If offender identified and arrested, count one clearance in 5a and show one in 5b because offender under 18 years of age.

1 CLASSIFICATION OF OFFENSES (PART 1 CLASSES)	2 OFFENSES REPORTED OR KNOWN TO POLICE (INCLUDE "UNFOUNDED" AND ATTEMPTS)	3 UNFOUNDED, I.E. FALSE OR BASELESS COMPLAINTS	4 NUMBER OF ACTUAL OFFENSES (COLUMN 2 MINUS COLUMN 3) (INCLUDE ATTEMPTS)	5 NUMBER OF OFFENSES CLEARED BY ARREST THIS MONTH	
				6 TOTAL OFFENSES CLEARED	7 BY ARREST OF PERSONS UNDER 18 (INCLUDED IN 5a)
7. AUTO THEFT	/		/	/	/

7.5 A stranger is seen seated in the driver's seat of a parked car by the owner. As the owner approaches the car, the stranger flees. The ignition has been tampered with. Count 1 offense of auto theft. *Attempts to commit a theft* are classified the same as actual thefts.

1 CLASSIFICATION OF OFFENSES (PART 1 CLASSES)	2 OFFENSES REPORTED OR KNOWN TO POLICE (INCLUDE "UNFOUNDED" AND ATTEMPTS)	3 UNFOUNDED, I.E. FALSE OR BASELESS COMPLAINTS	4 NUMBER OF ACTUAL OFFENSES (COLUMN 2 MINUS COLUMN 3) (INCLUDE ATTEMPTS)	5 NUMBER OF OFFENSES CLEARED BY ARREST THIS MONTH	
				6 TOTAL OFFENSES CLEARED	7 BY ARREST OF PERSONS UNDER 18 (INCLUDED IN 5a)
7. AUTO THEFT	/		/		

BIBLIOGRAPHY

BIBLIOGRAPHY

- Barnes, H.E., "The Development of Sociology" in Barnes, Becker, and Becker, Contemporary Social Theory, N.Y. 1940, pp 4-16.
- Barnes, H.E. and H. Becker, Social Thought from Lore to Science, Harren Press, Washington, D.C., 1952.
- Beattie, R.H., "Crime Statistics in the U.S." Journal of Criminal Law, Criminology and Police Science, May/June, 1960.
- Becker, H., Outsiders, 1963.
- Biderman, A. and A. Reiss, "On Exploring the Dark Figure of Crime" Annals, November, 1967.
- Black, D.J., "The Production of Crime Rates" American Sociological Review, 35, August, 1975.
- Chambliss, W. and R.H. Nagasawa, "On the Validity of Official Statistics" Journal of Research in Crime and Delinquency, 6, 1969.
- Chilton, R.J., "Delinquency Area Research in Baltimore, Detroit, and Indianapolis" ASR, February, 1964.
- Cho, Y.H., Urban Crime and Public Policy, 1974.
- Conklin, J., Robbery and the Criminal Justice System, Philadelphia: J.B. Lippincott, 1972.
- Cullen, M. The Statistical Movement in Early Victorian Britain, Harvester Press Ltd., 1975.
- Curtis, L., "Victim Precipitation and Violent Crime" Social Problems 21, 1974
- Davis, K., Discretionary Justice, L.S.U. Press: 1969.
- Police Discretion, West Publishing Co., 1975.
- De Neufville, J.I., Social Indicators and Public Policy, Elsevier Scientific Publishing Co., 1951.

- Douglas, Jack, American Social Order, 1971.
The Relevance of Sociology, 1970.
The Social Meanings of Suicide, 1971.
- Durkheim, Emile, Suicide: A Study in Sociology, The Free Press, Glencoe, 1951.
The Division of Labor in Society, The Free Press, Glencoe, 1947.
Rules of Sociological Method, The Free Press, Glencoe, 1950.
- Erickson, Gibbs, and Jensen, "The Deterrence Doctrine and the Perceived Certainty of Punishment" ASR, v. 42, 2, 1977.
- Federal Bureau of Investigation, Uniform Crime Report, G.P.O., 1971-1975.
Uniform Crime Reporting Handbook. G.P.O., 1966.
- Frank, C., Statistics and Econometrics, Holt, Rinehart and Winston, 1971.
- Gibbs, J., "Conceptions of Deviant Behavior: The Old and the New" Pacific Sociological Review, Spring, 1966, p. 9-14.
- Goldstein, H., "Police Discretion: The Ideal Versus the Real," Public Administration Review, 23, 1964.
- Goldstein, J., in A. Goldstein and J. Goldstein, Crime Law and Society, The Free Press: N.Y., 1971.
- Gould, L., "Crime and its Impact in an Affluent Society," in J. Douglas, Crime and Justice in American Society, Bobbs-Merrill, 1971.
- Hindelang, M., "The U.C.R. Revisited," Journal of Criminal Justice, v.2, 1974.
- Hood, R. and R. Sparks, Key Issues in Criminology, N.Y. McGraw-Hill, 1970.
- Kasarda, J.D., "The Impact of Suburban Population Growth on Central City Service Functions" AJS, 77, 1972.
- Kituse, J. and A. Ciccourel, "A Note on the Uses of Official Statistics" Social Problems, 11, Fall 1963.
- Lander, B., Towards an Understanding of Juvenile Delinquency, N.Y. Columbia U. Press, 1954.
- Lejins, P., "The Uniform Crime Reports," Michigan Law Review, April, 1966.

