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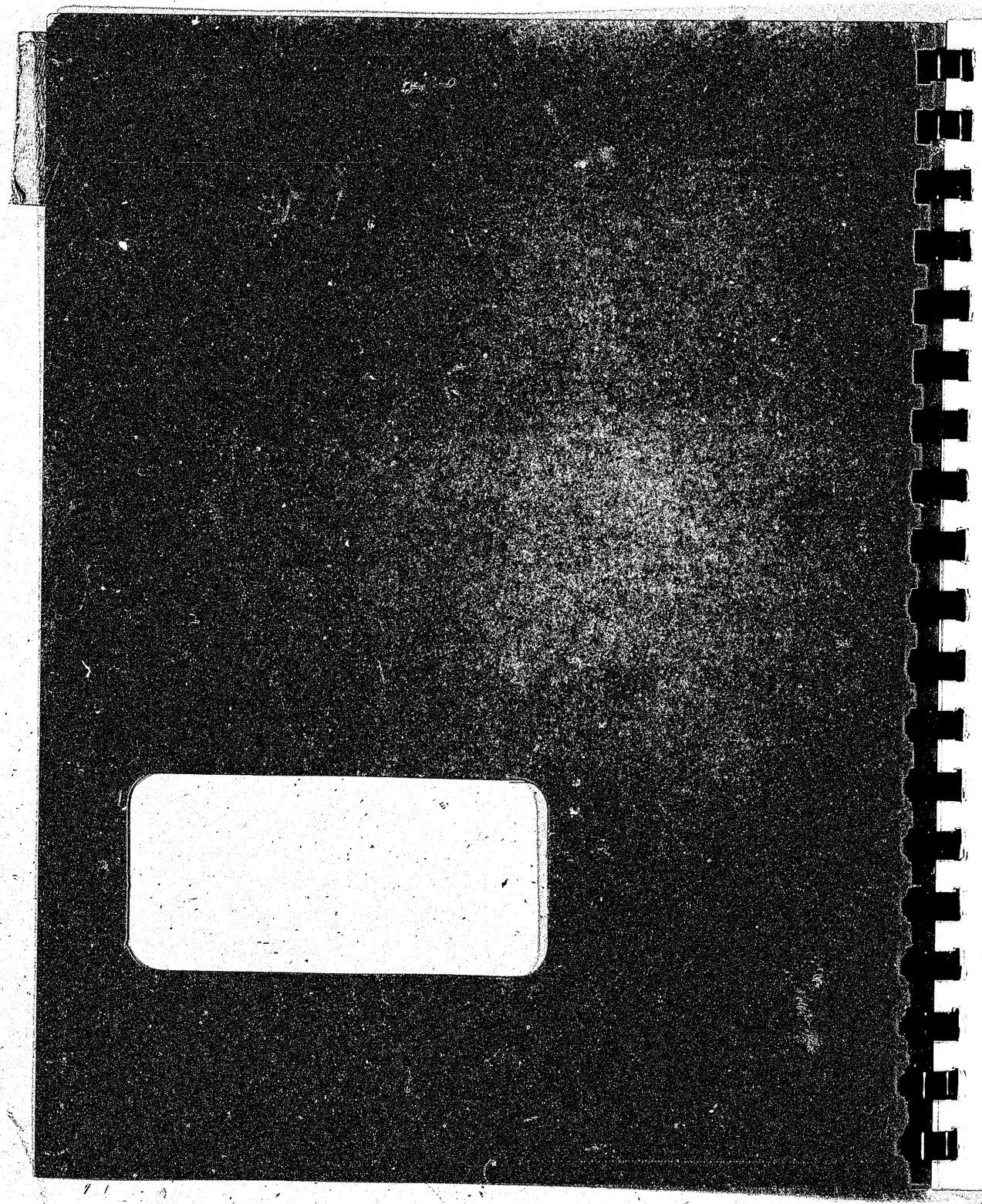
MINNESOTA

CRIME CONTROL PLANNING BOARD

STATISTICAL ANALYSIS CENTER

AN ANALYSIS OF
MINNESOTA'S CRIMINAL JUSTICE SYSTEM

RESEARCH REPORT



A Research Report
Produced by
the
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June, 1976

AN ANALYSIS OF MINNESOTA'S CRIMINAL JUSTICE SYSTEM

Preface

The Statistical Analysis Center of the Governor's Commission on Crime Prevention and Control is responsible for the analysis of data collected on the state's criminal justice system. In this study we try to give a comprehensive picture of crime, criminal justice, and their interrelationships in Minnesota. That is, our emphasis here is on interpreting data, rather than on simply reporting it. Naturally, we cannot consider every aspect of the criminal justice system, so we have limited our analysis to those subjects that appear to have the greatest bearing on the overall operation of the system, state-wide. We look at this report as only a first step in an ongoing analysis of crime and criminal justice in Minnesota—an analysis that will be refined and extended as the state's computer-based information system continues to develop. Points of view expressed in this report are those of the author and do not necessarily represent the official position or policies of the Governor's Commission on Crime Prevention and Control.

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I. Introduction

The purpose of this report is to give an overall view of the criminal justice system in Minnesota. Although much raw data exists on crime rates and the police, and on the courts and correctional agencies, we need to organize and interpret this data to understand how the criminal justice system works, and how well it works. To weigh the effects of any prospective changes in the system, as might be caused, for example, by an increase in the crime rate, a shift to mandatory sentencing or a reduction in plea negotiations, we must know not only the number of people who might be affected, but also how the system adapts to changes in the demands placed upon it.

What makes the behavior of the criminal justice system particularly difficult to analyze is the great discretion available to police, prosecutors, judges, and corrections administrators. All of these system personnel have great freedom to decide which criminal defendants shall remain in the system and which shall return to society. Furthermore, we have no certainty that one section of the system will make the same choices as another; the courts, for example, might very well have goals that conflict with those of correctional authorities. The amount of discretion in the criminal justice system is so great and so deeply entrenched by law and tradition, that attempts to change the system by outside action or policy can be completely frustrated or lead to unwanted results. In short, the system operates as it does because the people who work in it have chosen to have

things as they are, given the constraints they have to live with.

Despite its pervasiveness, discretion would not have an overriding impact on the workings of the criminal justice system were it not for the heavy demands being placed on the system by the high crime rate. Simply put, the number of people who might rightfully be arrested, tried, and possibly confined for criminal acts far exceeds the capacity of the system to do this. Without discretion the system would quickly choke on the number of people it would have to accommodate. Discretion is a means of rationing the limited amount of services that the system can provide. Thus, it is discretion, the high demands on the system, and the constraints on the system's capacity that combine to give the system its distinctive character.

Among inherent constraints on the criminal justice system are the sizes of correctional institutions, the number of courtrooms, and the workloads of police and courts personnel. Of course, these constraints are a function of the budgets of the various agencies. While these commonplace factors might seem secondary to the intended purposes of the system[1]—

[1]Minnesota Statutes, par. 609.01

prevention of crime and the fair and efficient administration of justice—an examination of the system shows that these constraints play a decisive role in how the system works and in its degree of success.

Before looking more closely at the criminal justice system of Minnesota, we need to distinguish between policy or system-oriented research, such as this report, and "pure" social science research. Our purpose here is not to uncover the root, universal causes of crime, which a true science of criminal behavior would try to do. Instead, we must limit ourselves to system questions, because the factors that we do know to be important in the origins of crime, such as a person's family background, the influence of peer groups on juveniles, and the effects of economic conditions, are beyond the capability of the criminal justice system to do much about. Therefore, we focus on those aspects of crime and the criminal justice system over which public agencies can reasonably expect to have a significant influence or control. We cannot, for instance, turn back the clock for an adult criminal and remake the family environment of his childhood; but what the criminal justice system does with him now may yet affect the chance of his committing further crimes.

As we survey the extent of crime in our society and the multiplicity of potential causes, we are led to conclude that the criminal justice system by itself can have only a

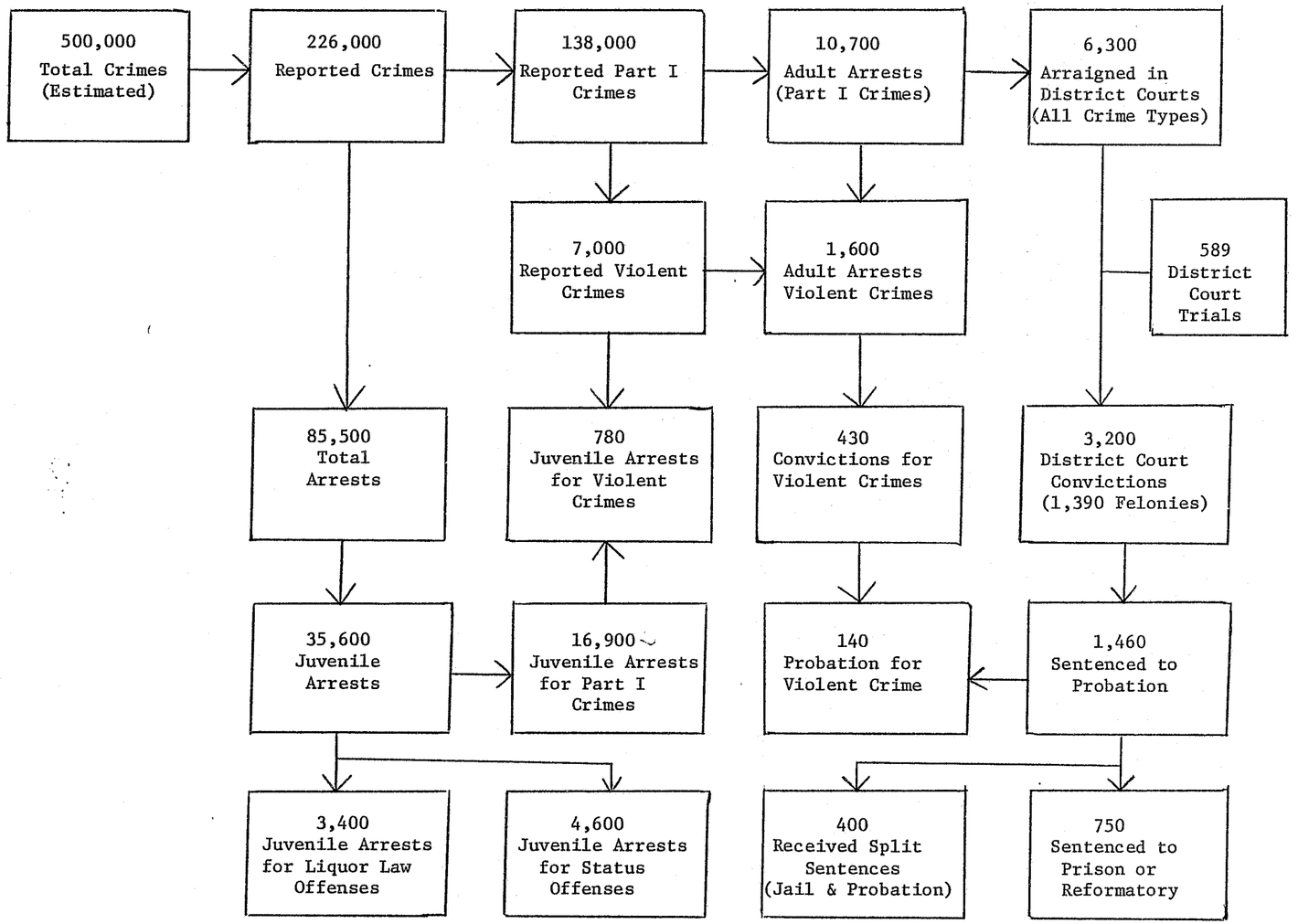
minor role in solving the problem of crime. Nonetheless, we must continue to search out those areas of the criminal justice system that do call for constructive improvement. In particular, we must be alert to any effects the system itself may have in fostering crime or in failing to deter it, as well as any lack of judicial fairness in its procedures.

II. The Overall System

Before looking in detail at the separate components of the criminal justice system (police, courts, and corrections), we need a perspective on the whole system. An overall view can give us a sense of the relative weight of each component in the operation of the whole system, while describing how the entire system works. Having examined the system and its components, we can then try to apply what we have learned to important policy questions.

We begin our description of Minnesota's criminal justice system by comparing the number of reported crimes to the number of persons who pass through each successive stage of the system, from arrest to the courts and corrections. Although our data on the system is incomplete and subject to reporting errors, we can still use it to give a reasonably good picture of the system. The easiest way to present this information is by flowchart, as seen in figures 1 to 3. (Note that flowchart data is only approximate.)

FIGURE I. MINNESOTA CRIMINAL JUSTICE SYSTEM - 1973 *



* All data is subject to incomplete reporting; figures are approximate

While these flowcharts necessarily gloss over important details, they highlight the main features of the system as it has been in recent years.[2] Looking at the flowchart of the adult case flow through the system in 1973 (figure 1), what strikes us most is the tremendous reduction in the number of people as one progresses through the system; this is the "funneling" effect. The total number of crimes reported by the police in 1973 was 225,000. This is a large enough number, yet it certainly underrepresents the true amount of crime in the state. A victimization study of Minneapolis based on survey interviews has estimated that only about 30% of crimes are reported to the police; even for violent crime, which we might expect to be reported because of its seriousness, the reporting rate is apparently no more than 40%.[3] Thus, the true crime rate in Minnesota (as in other states) is substantially higher than the reported figures.