- Lane, R., Policing the City, Atheneum, N.Y., 1971.
- Lemert, Social Pathology, 1951.
- Levine, G., "The Potential for Crime Overreporting in Criminal Victimization Surveys," unpublished paper, 1974.
- Manning, Peter K., Police Work, 1977.
- Martindale, Don, The Nature and Types of Sociological Theory, Riverside press, Cambridge, 1960.
- Penick, B.E., Surveying Crime, National Academy of Sciences, 1976.
- Pittman, D., and W. Handy, "Patterns in Criminal Aggravated Assault" JCLCPS, December, 1964.
- "Uniform Crime Reporting: Suggested Improvements" in A.W. Gouldner and S.M. Miller Applied Sociology, N.Y., The Free Press, 1965.
- Price, J.R., "A Test of the Accuracy of Crime Statistics," Social Problems. Fall 1966.
- Quinney, R., "Structural Characteristics, Population Areas, and Crime Rates in the U.S." JCLCPS, March 1966.
- Reiss, A., and D. Black, "Police Control of Juveniles" ASR, February, 1970.
- Robinson, S., "A Critical View of the U.C.R.," Michigan Law Review, April, 1966.
- Robinson, Wm., "Ecological Correlations and the Behavior of Individuals" ASR, June, 1950.
- Rossi, Waite, Bose, and Berk, "The Seriousness of Crime" ASR April, 1975.
- Sellin and Wolfgang, The Measurement of Delinquency, 1964.
- Siedman and Couzens, "Getting the Crime Rate Down," Law and Society Review, Spring, 1974.
- Skogan, Wesley, "Comparing Measures of Crime: Police Statistics and Survey Estimates of Citizen Victimization in American Cities" presented to American Statistical Ass. in St. Louis, August 1974.
- "The Validity of Official Crime Statistics: An Empirical Investigation" Social Science Quarterly, June, 1974(b).

Skogan, Wesley, "Citizen Reporting of Crime: Some National Panel Data," for LEAA, 1974(c).

Slaten, "Ecological Analysis of Delinquency: Aggregation Effects" ASR, December 1969.

Smigel, E.O., and Ross, Crimes Against Bureaucracy, N.Y., Van Nostrand, 1970.

U.S. GPO

President's Commission on Law Enforcement and Administration of Justice, Task Force Report, Crime and Its Impact--An Assessment, 1967.

The Challenge of Crime in a Free Society, 1967.

Department of Justice, LEAA, National Criminal Justice Information and Statistics Service:

Criminal Victimization in the U.S.: A Comparison of 1974 and 1975 Findings, 1977

Criminal Victimization in the Nation's 5 Largest Cities, 1975.

Criminal Victimization in 13 American Cities, 1975.

Criminal Victimization in 8 American Cities, 1976.

Criminal Victimization in Chicago, Detroit, Los Angeles, New York, and Philadelphia, 1976.

Webb, S.D., "Crime and the Division of Labor" AJS, November, 1972.

Wellford, "Crime and the Police: A Multivariate Approach" Criminology, August, 1974.

Willmer, M.A.P., Crime and Information Theory, Edinburgh U. Press, 1970.

Wilson, J.Q., Varieties of Police Behavior, 19 .

Wolfgang, M. "Urban Crime" in J.Q. Wilson (ed.) The Metropolitan Enigma, Cambridge: Harvard U. Press, 1968

"Uniform Crime Reports: A Critical Appraisal" University of Pennsylvania Law Review, April 1963.