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[2]Sources of data for the Minnesota criminal justice system, as represented by flowcharts presented here, are: Minnesota Crime Information (annual volumes), Bureau of Criminal Apprehension, Department of Public Safety, St. Paul; Annual Report of Minnesota Courts, The Supreme Court of Minnesota (annual volumes), St. Paul; and Minnesota Comprehensive Plan (annual volumes), Governor's Commission on Crime Prevention and Control, St. Paul.

[3]Criminal Victimization Surveys in 13 American Cities, U.S. Department of Justice, Law Enforcement Assistance Administration, June, 1975, p. 134.

Of the many crimes committed, only a small fraction are cleared or solved by arrest. In 1973, only 15% of serious crimes (excluding theft of articles less than $50 in value) were cleared by arrest. (Serious or "Part I" crimes are defined by the FBI to include the violent crimes—homicide, rape, robbery, aggravated assault—burglary, and theft.) As small a percentage as the clearance rate is, however, the number of people arrested far exceeds the capacity of the courts for prosecuting or trying this number. Although over 10,000 adults are arrested yearly for serious crimes, this number is about three times the number of convictions for crimes in the state's district courts, which handle the most serious crimes, including felonies and gross misdemeanors. The number of adults arrested for violent crimes—about 1,600 in 1973—is nearly four times the number convicted of violent crimes in district courts. Moreover, the number of convictions in district courts, although not large compared to the number of arrests, is only possible because of the high rate of guilty pleas; in recent years 70 to 80% of the cases terminated in district courts were by guilty plea, not by trial.[4] Were it not for guilty pleas and plea negotiations (the exchange of a guilty plea for a reduced charge or sentence), the flow of persons through the courts would be completely limited by the number of possible trials.

[4] Tenth Annual Report of Minnesota Courts, 1973, The Supreme Court, p. 25

In recent years the state's district courts have conducted only about 600 to 700 trials per year—a tiny number compared to the number of arrests.[5]

The flow of people through the system continues to diminish from the courts to corrections, since the majority of convictions lead to probation, a fine, or a stayed or suspended sentence. Out of approximately 3,000 people convicted in district court each year (including 1,400 felony convictions), only about 750 are sentenced to terms in prison or reformatories. About 400 more of those convicted receive split sentences, which include confinement in a local jail for a term up to one year followed by probation.

A funneling similar to that of adults (figure 1) also takes place for juveniles, as seen in figure 2.[6] Of the 38,000 juveniles arrested in 1974, only 10,000 were brought before a court; fewer than 1,000 juveniles were kept in custody, and 15% of those were for status offenses. (Status offenses are "crimes" such as runaway, incorrigibility, or truancy, which apply only to juveniles because of their age.) The long-term confinement rate for juveniles arrested for violent crimes was close to zero: in 1974 only 25 of nearly 800, or 3%, were confined in state institutions. Remarkably, this is even less than the comparable rate for

[5] Ibid.

[6] Data on juveniles in the criminal justice system is drawn from Minnesota Crime Information, op. cit., and the 1975 Minnesota Comprehensive Plan, pp. 225-368.

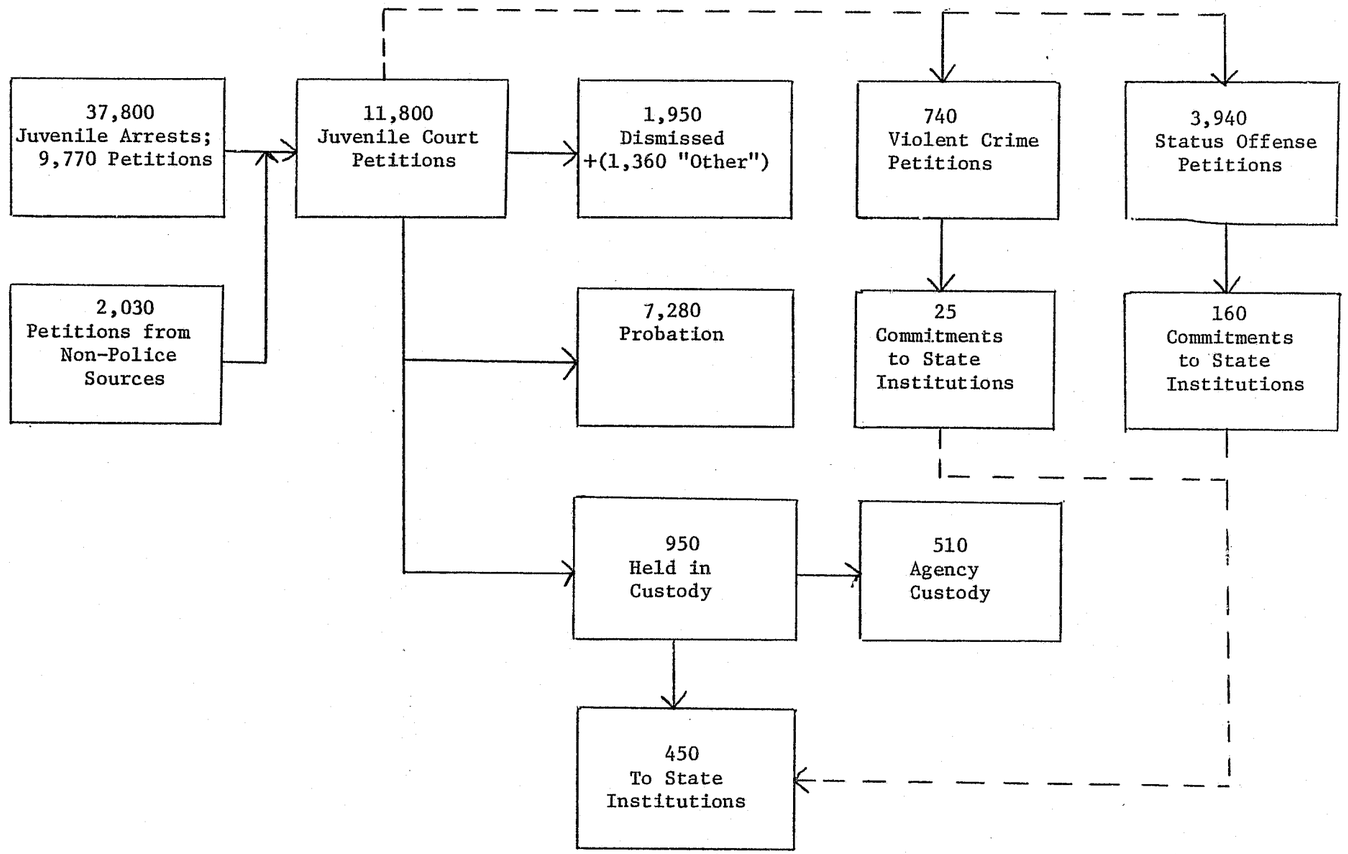

FIGURE 2. MINNESOTA JUVENILE JUSTICE SYSTEM - 1974 *

*Data is approximate and subject to error

status offenders. (See figure 2.) Additional numbers of juveniles are held for short terms in local institutions, group homes, and the like, but we do not have good data on this. (How violent or persistent juvenile criminals should be treated and confined is a hotly debated question at the present time.)

The pattern of flow through the criminal justice system, as shown in figures 1 and 2, is quite comparable with that of other states than Minnesota or for the United States as a whole.[7] Moreover, this same pattern holds for individual types of crime as well. A flowchart for burglary, a typical case, is given in figure 3. Looking at a specific crime, such as burglary, we get a good indication of the low probability of a criminal being caught, convicted, and sentenced to prison for his crime. Taking only reported burglaries, we find that the probability of a burglar being convicted and sentenced to a state penal institution for any single act of burglary is about 200/40,000 = 0.005 or one-half of one percent. Since this calculation includes the burglaries committed by juveniles, perhaps th ajority of burglaries,

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[7]A flow diagram for the total criminal justice system in the United States can be found in, Task Force Report: Science and Technology, The President's Commission on Law Enforcement and Administration of Justice, Government Printing Office, 1967, pp. 58-61.

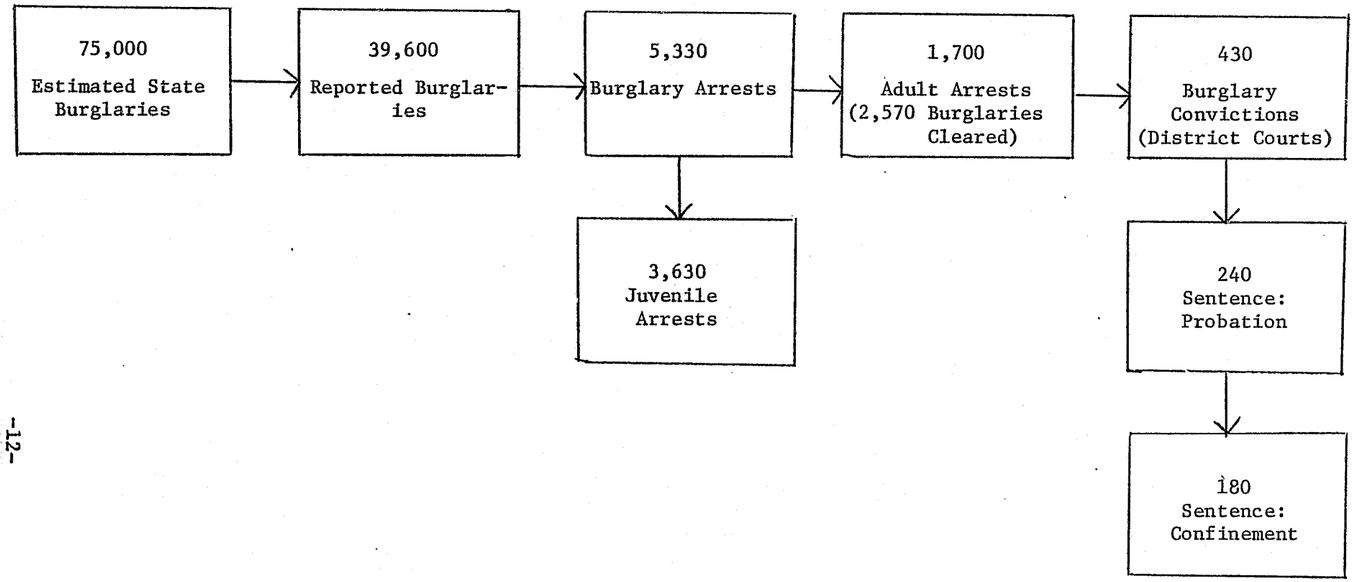

FIGURE 3. BURGLARY IN THE MINNESOTA CRIMINAL JUSTICE SYSTEM 1973

this result may underestimate by 2 or 3 times the probability of an adult burglar going to prison. Nevertheless, it is clear that the criminal justice system provides little sanction or deterrence against burglary, if we measure deterrence by the possibility of going to prison for a criminal act. Even of convicted adult burglars, over 50% are immediately released on probation.

The naive picture of most criminals being captured and sent to prison is similarly contradicted, although to a lesser degree, by other types of crimes than burglary. Even for violent crimes, of the over 1,600 adults arrested in 1973, only about 300 were convicted and sentenced to a prison or reformatory. Thus, the probability of an adult arrested for a violent crime being imprisoned at the state level is only about 300/1,600 = 0.19. (This figure would be only slightly increased if we included those sentenced to jail terms.) This probability is even less for a juvenile arrested for a violent crime; in this case it is about 1 in 30. We can certainly question whether these probabilities of imprisonment are sufficient to deter potential criminals, especially for the nonviolent crimes.

Whether the likelihood of imprisonment acts as a deterrent depends also upon how the potential criminal perceives that probability. We do not know if the general public is aware of the low probability of imprisonment for crimes. We can assume, however, that criminals, through

their own experience, have fairly accurate information about the chances of being caught or of going to prison. Thus, the deterrent effect of the system might be substantially greater for the general public than for repeat offenders, although the reason for this difference would ironically be popular misconception about the effectiveness of the system in capturing and convicting criminals. Whether this is true or not, and how different groups of people do perceive the probabilities of imprisonment, are important questions that merit further research; to the author's knowledge no research on this has been done.

While some research studies support the hypothesis that the probability of confinement is important in the deterrence of crime, they also suggest that the length of confinement is less critical than the act of confinement.[8] As it stands, prison terms in Minnesota are rather short since inmates are ordinarily paroled long before their sentences have expired. That is, the sentencing judge prescribes a maximum permissible sentence, which is limited by law, but for most crimes the state parole board has the

[8]See William C. Bailey, et. al., "Crime and Deterrence: A Correlation Analysis", Journal of Research in Crime and Delinquency, July 1974, pp. 124-143; James Q. Wilson, Thinking About Crime, Basic Books, 1975; and Shlomo Shinnar and Reuel Shinnar, "The Effects of the Criminal Justice System on the Control of Crime: A Quantitative Approach," Law and Society 9, pp. 581-612.

power to release a prisoner at any time. The reasoning behind this discretionary power is that prisoners should be released when they are able to return to society, having been rehabilitated, and in theory the parole board is best able to judge an inmate's rehabilitation. In 1974 in Minnesota the average time served in prison before first parole was 20 months, and many prisoners were released after much shorter periods.[9] The average time served before parole was less than one fourth of the inmates' actual sentences (the maximums).

Since the size of the prison population depends on how many people are being paroled each year, as well as on the number being sentenced to prison, the discretionary parole power becomes also a means to regulate the prison population. It is logical that parole authorities would adopt procedures to ensure that the prisons do not fill to overcrowding, but the trend in recent years has been toward a reduction in the prison population. As a result, the state penal institutions now have a large amount of unused capacity, perhaps 600 to 900 spaces out of a maximum capacity of about 2,200.

[9]This data has been made available by the Minnesota Department of Corrections.

Between 1966 and 1974, the average daily population of the prison and reformatory decreased by about 540, from 1,750 to 1,210.[10] The unused capacity in Minnesota's prisons means that modest changes in sentencing and parole policy can be considered without the fear that even a slight change will overcrowd the prisons. Nevertheless, the size of the prisons is a very significant constraint on the entire criminal justice system. If, for example, all convicted felons were sentenced to minimum prison terms of one year, the prisons would be completely filled within 1 to 2 years. (Owing to improvident changes in sentencing or parole policy, other states have experienced prison overcrowding, which has led to mass releases of prisoners.)

In general, it is difficult to predict how the prison might change in the future, with or without changes in policy. This is because of the great discretion available to both judges and correctional authorities, and because of the mutual independence of these two groups. At this moment it appears that mandatory sentencing legislation may be enacted that would require imprisonment of certain classes of criminals while at the same time fixing (determinate) sentence lengths, thereby

[10]Data on prison populations, supplied by the Department of Corrections, may be found in the 1976 Minnesota Comprehensive Plan, Governor's Commission on Crime Prevention and Control, St. Paul; pp. 649-667.

eliminating the need for a parole board. The effect of such legislation will likely be to increase the prison population, perhaps by several hundred, but the extent of the increase will also depend on what effects the new law may have on the charging of crimes and the plea negotiation process. If a mandatory sentencing law is enacted, we shall need a careful analysis of its impact throughout the system. (In the remainder of this report we shall discuss the system independently of the possible adoption of mandatory sentencing.)

Seriousness of Crime

One problem in analyzing or evaluating the criminal justice system is that knowing the number of crimes, the crime rate, or the number of people arrested does not give us much information about the seriousness of crimes. If the criminal justice system had sufficient resources to give equal attention to all types of crime, the seriousness of crime would not be a particular issue. But we know that the system exercises great discretion in who will be arrested, prosecuted, and sentenced to prison; this is shown by the funneling down of the numbers of people at successive stages of the system. We might expect that if the system must choose between prosecuting crimes of varying seriousness, those most serious will get the most attention. On the other hand, we do not expect less serious crimes to be totally disregarded, so that they might be committed with impunity. Thus, how the system handles crimes, as measured by their seriousness, can be one measure of how the system is working. We can, specifically, compare the funneling by quantitative numbers of people (figures 1-2) to the funneling by seriousness of the associated crimes.

To measure seriousness of crime we need a scale that compares one crime to another. Such a scale or index has been developed by Wolfgang and Sellin, based upon their studies of how people in general rank crimes by seriousness.[11] Following this scale, in part, we assign the following weights to crimes: homicide-26, rape-11, robbery-5, aggravated assault-4, burglary-3, and theft-2. From this scale we can find the total seriousness for any set of committed crimes. We can also find the amount of seriousness processed by the system at any stage. For example, we can assign to each court conviction the seriousness weight of the crime of conviction, or to each prison confinement the scale weight of the offense of conviction. Then multiplying the number of crimes or defendants by their respective seriousness index at each stage of the system and adding them together, we can find the total amount of crime seriousness processed throughout the system. The result of this analysis is shown in figures 4 and 5 for Part I crimes (excluding motor vehicle theft) and violent crimes in Minnesota in 1973, that is, for the same data presented in figure 1. Along with total seriousness at each

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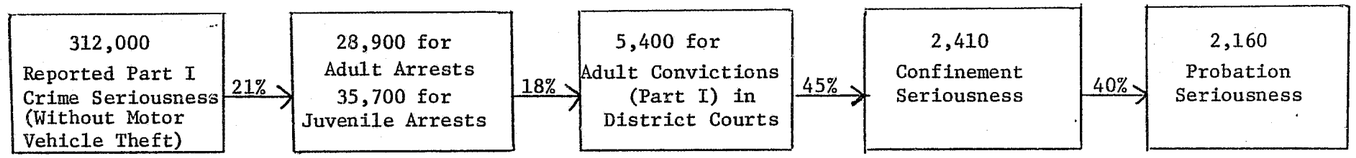
[11] Thorsten Sellin and M.E. Wolfgang, The Measurement of Delinquency, Wiley, 1964; and Alfred Blumstein, "Seriousness weights in an Index of Crime," American Sociological Review 39 (1974), pp. 854-864. The original Sellin and Wolfgang scale assigns points according to the degree of violence or property loss in a crime. In our scale here we have tried to assign values to specific crime types according to the average amount of violence and property loss occurring during these crime types in Minnesota. In the case of aggravated assault, we are less certain about what value to assign than for the other crime types; we have little data about the average amount of personal injury suffered by victims of these crimes.

SERIOUSNESS FLOWCHART



CASEFLOW

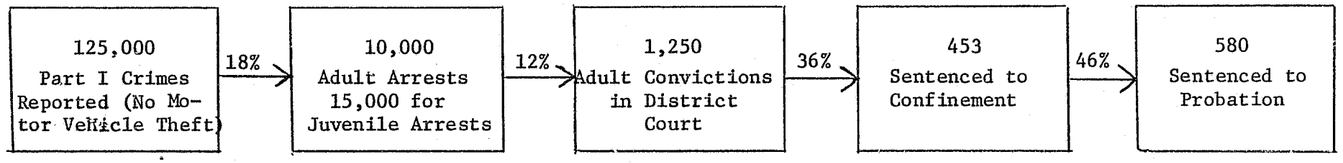
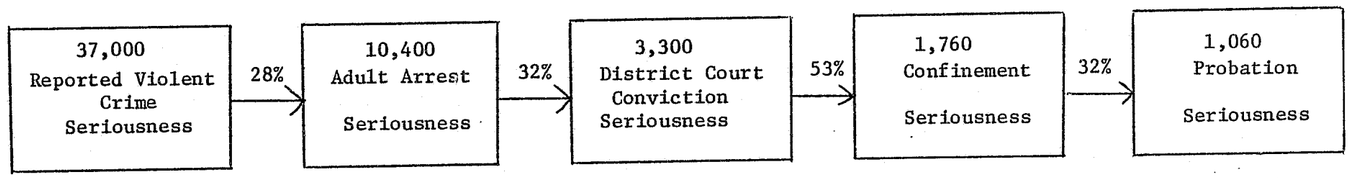


FIGURE 4. COMPARISON OF SERIOUSNESS AND CASEFLOW IN 1973 FOR PART I CRIMES (EXCLUDING MOTOR VEHICLE THEFT)

SERIOUSNESS FLOWCHART



CASEFLOW FOR VIOLENT CRIMES (ADULTS ONLY)

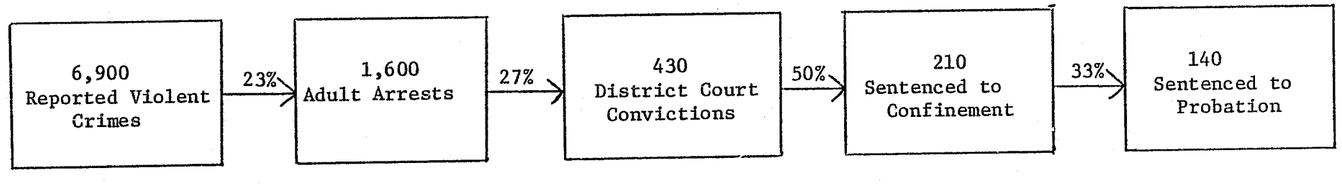
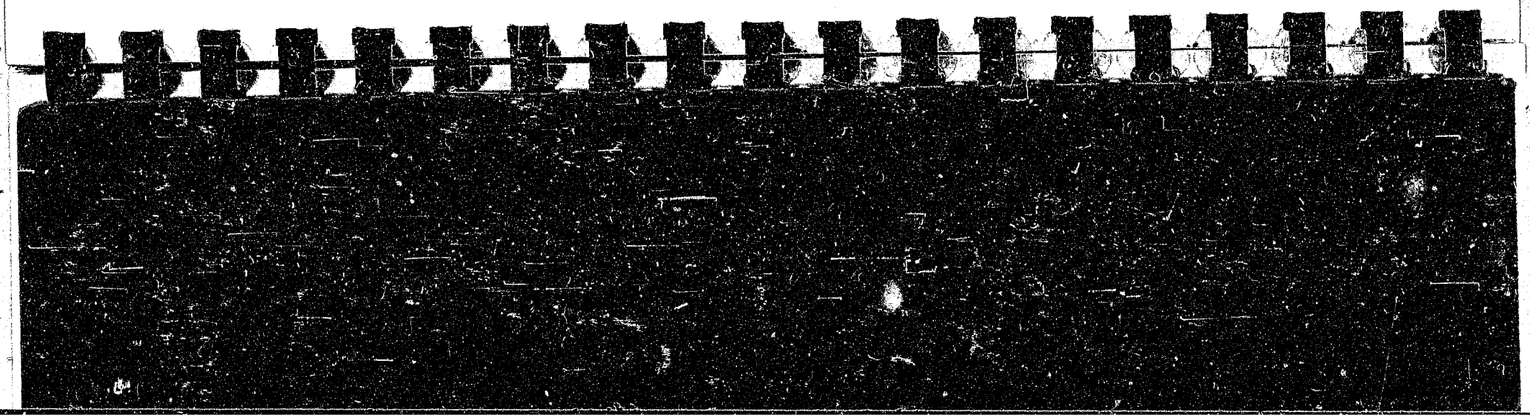


FIGURE 5. COMPARISON OF SERIOUSNESS AND CASEFLOW IN 1973 FOR VIOLENT CRIMES (ADULTS ONLY)



stage is shown the percentage that amount is of the seriousness at the prior stage.

Comparing the seriousness flowchart with the strictly numerical flowchart (figures 4 and 5), we make these observations. The two flowcharts are most alike when arrests are compared as fractions of reported Part I crime. Adult arrests account for 7% of reported Part I crimes (excluding motor vehicle theft); the percentage is 18% if juvenile arrests are included. For seriousness the comparable percentages are 9% and 21%. So we find only a slight predisposition in the system toward the arrest of the more serious offenders. At the district court level the margin of seriousness increases over the numerical: 12% of the adults arrested are convicted, and this accounts for 18% of the seriousness of the crimes of arrest. For district courts 46% of those convicted are placed on probation and 36% confined. In terms of seriousness of convictions these percentages are 40% and 45%. Thus, seriousness becomes a more decisive factor as one moves through the system, although the margin is not especially great. Note also that one effect of plea negotiation is to reduce the observed level of crime seriousness processed by the court subsystem.

Summary

Our brief overview of the Minnesota criminal justice system leads to a number of conclusions about how the system works. These are fairly obvious conclusions, but because of their importance, they should be kept in mind while assessing

potential changes in any part of the system. We note, in particular, the following:

1. The number of crimes committed in Minnesota is very large. If, as victimization studies report, there are as many as a half-million crimes yearly in the state (for a population of only 4 million), we must infer that crime is a common, widespread, social behavior, involving a substantial percentage of the population, especially among juveniles and young adults. It is perhaps more realistic to think of crime as a normal, if undesirable, part of social affairs rather than as isolated events caused by and affecting only minor segments of the population.

2. In comparison to the total volume of crime in the state, the number of criminal defendants processed by the system is very small. Thus, we cannot expect the system to have a major role in controlling or reducing crime through its direct effect on those persons coming under its authority. Of course, the criminal justice system might be vastly expanded, but this would require a substantial reallocation of our social and economic resources, and the entire complexion of our society might well change in the ominous direction of a police state. On the other hand, we cannot dismiss the importance of the system in deterring potential criminals, even though we do not know how much of a deterrent the system is. The question of deterrence is of great importance in finding the true effectiveness of the system. The deterrent effect the system may have

on potential criminals, through their perception of the likelihood of arrest or imprisonment for the commission of a crime, may be more critical to controlling crime rates than are the details of what the system does with criminal defendants and convicted offenders.

3. Judging by arrest data, we see that juveniles commit a large percentage of the violent crimes and a majority of the non-violent crimes, such as burglary and larceny. Yet the judicial system applies substantially less severe sanctions to juveniles than adults. Since evidence from a variety of sources points out that most adult criminals had formerly been juvenile delinquents, the deterrence of juvenile crime would seem even more important than deterrence of adult crime in the long-term prevention of crime. But again, our knowledge of deterrence is too limited for us to make concrete recommendations on how severe penalties should be or how they might be best applied.

4. Because of the funneling in the system, a change in the flow of defendants through any part of the system can have a great effect, even a disasterous effect, on later segments of the system. And such changes are quite possible since the potential flow greatly exceeds the actual, current, flow through each stage. Furthermore, police, prosecutors, courts, and corrections are all controlled by different governmental agencies (responsive to different political pressures), which increases the prospects for independent and uncoordinated changes by the subsystems. In other words, given the potential

volume of people who might move through the system, and the fact that each stage of the system seems to be operating near its maximum capacity, the entire system is in a precarious state. Prospective changes in any part of the system must be carefully evaluated for their effect on the whole system. This also points to the need for system-wide planning, for it is certainly in the best interests of all that improvements in any one stage are not wiped out at the next.

System Adaptation

The weakness of our flowchart description of the system is that it does not describe how the system adapts or changes. We know from the constraints on the system that an increase in case flow at one stage will not necessarily cause an equal, or even proportional, increase at the next. If the police were to arrest substantially more adults next year, for example, it does not necessarily mean that the counties will add more prosecutors nor the courts more judges and courtrooms. If the prosecutors and courts could not handle the increase in police arrests, however, the system would not collapse; prosecutors can exercise their discretion about which cases they will pursue and which they will dismiss, or they can adjust the amount of plea bargaining they will accept. Similarly, if judges were to sentence substantially more people to prison one year, the corrections authorities might respond by increasing the rate of paroles in order to keep the prisons functioning

normally, that is, within their capacity.

This ability to adapt characterizes social systems in general. It is a particular problem in our analysis of the criminal justice system because of the very great demands on the system. The system that we see now has already undergone a great deal of internal change as it has adapted to the vast increase in crime in the last decades. In fact, we know that the police already arrest more people than prosecutors can bring to trial (a constitutional right); and the courts already convict more people of serious crimes than the prisons could hold longer than a few months on the average.

Knowing these facts about the system, can we predict the effect of an attempt by law or practice to increase the number of persons being arrested, prosecuted, tried, or imprisoned, if no provision is made for a comparable increase in the capacity of the system? Such a situation might easily arise, as it has in the recent past, through an increase in crime, through public pressure on some part of the system, or through a change in law requiring special treatment for (that is, limiting discretion for) specific classes of crimes or criminals. Examples of this last possibility are laws that would restrict plea negotiation or provide for mandatory sentences, which deny probation or early parole. Since the system cannot significantly increase its case flow, any attempt to do this by a lessening of discretion or by an increase in attention given any one type of case, must necessarily be offset within the system by a

reduction in the number of other cases processed. If the system were to divert many of its resources to gun crimes or to repeat offenders, for instance, less effort would be spent on other types of cases. Unfortunately, given our poor state of knowledge about the system, we can say little more about exactly how the system will adapt to new demands. Yet this is what we must know to gauge the effect of prospective policy changes.

In order to improve our understanding of how the system works, and, especially, how it adapts to change, we shall next take a closer look at each of the subsystems. Our objective is to see how crime rate, caseload, and discretion affect the system's performance.

III. The Police and Crime Statistics

Since what we know about the incidence of crime is mainly what the police report, it is important to look at crime rates and police functions together. Although the crime rate is often used as an indicator of the effectiveness of the entire criminal justice system, the police have an intervening role in processing this data, and this bears on the quality of crime indexes as indicators of the level of crime in society. We have a vast quantity of data on crime rates, arrest rates, and clearance rates (the percentage of reported crimes "solved" by police) now being supplied by the police agencies in Minnesota. This data is available yearly and can be aggregated at county, regional, or state levels; or it may be broken down by crime types and by age, sex, and race of those arrested.[12] We also have a limited amount of data from past years to judge comparatively trends in crime rates.

The data we obtain on crime rates is subject to a variety of errors, none of which we can estimate with accuracy. The first difficulty is that many crimes, perhaps the majority of less serious crimes, are neither reported to the police nor detected by the police. Surveys of the general population have repeatedly shown much higher crime rates than those indicated

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[12]Crime data is drawn from the annual Minnesota Crime Information, op. cit.

from police statistics. Furthermore, the police do not always record crimes, even when they are reported. The underreporting of crime makes it difficult to evaluate the performance of the system. We find, paradoxically, that an increase in the size or effectiveness of a police force may actually lead to an "increase" in crime, if we judge only the reported statistics. What happens is that the police, being more capable, discover more crime or encourage more people to report it.

Despite the obvious and widely known problems associated with crime statistics, they will continue to be used as indicators of the state of crime in society and the effectiveness of the system. Therefore, it is important to take a close look at the statistical properties of this data to give us some idea about its reliability and usefulness. The fact that crime data is afflicted by reporting errors does not necessarily preclude its usefulness. If we can find out how much random, unexplained variation or error there is in the data, then we can say with more certainty when a trend in the data is real. And, consequently, we shall be more able to evaluate the merits of any crime reduction program that would use the crime rate as a measure of its success.

Variation in Crime Statistics

In order to find how much inherent variability (instability, randomness) there is in crime data, we can take a sample of Minnesota counties and urban municipalities and observe the amount of fluctuation in their crime rates over time. Crime

statistics are available at the county level for Minnesota for recent years; they are published annually in Minnesota Crime Information, available from the Bureau of Criminal Apprehension, Department of Public Safety, St. Paul.

We compute the variation as

$$V = \frac{\left| X(t+1) - X(t) \right|}{X(t)}$$

Where X(t) and X(t+1) are the values of the crime rate (or any other statistic) in a given area at years t and t+1. That is, the variation V is the absolute value of the ratio of how much the rate changes from one year to the next in comparison to the level of the rate at the first of the two years. We first determine the variation for each area or county, then find the average variation for the entire sample of counties. Finally, we compare the average variation in individual areas with that for the sample as a whole, computing V this time for the combined counties data.

As a typical case, we computed the variability in burglary rate in a sample of twenty urban municipalities and rural counties having at least 100 burglaries. We found that the average variation in burglary rates was much greater than the yearly change in burglary rates for the set of twenty as a whole. Thus, from 1972 to 1973 the average change per unit was 36%, while the variation for the combined sample was only 9%. As a further comparison, the burglary rate for the entire state increased by 10% from 1972 to 1973. The standard

deviation of the sample variation V was 32%, which points again to the wide range in year-to-year variation among the counties and municipalities. That is, we found some areas with changes as high as 70 or 80%, and others as low as 0 to 10%.

We took the same sample and calculated the variation in burglary rates from 1973 to 1974, finding a similar result. We also found the same high local variability if we looked only at urban or rural units. From 1973 to 1974, for instance, the average sample variation V in the selected rural counties was 48%, while the combined sample variation was 30%.

Another example of the great variation in crime statistics over time in smaller units of government is the variation in Part I crimes for municipalities in suburban Hennepin County. For a sample of 17 police agencies reporting at least 100 crimes, the average variation from 1972 to 1973 was 14%; for the combined 17 the variation was only 5%. (The sample standard deviation was 11%, again large compared to the average variation.) The variation in Part I crimes for Minneapolis was also about 5%, as it was for the state as a whole.

From these illustrations we see that the amount of variation or instability in the data over time depends greatly on the size of population of the unit reporting the statistics. The larger the unit's population, the less the variation over time. This is not at all surprising, of course; it is merely an illustration of well-known statistical laws. In effect, the random increases and decreases in crime rates from one year to

the next among the smaller units tend to cancel one another out when the units are combined and viewed collectively, as a single large unit. Still, we are not trying to reconfirm statistical laws. What particularly concerns us here is the large amount of variation or instability in all but the most populous crime reporting units of the state. State level data will give an accurate picture of crime trends for the state. But crime statistics for units of government smaller than Minneapolis or St. Paul are not very reliable for estimating local crime trends. This lack of reliability also implies that the effectiveness of local programs designed to reduce crime cannot be judged locally, that is, using local crime statistics. The smaller the unit of analysis, and the less frequent the crime type being considered, the more unreliable the data becomes. This situation greatly complicates the evaluation of experimental crime reduction programs, since experimental crime reduction programs are most likely to be attempted in a small jurisdiction rather than across the entire state.

We do not know the source of the random variation in local crime statistics. Presumably, the randomness is inherent in both the incidence of crime and in its reporting to or by police. Whatever the causes of variation in crime rate, it does have a significant practical effect on the criminal justice system. Fluctuations in crime rate can mean fluctuations in arrest and clearance rates and, later, fluctuations in the case loads of prosecutors, courts, and correctional facilities. As we shall

see in subsequent analysis, additional random fluctuations are added at each stage to those brought in by the varying crime rates. These fluctuations throughout the system are not visible in state level data. However, since most sections of the system operate over fairly limited population areas, virtually all of the system will be affected by local or regional variations over time. Thus, our flowchart description of the system (figures 1 to 5) overlooks an important aspect of the system: the local variability in flow rates and case loads over time. We shall return to the effect of variability on the system when we subsequently look at the operations of the courts.

One advantage that might follow from a more extensive analysis of local variability in crime and arrest rates lies in the potential for economizing services through the consolidation of police (or other) agencies. Suppose, for instance, that a police department is operating fairly well at a certain level of demand for services, that is, at a given crime rate. If the crime rate were to increase markedly in a short time, we might expect the police agency to be temporarily overloaded and less able to handle all cases. Or, conversely, if the crime rate were to fall suddenly, the agency may find itself with extra capacity. In a region consisting of several counties or suburban municipalities we expect, from our prior data analysis, that year-to-year demands on some police departments will increase dramatically, while others will decrease. That is, on the

average for the whole region demand for police services will remain fairly stable, but, locally, wide variations will occur. So it follows that if temporary surplus capacity in some departments can be used by others with greater demands, the entire group will operate more efficiently. This would be especially the case for the handling of less frequent crimes such as violent felonies. In other words, consolidation of services might improve efficiency of police services for the whole region. Whether consolidation is economically justified in any particular area, however, requires a much more detailed analysis of local conditions than we have done here. Nevertheless, our main point is that whenever we see large variability over time in the demand for services, we should be alert to possible economies through consolidation or cooperation among public agencies.

The problem of local variability in crime rates and system flow requires a balanced approach to criminal justice planning between state, regional, and local units of government. While the study of crime trends and the evaluation of crime reduction programs must be carried out as broadly as possible in the state, questions about the efficient delivery of services require a careful analysis of local conditions.

Clearance Rates

Another measure we have of the effectiveness of the police, besides the level of crime, is the clearance rate. This measure, which is routinely reported by police agencies, gives the percentage of reported crimes that are, in the view

of the police, solved by an arrest. Of course, the arrest of one person might lead to the clearance of several crimes; or several people might be arrested in the clearance of a single crime.

We would like to know whether clearance rates do in fact have any relation to crime rates. Or, more specifically, if police services become more efficient or expanded so as to increase the clearance rate, will this reduce the crime rate? We expect the clearance rate to vary with crime rates to some extent, and to be affected by random, idiosyncratic factors in the "clearing" of crimes. As we have seen for crime rates, local variabilities makes local evaluation of the police difficult, if not impossible,on these measures. So to judge whether clearance rates are related to crime rates, we must compare the effects of clearance rates on crime rates over a number of units of government having a range of different clearance and crime rates. If the clearance rate has a positive effect in reducing the crime rate, then we can expect high clearance areas to have lower crime rates than lower clearance areas; or we might expect changes in clearance rates to be inversely correlated with changes in crime rates. This is not a very rigorous research design for examining the relation between clearance and crime rates; there are many other factors involved in crime rates that should be investigated simultaneously. Nevertheless, we can by this simple method get a rough idea of what relation may exist, if any.

To test these hypotheses we first draw a sample of rural Minnesota counties and look for statistical relationships between the crime and clearance rates. What we find largely contradicts the possibility that increasing clearance rates might be effective in reducing crime. The overall crime rate is actually somewhat higher in areas with the higher clearance rates, although the clearance rates are everywhere fairly low-less than 50%—which limits the generality of the results. We find a similar pattern for larceny rates versus larceny clearance rates in a sample of suburban municipalities. It is not immediately clear why this pattern occurs; certainly it does not imply that an increased clearance rate causes the crime rate to increase. It may be that increased, or more efficient, policy activity results in both higher reported crime rates (more crime is discovered) and higher clearance rates. Or this pattern may simply reflect a tendency among police in higher crime areas to report more of those crimes that they solve, especially the common and less serious crimes. This may in turn reflect greater public pressure in high crime areas to "solve" crimes. These trends do not appear to be particularly strong, however, since for the same sample of counties cited above, year-to-year changes in clearance rates do not show any strong correlation with changes in crime rates. In general, we must conclude that the clearance rate is of questionable value as an indicator of police effectiveness in controlling crime.

The principal exception to the patterns of a positive correlation or lack of correlation between clearance and crime rates is for burglary. In a random sample of rural Minnesota counties and suburban municipalities we find a minor tendency for the burglary rate to be lower in areas with higher clearance rates for burglary. (In 1974 in the rural county sample, for instance, the correlation is -0.53 and the percentage of variance "explained" is 28%, which is higher than for the suburban sample.) Thus, if any crime is likely to be significantly deterred by higher clearance rates, it may be burglary, but our statistical evidence is not strong enough to prove this conclusively; other explanations might also be possible.

Arrest Rates

Another indicator of police activity and effectiveness is the arrest rate. The arrest rate is an important variable to consider since the number of arrests immediately affects the other subsystems, especially the prosecutors and courts; the clearance rate does not bear directly on system flow. (Persons may, however, also be brought before the courts without an arrest.)

As we have seen, the crime rates reported by local police agencies fluctuate greatly over time. This also holds true for arrest rates. The instability in arrest rates is more important than that for crime rates, however, since it directly affects the demands on police facilities, prosecutors, public defenders and the courts. To give a few examples, from 1972 to 1973, the number of arrests for Part I crimes in the

Governor's Crime Commission Region A decreased from 637 to 484 or -24%; in Region D it increased from 1,220 to 1,636 or +34%; in Region G it decreased from 17,829 to 15,371 or -14%. Both in percentage and number, these yearly variations are substantial enough to make for difficult planning and scheduling and less efficient provision of services by the police, prosecutors, and courts.

Although an arrest is usually necessary to clear a crime, the relationship between arrest and clearance rates is complex. First, we find that the ratio of arrests to crimes cleared for adults is just the inverse of that for juveniles. Comparing adult and juvenile clearance to arrest ratios for 1973 and 1974 state data, for the crimes of robbery, aggravated assault, burglary, and larceny, we see that the number of crimes cleared by the arrest of adults is in every instance greater than the number of adults arrested. (See Table 1.) Except for robbery, the clearance rate for adults substantially exceeds the arrest rate; for aggravated assault the ratio is over 2 to 1. For juveniles, however, the ratio is equally strong in the opposite sense: the number of juveniles arrested well exceeds the number of crimes cleared by their arrest; only for aggravated assault do we find a different result. (See Table 1.)

Several possible explanations might account for this great difference between juveniles and adults. It is clear that when for adults the number of crimes cleared exceeds the number of arrests, those arrested have been implicated in additional

TABLE 1. ARREST AND CLEARANCE COMPARISON, 1973-1974

Crime	Year	Number Arrested		Number Cleared By Arrest Of:		Overall Clearance Rate
		Adult	Juvenile	Adult	Juvenile	
Robbery	1973	601	495	714	279	29%
	1974	572	522	847	322	29%
Aggravated Assault	1973	730	239	1,699	242	70%
	1974	807	296	1,662	710	74%
Burglary	1973	1,706	3,628	2,571	1,933	11%
	1974	1,847	3,729	3,474	2,032	13%
Larceny	1973	6,679	10,415	10,659	6,888	22%
	1974	7,295	10,422	11,431	7,000	21%

crimes. This might happen through evidence gathered by police, or by confession of the defendants to additional crimes. (In computing clearance rates, only the most serious crime is counted when multiple crimes are involved in a single incident; thus, the higher clearance rate cannot be explained as the result of multiple charging for the same arrest and criminal event.) So long as clearance rates are considered a measure of police effectiveness, we might expect the police to connect as many crimes as possible to a defendant. But we do not know what alternatives the police may offer to a criminal defendant to encourage his confession to additional prior crimes.

The large number of juveniles arrested per cleared crime may show an over-arresting of juveniles, or perhaps that juveniles are more likely to be arrested in groups; that is, they may be more likely than adults to commit crimes in groups. Another factor is that when adults and juveniles are arrested for the same crime, the clearance is associated with the adult only. (Studies of the juvenile justice system currently being undertaken by the Governor's Crime Commission should help to explain how these arrest to clearance ratios come about.)

If we examine changes in arrest and clearance figures between 1973 and 1974 (Table 1), the relation between these two variables becomes even more perplexing and suggests a significant amount of randomness or inherent variability, which we also observed before in the crime and arrest data.

For example, from 1973 to 1974 for burglary the number of adults arrested increased by 141 while the number of crimes cleared increased by 903; that is, on the average, over six crimes were cleared with each additional arrest. Yet the number of burglaries cleared per arrest in 1973 was only about 1½, and the clearance rate increased only slightly from 1973 to 1974. The change in aggravated assaults cleared by juvenile arrests from 1973 to 1974 is also large and unexplained (Table 1). With only about 60 more arrests in 1974, about 500 more assaults were cleared.

In all, this comparison of arrest and clearance data argues against placing much importance in clearance rates as indicators of police effectiveness. Nevertheless, the disparity between the arrest: clearance ratios for juveniles and adults, which is largely unexplained, points to a need for more information about police practices in arrest, clearance, and in relation to the charging of crimes.

Seriousness of Crime at Arrest

Although not all criminal defendants are brought into the system through an arrest, the number of arrests is a good measure of the flow of people into the system. Compared to other criminal statistics, such as the crime rate and clearance rate, arrest data is the least subject to reporting discretion by the police. Of course, the police may exercise discretion in whom they shall arrest; but for the more serious crimes we can discount this possibility, whether the

arrest is of an adult or juvenile. So arrest data is highly useful for two reasons: It shows the demands that will later reach other segments of the criminal justice system, especially the prosecutors and courts. And it gives us some knowledge about trends and patterns in the frequency of crime.

Since increased police forces or heightened police activity will likely increase the number of persons arrested, we must be wary of attributing changes in arrest totals over time to comparable changes in crime rate. However, by examining those aspects of arrest data least subject to police discretion, and least influenced by the degree of police activity, we may learn some additional facts about crime trends. Specifically, we shall look at arrests for serious crimes as a function of the age of the arrested persons. Police discretion and activity are less likely to affect the data for serious crimes than lesser crimes, and the police will have only a limited knowledge of the age of a defendant before arrest.

In order to get a broad picture of crime trends from arrest data, we can find the total seriousness of crimes for which people are arrested. To measure seriousness we use the same scale as before, assigning values as follows for each arrest for each type of crime: rape-11, robbery-5, aggravated assault-4, and burglary-3. We restrict our analysis to these four crimes as the most serious crimes happening in sufficient numbers to analyze; infrequent crimes such as homicide are too

subject to random factors, and in any case would add only a small percentage to the total seriousness of the other, much more common crimes. By combining seriousness data for all four crimes, or just for the three violent crimes (excluding burglary), we also smooth out the inevitable minor, random fluctuations in data patterns, which gives a clearer picture of overall trends.

Our analysis of the seriousness of crime at arrest proceeds as follows. For each recent year we take state data on arrests by age, and plot this value against age of arrest. We can also divide the total seriousness at each age by the number of persons of that age arrested, giving the average seriousness per arrest as a function of age. This second variable, also shown graphically, lets us separate trends in seriousness due to increased number of people arrested from trends that might show a shift to more or less serious crimes being committed. Both of these factors are important in understanding the effects of crime on society as well as in the system. Partial results of our analysis are shown for 1974 and 1971 in figures 6 and 7.

As we see in the figures, clear patterns exist in crime seriousness by age of arrest. These patterns are consistently the same from 1971 to 1974. The total seriousness (of all arrests for the four serious crimes) begins at a fairly high level for juveniles, increases slightly from age 15 to 16 or 17, then steadily decreases with increasing age. The average seriousness (per person arrested) has the opposite trend,

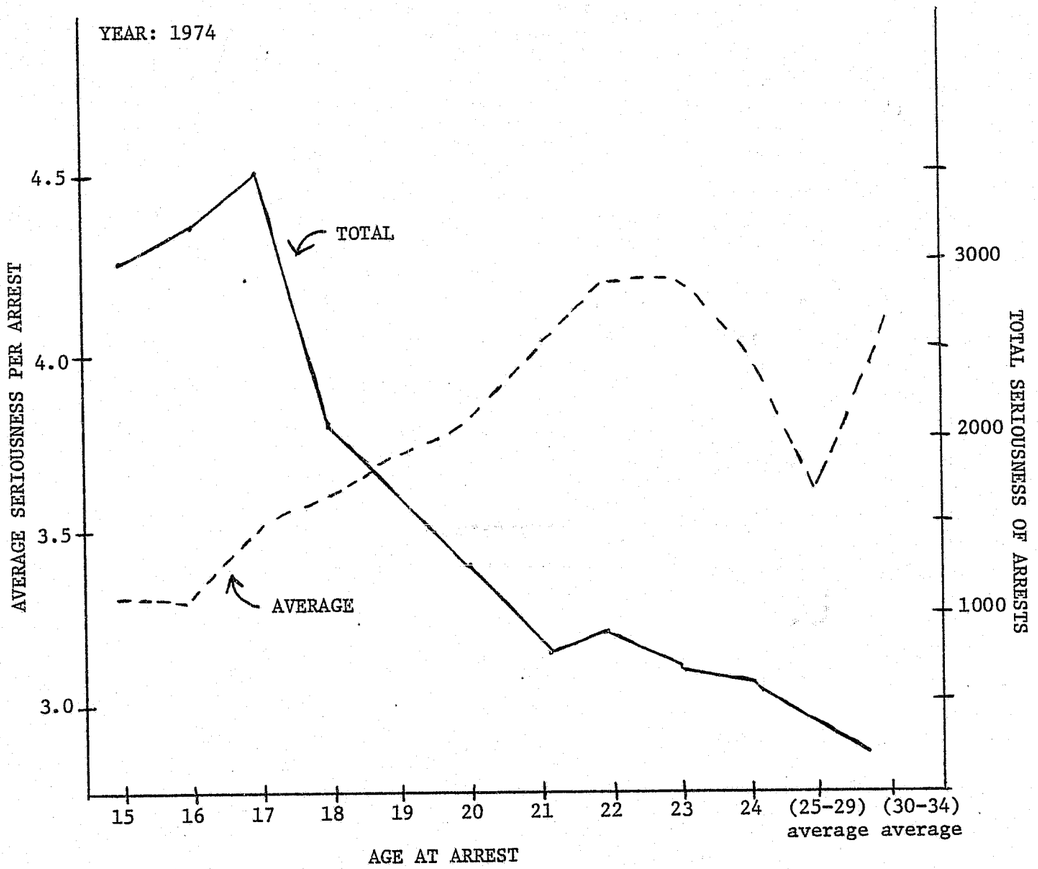

FIGURE 6. AVERAGE AND TOTAL SERIOUSNESS AT ARREST FOR FOUR SERIOUS CRIMES, BY AGE OF PERSON ARRESTED - 1974

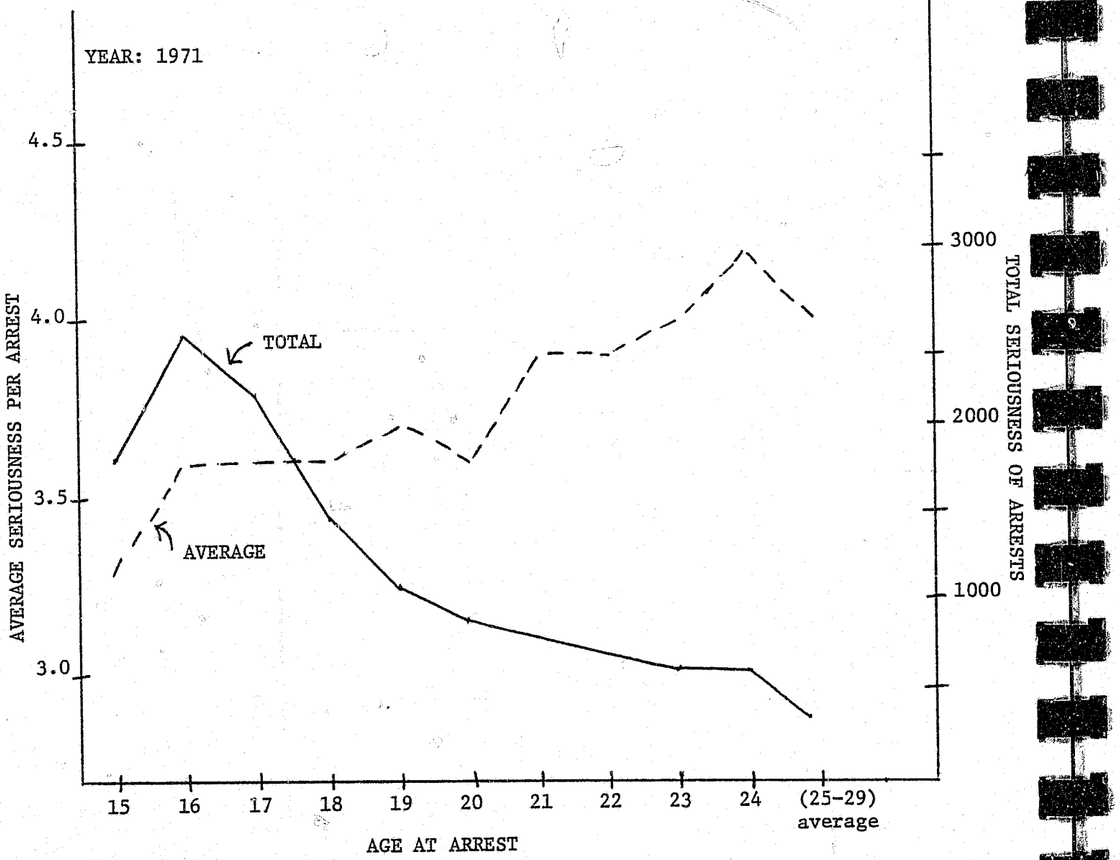

FIGURE 7. AVERAGE AND TOTAL SERIOUSNESS AT ARREST FOR FOUR SERIOUS CRIMES, BY AGE OF PERSON ARRESTED - 1971

increasing steadily with advancing age until 22 or 23, after which it levels and shows signs of random fluctuations. If we remove burglary and look at the three violent crimes, the pattern for total seriousness remains about the same, although, of course, at a lower level than when burglary is included. For the average seriousness of violent crimes, however, a different pattern emerges, or rather, there is an absence of any clear pattern. The average seriousness fluctuates from one year's cohort to the next but remains fairly constant in level. Thus, the increase by age in average seriousness of the four crimes together is due to the decreasing percentage of burglars among those arrested. Or to put it another way, we find no evidence that criminals turn to increasingly violent (or less violent) crimes as they become older. This is in spite of the fact that most of the older persons arrested have had prior arrests. Thus, we would dispute various suggestions in the literature on criminal behavior that those persons who have had prior contact with the system "learn" more about crime and are encouraged to commit increasingly serious and violent crimes.

Comparing the years 1971 and 1974, we see that the total seriousness has increased, although the pattern of decreasing seriousness by age has remained almost the same; the curve (of figures 6 and 7) has simply shifted upwards from 1971 to 1974. This implies that not only are juveniles now committing

serious crimes more frequently than a few years ago, but also that adults are continuing to commit crimes at higher rates than before. The average seriousness of arrests for the three violent crimes has also increased from 1971 to 1974 for ages 15 to 24, about 17% over all, or nearly +6% per year. But this increase does not seem to be a function of age; the average seriousness has indeed decreased for juveniles in these years, although this drop seems to be more the result of chance factors than a strong trend. In considering the increase in total seriousness, we must also keep in mind that the juvenile population ages 10 to 17 has increased only 1% per year over this period; as a percentage of total population, the percentage of juveniles has decreased. In short, serious and violent crimes have become more frequent in Minnesota in the last few years, but this is not simply because of a greater population or an increased number of arrests.

It may be that some of the increase in arrest seriousness is due to police charging people with more serious crimes than before. However, we have no data with which to test this idea directly. (An examination of prosecutorial charging over this same time period might confirm or refute it. If the police are over-charging crimes, we might find a reduction in seriousness at the initial stages of the judicial process.) But since our data is for the entire state, one would have to presume a widespread shift in police charging policy, which seems unlikely considering the large number of police agencies and their independence from one another.

While juveniles and adults are treated quite differently and separately by the criminal justice system, we find little basis for such a distinction in the seriousness of arrest by age patterns. For the serious crimes used in our analysis, the only difference between juveniles and adults is that by age cohorts more juveniles are arrested for serious crimes than adults, presumably because juveniles commit more of these crimes. The patterns of change in total and average seriousness, moreover, do not show any dramatic break at age 18, or at any other age. If we were not aware of the separate treatment of juveniles and adults by the system, we would not even suspect in studying this data that the system treats these two groups so differently. Therefore, we must conclude that despite its emphasis on treating the needs of the individual, the juvenile justice system is no more effective than the adult system in reducing the amount, seriousness, or later recurrence of crime.

The Range of Crime Data

Crime data from local units of government in Minnesota, at least outside the largest cities, shows great yearly variability. This makes it difficult to compare accurately crime statistics for different areas. Nevertheless, we also find that the reported crime rates in some areas are always so much higher than in others that the random fluctuations (being less than the differences between levels) can be safely ignored. One of the most striking features of crime in Minnesota is the wide range in crime rates across the state.

To give a few illustrations of the large maximum to minimum spread in crime rates, the rate of violent crime in Region E was 17 per 100,000 population in 1973, while in Region G it was 318; the rates for property crime in these two regions were 1031 and 4769, which is less of a difference than for violent crime yet still substantial. Even within the largest cities, which have the highest rates, we find great variation across neighborhoods. Crime data reported for Minneapolis census tracts in 1972 shows the number of residential burglaries ranging from about 30 to nearly 200 per tract. (Considering that the average population of a census tract is roughly 4,000 and that half of all burglaries are never reported to the police, we see that the neighborhood burglary rates in some areas of Minneapolis are exceedingly high, and must over a period of several years affect a large percentage of the neighborhood's households and population.) Other varieties of crime also show large ranges across Minneapolis and even greater ranges across the state. The robbery rate in Minneapolis is several hundred times higher than in some rural counties.

The existence of such a wide range of crime rates in Minnesota suggests that significant qualitative differences exist between the high and low crime areas in the social factors that contribute to crime and in the effects of the crime rate on the social environment.

Perhaps an analogy might bring out the implications of widely varying crime rates. A comparable difference in economic conditions, say in per capita income, might be that between the industrialized nations and the underdeveloped nations. The difference between the economies of industrialized and underdeveloped nations are not simply of degree, but are fundamental, qualitative differences in their entire economic systems and in the life styles of the populations. In view of this disparity in economic structures, we would be very hesitant about applying the same economic policy, objectives, or research methods to both rich and poor nations.

Returning to crime rates, we must also be especially wary of thinking about high and low crime areas as if they were merely different from one another in quantitative degree. Can we really expect the same programs and policies to suit both kinds of areas? Can we evaluate a program in a low crime area and then expect the conclusions to hold for high crime areas as well, or conversely? Unless we learn to the contrary, it seems that criminal justice planning and program evaluation should explicitly take into account the level of crime in the affected regions, and not suppose that knowledge gained about one region can be automatically transferred to another. This conclusion also emphasizes the need for specially designed programs in high crime areas. Because of the qualitative differences across regions of widely varying crime rates, we can also anticipate that programs tailored to local conditions will be more cost-effective in reducing crime or in providing

efficient services than will a single broad-gauged program extended across the state. The potential advantages of localized programs might be offset, however, if instability in local crime statistics makes program evaluation unreliable.[13]

[13]For a discussion of some possible evaluation techniques that overcome the problem of randomness or instability in crime (or other) data, see Donald T. Campbell, "Assessing the Impact of Planned Social Change", in Social Research and Public Policies, University Press of New England, 1975, pp. 3-45; and Campbell, "Reforms as Experiments", American Psychologist 24 (1969), pp. 409-429.

One approach is to design programs that will have as sudden a change or effect in the system as possible, rather than to gradually phase in a new program.

IV. The Prosecutors and the Courts

Many persons would undoubtedly agree that the main purposes of the judiciary are to protect the rights of criminal defendants, and to establish their guilt or innocence, giving those convicted an appropriate sentence under law. This is somewhat naive, however, as a picture of how the judicial process works. The fact is that very few criminal defendants have their day in court, where their guilt or innocence will be decided on the evidence by a judge or jury of their peers. In Minnesota district courts in recent years about 60 to 80% of criminal cases terminated ended in a guilty plea by the defendant, while only 10 to 20% of the cases were dismissed; the remaining cases were decided at trial.[14] (The percentage in each category varies somewhat among the district courts as well as from one year to the next.) In other words, out of those convicted of serious crimes, about 90% were convicted by their own admission of guilt. The obvious question is why are so many criminals willing to forgo their constitutional right to trial, when they might be acquitted, and simply plead guilty?

Defendants may plead guilty for a variety of reasons: because they wish to save the time and expense of a trial; because they may guess that their sentence will be light, perhaps only a small fine, probation, or a suspended or stayed sentence (all of which are common sentences); because they fear

[14]Annual Report of Minnesota Courts, op. cit.

a more severe sentence if they go to trial and lose; or, very often, because they have negotiated their plea with the prosecutors in exchange for a reduced charge or (recommended) sentence. These explanations of the motives for guilty pleas are superficial, however, and do not in themselves account for the predominance of guilty pleas among convictions. These explanations are intervening factors which in turn depend on prior conditions in the system, and, in particular, the heavy demands placed on the courts.

As the system flowchart (figure 1) shows, the number of adults arrested for serious crimes greatly exceeds the number of convictions for serious crimes, even though most of the defendants who are convicted plead guilty. The number of trials that the courts can provide appears as a major constraint in the judicial system. We see from table 2 that the number of district court trials in recent years has stayed fairly constant, at about 500 to 700 per year. This number is far short (less than 10%) of the number of adults arrested for Part I crimes, which might serve as a rough estimate of the potential demand for trials. Furthermore, in the last few years the number of trials has not shown a consistently increasing trend, although the number of arrests has increased substantially every year.

In addition to the demand for services caused by the high rate of arrests, the fluctuation or variability in local arrest rates within the court districts can temporarily cause even heavier loads on the prosecutors and courts. As we have seen,

TABLE 2. CRIMINAL CASES PROCESSED IN STATE DISTRICT COURTS

Year	Cases Terminated	Trials	Dismissed	Guilty Pleas
1971	5,328	716 (13%)	833 (16%)	3,779 (71%)
1972	5,640	611 (11%)	693 (12%)	4,336 (77%)
1973	6,131	589 (10%)	762 (12%)	4,780 (78%)
1974	5,948	651 (11%)	1,101 (18%)	4,196 (70%)

crime and arrest rates will vary greatly over fairly short periods of time within regions. The requirement that criminal cases be brought to trial within 90 days of the defendant's request compounds the problems of uneven arrest rates. As an example of yearly variations, we calculated the average of absolute changes in the number of new criminal cases filed in the ten district courts from 1971 to 1972. Between these two years the caseload varied by over 10% on the average among the districts, and changes as great as 20% occurred in some districts. (In contrast, the courts as a whole showed only a 4% increase in the number of new cases filed.) Thus, the courts must constantly adapt to temporary changes in caseload demands which result from prior fluctuations in crime and arrest rates. As in the case of police agencies, temporary variation is a potential source of inefficiency because it makes an even scheduling of work difficult. And again, there may be chances for improved efficiency in court service when the chance variations are leveled out by cooperation or consolidation of services across larger regions.

Plea Negotiation

Although we do not know the true extent of plea negotiation, the prevalence of guilty pleas suggest that it happens in a large percentage of cases. Since the prosecutors can bring only a small percentage of those arrested to trial, and cannot indefinitely postpone the trial of any defendant, the threat of trial becomes mainly a bargaining device in plea

negotiation and is also, perhaps, an inducement to additional guilty pleas that are not directly the result of a negotiation. In a plea negotiation the defendant trades his right to trial for a reduction in the charges originally filed against him or for a recommendation of a less severe sentence than the maximum prescribed by the law for the crime charged; the guilty plea must be accepted by a judge in court. To judge the importance of the guilty plea and of plea negotiation in the judicial process, one has only to imagine what would happen if all defendants insisted on their right to trial. Since few more could be tried than is already the case, most defendants would necessarily be set free. Thus, ironically, we might say that if it were not for the cooperation of the criminals, the criminal justice system would virtually collapse. This has not happened yet because defendants plead guilty out of self-interest rather than in expectation of the benefits that criminals as a group might obtain if they banded together and demanded trials. Nevertheless, the judicial system is quite sensitive to any change in the willingness of defendants to plead guilty, and we should be alert to any sign that this willingness might be decreasing.

In an ideal analysis of the criminal justice system, we should be able to estimate the degree of leverage that the number of trials allows in the plea negotiation process. That is, we would like to know what benefits might be gained in the rate of convictions and whether guilty pleas might be obtained with lesser reductions in charges if we increased the

provision of trials and related court services. Conversely, we need to know what, if anything, the system loses in the plea negotiation process in terms of the difference between the potential number and severity of convictions if all defendants were tried in court and what is actually being achieved through plea bargaining. And if we knew more about plea negotiation, we would probably also know more about what induces non-negotiated guilty pleas. Without a knowledge of the extent and degree of plea negotiation it is very difficult to evaluate the effectiveness of the courts or to make comparative judgments on public expenditure between the police, courts, and corrections. For example, since the police are already arresting far more people than the courts are prosecuting, a greater investment in court service might be relatively more beneficial to the overall system than a comparable expenditure on the police.

Although we do not yet have enough data on plea negotiation in the state to weigh completely its effects on the system, we can get some idea of the significance of plea negotiation by analyzing available data. (Prosecutors' records contain information on plea negotiation in individual cases; this information is neither analyzed by the courts nor generally available to the public. However, the Governor's Crime Commission is currently beginning a study of plea negotiation based on data compiled from prosecutors' records.) As a case study on the relation between demands on the courts and plea negotiation, we compare the effectiveness of the state district courts in 1970 and 1971. According to data published in

Minnesota Crime Information 1971 (Bureau of Criminal Apprehension, St. Paul) on cases processed by the district courts for major crimes, the number of cases increased from 3,300 to 4,200, or over 25%, from 1970 to 1971. Despite this large and sudden increase in caseload, the conviction rate remained the same, at 88%. Furthermore, the percentage of cases settled by guilty please increased slightly, from 81% to 83%, and the number of convictions by trial remained almost the same. In other words, despite a much greater load on the system in 1971, the prosecutors had just as much success in obtaining guilty pleas. How was this possible, considering the already heavy demands for court services? The answer lies again in plea negotiation; in order to keep a high conviction rate, defendants appear to have been given better, more lenient deals than before.

We can roughly assess the change in plea negotiation between 1970 and 1971 from conviction and sentencing data. We note first a shift toward convictions for less serious crimes. The ratio of aggravated robbery convictions to simple robbery convictions decreased from 1.6 in 1970 to 1.4 in 1971. This might also have been caused by an increased proportion of the less serious, simple robberies taking place or being charged as such at arrest. But looking further at convictions, we find that although the percentage of convicted robbers receiving prison or reformatory sentences stayed about the same (42%), the percentage of those convicted of aggravated robbery receiving such a sentence actually decreased from 55 to 45%.

And the percentage of those convicted of simple robbery receiving prison or reformatory sentences increased from 30 to 35%, apparently a partial compensation for a prior reduction in charge. Although the number of robbery convictions increased from 1970 to 1971, it was at a cost of reduced charges and sentences.

For burglary we find a similar result. The number of burglary convictions increased from 577 to 663 and the conviction rate from 92% to 93%. But the percentage of convicted burglars receiving prison or reformatory sentences decreased from 23% to 17%, which in fact meant that 18 fewer burglars went to prison.

The net impact of the large (27%) increase in demands on the prosecutors and courts from 1970 to 1971 was that although the number of people convicted increased in proportion to the increase in demand, the number of those convicted receiving prison or reformatory sentences actually decreased. The 27% increase in case load led to a comparable 20% to 15% drop in the percentage of those convicted ending up in a prison or reformatory. Thus, the system was able to increase the number of convictions from 1970 to 1971, but only by reducing the severity of sentences. Whether this trade-off between convictions and sentence severity was a net gain (or loss) to the system depends on the relative benefits of conviction over severity of sentences, something we know little about at present.

This brief analysis points to several conclusions about the working of the judicial system. First, without a better knowledge of plea negotiation, we cannot accurately determine the efficiency or performance of the system. Second, although the system is quite adaptive to changes in demands, the net performance of the system is still very much bound by the basic system constraints, such as the number of personnel and the limit on the number of possible trials. The system is being forced to choose or trade between (1) fewer convictions on more serious charges with longer sentences, and (2) more convictions to lesser charges with a greater proportion of those convicted receiving probation or suspended sentences. If we think of the chance of going to prison as a measure of deterrence to crime, as various studies on the subject have indicated it may be,[15] plea negotiation is not effective in increasing deterrence; it might even reduce the deterrence to crime. Thus, if the police increase the arrest rate, it will not necessarily improve the deterrence of the criminal justice system; the level of deterrence may even decrease if the increased number of arrests further overloads the courts. Thus, a simple expansion of police forces without a comparable expansion of court services will not necessarily lead to an improved criminal justice system overall.

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[15] On deterrence see William C. Bailey, op. cit., James Q. Wilson, op. cit., and Shlomo Shinnar op. cit.

As a further illustration of the relation between judicial case load and the frequency of plea negotiation, we can compare these two variables across the ten district courts in Minnesota. In 1972, we find that the percentage of cases terminated by guilty pleas increased strongly with the criminal case load per judge in the district. (Statistically, the explained variance of a linear fit is almost 50%, and the slope of the regression line is 0.34.) This result indicates that the work load of judges has a substantial bearing on the plea negotiation process, although the negotiation is actually carried out between prosecutors and defendants. Apparently the busier courts in 1972 were more willing to negotiate for guilty pleas.

If we duplicate this analysis for 1974 a different pattern emerges. As the case load per judge goes up, the percentage of cases ending in a guilty plea shows a weak tendency to decrease, but the dismissal rate of criminal cases increases fairly strongly with case load and more so than in prior years. Apparently the behavior of the system has changed somewhat in the last few years. What has happened in Hennepin County (the fourth district) seems to show the trend. In 1971 in Hennepin County the dismissal rate of completed criminal cases was only 7% and the guilty plea rate was 78%. By 1974, the dismissal rate had increased to 20%, and the guilty plea rate had fallen to 68%. The case load per judge in Hennepin County in 1974 was second highest of all ten districts. The seventh district had the highest load and also the highest dismissal rate at 36%. Perhaps ahead of the

trend, Ramsey County had a 17% dismissal rate in 1971, which is about the same as in 1974. Yearly rates of dismissal, guilty pleas, and trials are given in table 2 for the ten district courts aggregated together. The combined data shows a recent rise in the dismissal rate and a drop in the guilty plea rate, but does not show the effect of case load, which is better seen at the district level.

This pattern of change in guilty pleas and dismissal rates in recent years is difficult to interpret. In particular, we did not expect to see a change in the strength of the statistical relationships between case load and the guilty plea rate or dismissal rate, weakening for the first and strengthening for the second. It may be that the plea negotiation process is becoming less effective in inducing guilty pleas. This could come about, for example, if criminal defendants, who are often repeat offenders, are learning to "beat the system" by not pleading guilty on weaker cases and thus increasing the load on prosecutors and courts. Since the plea negotiation process is so crucial to the working of the system, and is highly vulnerable to any lack of acquiescence by criminal defendants, we should be alert to further changes of the kind seen in the past few years. Other factors that might lead to increasing dismissal rates are changing levels of experience of public defenders or prosecutors, tightened rules on admissability of evidence, and the new, more stringent court procedures. What effect these might have we do not know. We probably cannot, however, attribute the observed changes in dismissal rates to

possible changes in the quality of arrests. Because the number of arrests well exceeds the number of cases processed by the courts, we would expect the prosecutors to sort out and drop the weakest cases before they are brought to court.

Sentencing Policy and Deterrence

Once a conviction has been obtained, a judge must determine the appropriate sentence. The sentence severity will depend on a number of factors: the legally prescribed limits for that crime, the criminal's past history, mitigating circumstances surrounding the crime, and, perhaps, the plea negotiation, among other possibilities. The (district court) judge has great discretion in setting the sentence, which may range from a prison, reformatory, or jail term to release on probation or a suspended sentence; the convicted person may be directed to a special treatment or rehabilitation program. Despite the wide sentencing power of the judge, he does not have the power to keep a convicted offender in a state penal institution for any length of time. Although the judge can sentence people to prison, the parole authorities decide when the prisoner will be released, within the maximum prescribed term of his sentence. Thus, the judge's real sentencing authority is mainly to decide whether the convicted person receives a prison sentence, a jail sentence (up to one year), or is released on probation (or by some equivalent alternative.)

To know how much time inmates are spending in prison, we will have to look at the corrections agencies, not the sentences

given by the courts. So to analyze the effect of judicial sentencing on the overall system, we should look primarily at the probation or incarceration decision. The rate at which persons are placed on probation, or otherwise not confined, is another key variable in analyzing the system. Any change in this rate, whether it be the result of legislative action (as by a shift to mandatory sentencing) or be simply a change in the attitudes of judges, will have a large and immediate impact on the correctional institutions. It may also have a less direct, but equally important, effect on the plea negotiation process; a higher rate of confinement may reduce the guilty plea rate or make necessary greater reductions in charges or sentences. (One might argue that prosecutors are already striking bargains as good as possible, or as severe as they desire, with those who plead guilty. If this is approximately true, then any increase in severity of sentences or a diminished chance of probation will be offset by a comparable reduction in guilty pleas or charges of conviction so that the net effect will be zero. We see this in other states where excessive sentences have been enacted by the legislature for certain crimes; inevitably the intended effect is nullified by the system, willingly or unwillingly.)

Substantial percentages of those convicted for almost all types of crime are released on probation or receive suspended or stayed sentences. In 1973, for instance, 30 of 70 convicted for rape were released on probation; for robbery it was 37 of 148; for aggravated assault 64 of 174; for burglary 237 of 427.

In all, about 2,000 (or 60%) of those convicted in district courts each year are released immediately. This is such a large number, nearly equaling each year the maximum capacity of the state's penal institutions, that any substantial decrease in the probation rate will quickly overload the state's correctional facilities (unless the parole board would compensate by increasing the parole rate).

The trend of the past few decades has been an increase in the percentage of those receiving probation instead of incarceration. This is shown in figure 8. Moreover, as figure 9 shows, the number of persons being sentenced to prison is lower now than in the 1930's. In spite of the continuously increasing crime rate, only in the last decade has the number of persons being sentenced to prison increased. However, this recent increase in incarcerations has not kept pace with the rate at which convictions have increased for serious crimes. Thus, despite an increasing crime rate, more convictions by the courts, and more people being sentenced to state penal institutions, the probation rate has still increased. If we relate the deterrence of the criminal justice system in part to the probability of someone convicted of a serious crime going to prison, then clearly the system has less deterrence now than at any time in its history. In fact, with the probability of imprisonment so small, we might question whether it does deter crime. We do not know enough about human psychology to say how deterrence varies with the probability of imprisonment (or any other probability, such as arrest).

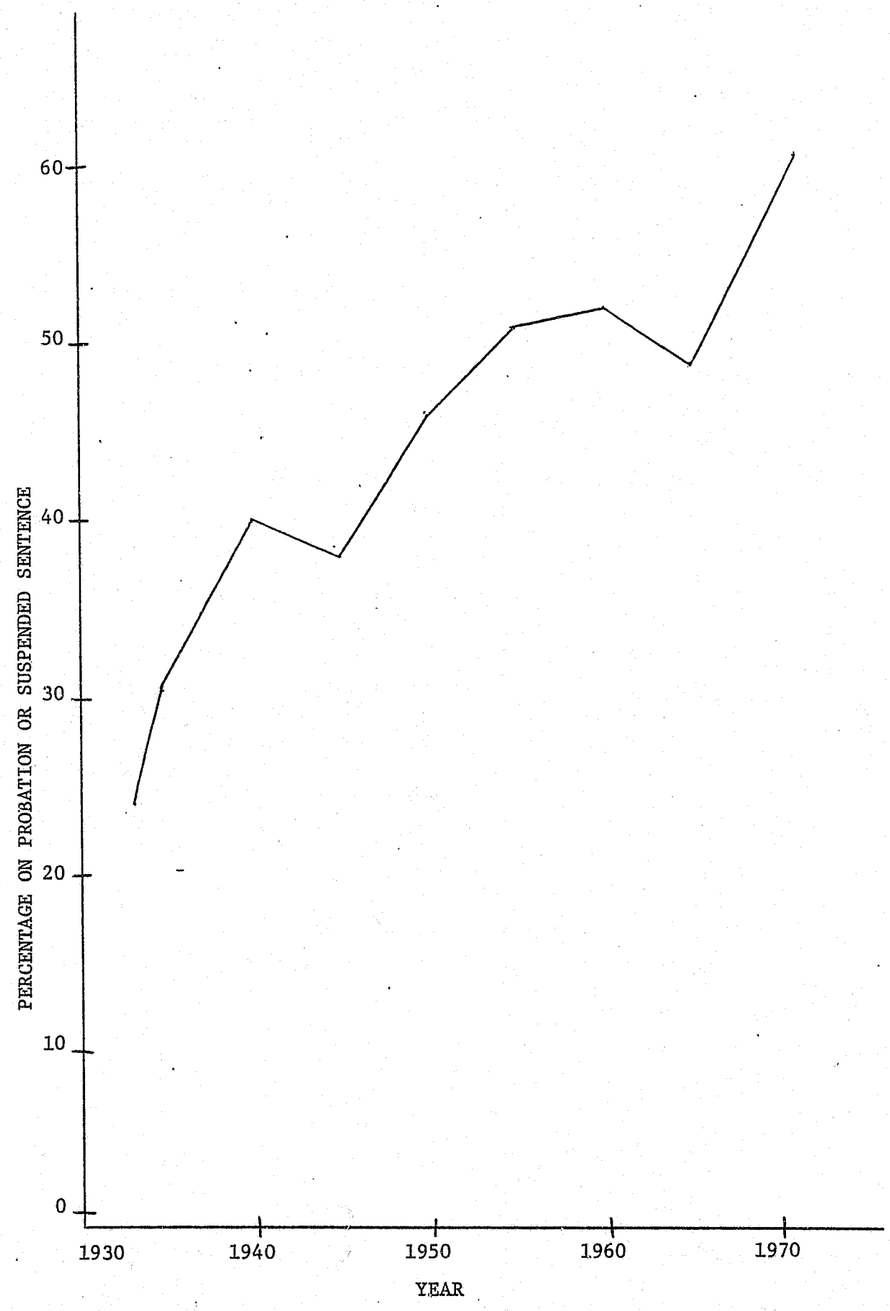

FIGURE 8. PERCENTAGE OF THOSE CONVICTED OF MAJOR OFFENSES IN DISTRICT COURTS RECEIVING PROBATION OR SUSPENDED SENTENCES

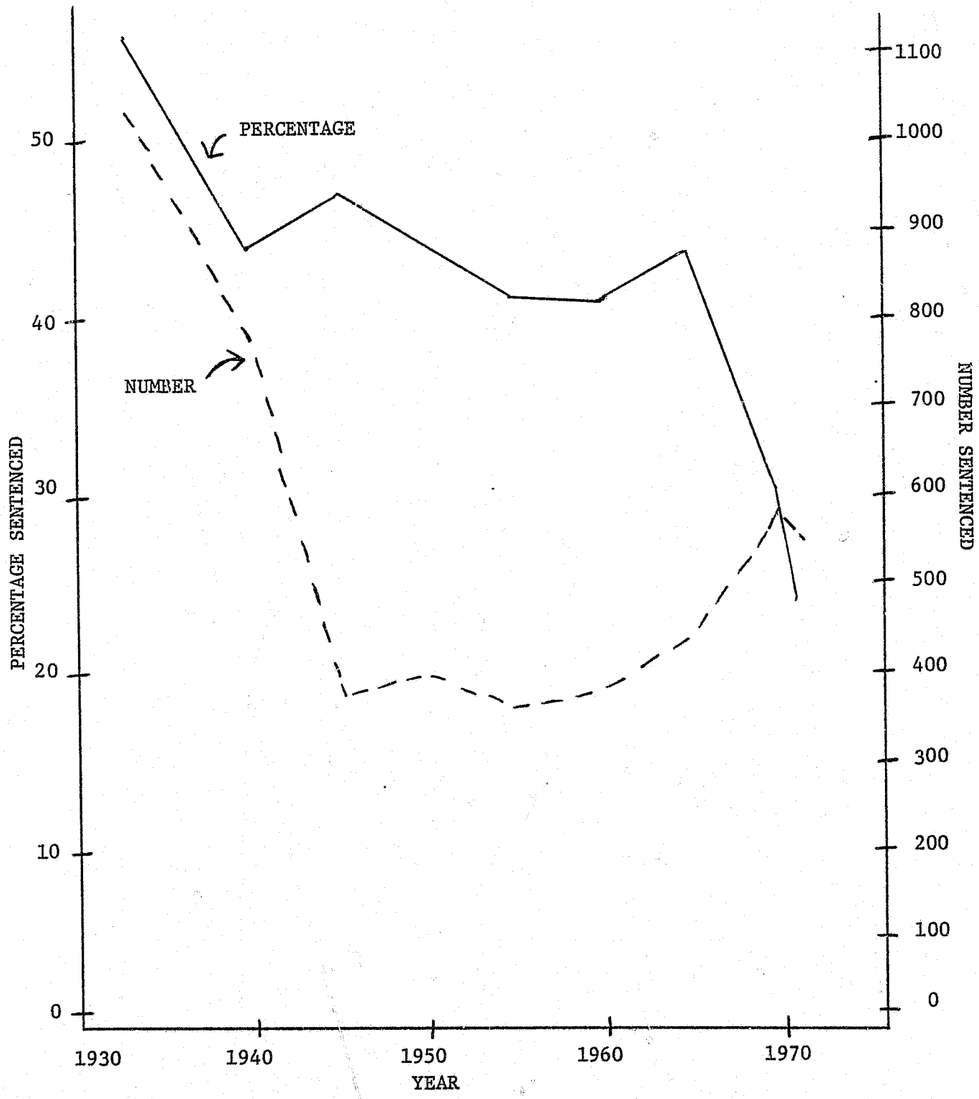

FIGURE 9. PERCENTAGE AND NUMBER OF THOSE CONVICTED OF SERIOUS OFFENSES IN DISTRICT COURT WHO RECEIVED SENTENCES TO PRISON, REFORMATORY, OR STATE JUVENILE CORRECTIONAL FACILITY

So we should not assume that deterrence will increase or decrease linearly with changes in the probability of imprisonment, even if these two factors are correlated; a threshold probability may be necessary for any deterrent effect to be present.

Assuming that the chance of imprisonment is a deterrent to crime, we can see that as the crime rate has increased over the past few decades, the deterrent effect of the system has decreased. However, this does not mean that all of the crime rate can be attributed to falling deterrence. Much of the rate increase, perhaps the majority, is simply due to demographic change, especially the (until recently) falling average age of the population; it has always been the case that younger people are more likely to commit crimes. Nevertheless, the courts did not expand their services to meet the natural increase in crime that they should have expected from changes in the size of the population and in the age distribution. (In contrast, the school system greatly expanded during the 1950's and 1960's.) Thus, the net effect was that the deterrence in the system began to decrease as the load on the system increased. Deterrence theory would then predict a further increase in crime above that due only to demographic change. Such an additional increase has taken place and apparently is still taking place, but whether or not this is entirely a function of lessened deterrence cannot be decided with the available evidence. The age distribution is nearly stable now, so that if the crime rate continues to increase in

the next few years, and this is not just the result of better reporting of crimes, then advocates of a deterrence theory of crime will have a much stronger case than in the past.

Conclusion

The courts are a puzzling area in our analysis of the overall criminal justice system. We know that for the most part they do not determine by trial the guilt or innocence of criminal defendants, perhaps their main intended function. But exactly how the prosecutors and courts operate, what goes on in prosecutors' charging decisions, in plea negotiations, and in sentencing decisions is not open to public scrutiny. For this reason we cannot rationally evaluate the performance of the courts; in the absence of specific system objectives or of knowing "what works" in reducing crime, it is not even clear what standards we might use as measures of performance. And without a measure of performance it is hard to weigh the benefits of expenditure on court services. The development of clear, quantitative standards of performance and their application to the prosecutors and courts would be a very worthwhile research program. Compounding our ignorance about the courts is the great discretion of prosecutors and judges, which makes it difficult to predict how they will operate in the future or how they might respond to changes in other areas of the system, or perhaps if imposed by the legislature. Nevertheless, we cannot expect the courts to work much differently than they now do, no matter what policy change might be desired, unless

the real capacity of the courts to prosecute and try cases is substantially increased.

V. Corrections

Although only a small percentage of criminals are confined in penal institutions, it is hard to imagine a criminal justice system that would not have the power to lock up convicted criminals. The seeming contradiction between the high crime rate in the state and the relatively small number of persons sentenced to prison points to the main difficulty in judging the effectiveness of the state's penal institutions and its corrections policies. The goals of correctional policy are punishment, the deterrence of crime, the protection of the public, and the treatment or rehabilitation of the convict (to prevent his return to crime). Of these several goals, however, we find that only the deterrence capability of prisons may relate significantly to the total crime picture in the state. Although the public is protected by confining dangerous criminals, this has little bearing on the crime rate due to the much larger number of criminals not in prison.

Moreover, the weight of research evidence now shows that rehabilitation programs are largely ineffective in reducing the rate of recidivism.[16]

Closing the prisons

To focus on the problem of what function the prisons have, suppose that all state prisons were closed and the inmates released. What would be the effect on crime? This is a very difficult question to answer. Let us first try to estimate the increase in crime that might come directly from those who would have been in prison. The number of inmates released would be about 1,300. From past studies on the prison population, we know that 28% of all inmates released on parole will be convicted of new felonies within two years;[17] however, most of these convictions will occur in the first year, say about 20% for purposes of this argument. Thus, the

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[16] On rehabilitation see Leslie T. Wilkins, Evaluation of Penal Measures, Random House, 1969; Robert Martinson, "What works? Questions and Answers About Prison Reform" The Public Interest Spring 1974, pp. 22-54; Wilson, op. cit.; Residential Community Correction Programs, Governor's Commission on Crime Prevention and Control, St. Paul, April 1975; James Robinson and Gerald Smith, "The Effectiveness of Correctional Programs", Crime and Delinquency, 1971, pp. 67-80; Walter C. Bailey, "Correctional Outcome: An Evaluation of 100 Reports", in Crime and Justice, edited by Radzinowicz and Wolfgang, Vol. 3, pp. 190ff.

[17] Data on recidivism was provided by the Department of Corrections. See also the 1976 Minnesota Comprehensive Plan, op. cit., p. 700.

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1 OF 2

closing of the prisons might add roughly 20% of 1,300 or 260 new felony convictions in one year and another 104 in the next, for the group of former inmates. After the first year we must also consider the number of convictions of the 750 who would have been going to prison each year. Applying the same recidivism rate to this group and adding up the total convictions, we get 200 to 250 convictions as a rough estimate of the average number of additional felony convictions each year. (This rate will start higher, but decrease over succeeding years, stabilizing at about 200.)

To find the effect on the crime rate, we should multiply the number of convictions several times over, since some criminals could probably commit several crimes before being caught and others would never be caught. So let us take 1,000 crimes as a liberal guess of the number of felonies added to the crime rate each year, and compare this number with the actual crime rate. Yearly there are reported 80,000 serious (Part I) crimes in Minnesota, excluding theft of articles under $50 in value and auto theft. Thus, the addition of 1,000 crimes would add only slightly more than one percent to the serious crime rate; this number is so small as to be undetectable in the normal changes and variations in crime rate. To reach even a ten percent increase in serious crime, each released convict would have to commit, on the average, six reported crimes per year, which might be 12 total serious crimes, since half of all crimes go unreported. This would seem an

unreasonably high crime rate for most criminals, although we do not have conclusive evidence on the question. The effect of closing the prisons on the overall crime rate for all types of crimes would, of course, be even less than the estimate made here.

If closing the prisons would have so little effect on the crime rate, do we need to have prisons? Our common sense answer is yes, we do need prisons, and certainly public opinion would make closing the prisons politically unfeasible. Closing prisons would be too much like condoning crime. Thus, it seems that the prison is more important as a deterrent to crime than as a means of directly reducing the crime rate by holding potential repeat criminals in custody. Unfortunately, we do not know how much of a deterrent the prisons are; we cannot say with any accuracy how many crimes they prevent. Current arguments that favor sharp reductions in prison populations rest on the facts that closing prisons would have little direct effect on the crime rate and that they are not successfully rehabilitating convicts. These arguments should be rejected, however, unless it can be <u>proven</u> that prisons have no larger deterrent effect. Since we do know with certainty that reducing prison populations will lead to more crimes, the burden of proof for the benefits of this policy should be with its advocates.

Recidivism and the Preventive Effects of Confinement

If closing the prisons would have little direct effect on the crime rate, one might also argue that this supports a large expansion of the prison system so that it will have a significant effect. We can prevent crimes by confining criminals to prison. Indeed, adding to prison populations is the most certain way we know of to reduce crime. We have no estimates on the number of potential crimes prevented by the police or courts nor how much an expansion of these services might reduce crime. But we can judge from known rates of recidivism how many crimes might be prevented through long-term confinement of repeat criminals. Knowing the number of crimes that might be prevented, we might also estimate the public expenditure required to do this by maintaining a prison population of a given size.

To find the preventive effect of confinement, we need to look at the recidivism rates of those criminals in prison as well as those outside. The various statistics available on the recidivism rate show it to be quite high. As stated earlier, the two-year reconviction rate for felonies by paroled prison inmates is 28%. And the percentage of the prison and reformatory population having prior convictions is 40%.

(Incidentally, this is the same rate seen in an extensive study of recidivism among felons in Denver, one of the largest such studies undertaken.)[18] In 1974, among those convicted in Hennepin County district court of felonies or gross misdemeanors and referred to Hennepin County Court Services for probation or a presentence investigation, 60% had prior convictions.[19]

The Hennepin County data shows another important aspect of recidivism: the large percentage of criminals with multiple prior convictions. For example, among the 1,128 persons convicted of felonies or gross misdemeanors in Hennepin County in 1974, and referred to Court Services, 430 had no prior convictions, 311 had one, 196 had two, and 191 had three or more. If these frequencies remain about the same in the future, it means that the group of 430 persons with first convictions in 1974 will eventually be convicted of 1,300 additional crimes, or three per person on the average. The 311 with two convictions will get another 583 convictions. Although many first or repeat offenders will never commit another crime, the number of crimes eventually committed by recidivists is

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[18] Stephen F. Browne, et. al., Characteristics and Recidivism of Adult Felony Offenders in Denver, Denver Anti-Crime Council, Denver, 1975.

[19] Data provided by Hennepin County Court Services; See also the 1976 Minnesota Comprehensive Plan, pp. 683-686.

generally greater than the total number of recidivists and non-recidivists having any particular number of convictions.

Now to estimate the number of convictions of repeat offenders statewide, we must multiply by several times the data for Hennepin County, which handles only about one third of the state's criminal cases. And we must multiply the number of convictions to arrive at the number of crimes, since there may be several crimes that remain unsolved for each conviction.

To weigh the preventive effect of long-term confinement, consider this example. If each year the state imprisoned all second-time felons for very long terms, we would likely prevent several thousand future crimes per year, judging from the recidivism data on Hennepin County. Note, however, that this would still be only a small reduction as a percentage of total crimes in the state, ignoring for the moment any additional deterrent effect of this policy. The main practical obstacle to implementing such a policy of confinement is that the capacity of the prisons is too limited to allow any great increase in the prison population. For our hypothetical example, perhaps 5,000 or more second-time felons would be added to the prison population over a period of years. This would require construction of three or four new prisons equal in size to the present capacity of Minnesota's prison system. Construction plus operating costs would

be an extraordinary public expenditure. Annual costs for the present men's prison are about $7,000 per inmate; for the reformatory about $10,000. In short, while crime can be prevented by confining criminals, this is very expensive—perhaps $10,000 or more per crime per year—and short of a massive expansion of the state's prison system, this procedure will barely reduce the crime rate.

Crime Prevention

We do not have any data on how much it costs to prevent a crime by hiring more police or by using other preventive measures. So we cannot say whether prisons are more or less cost-effective than other aspects of the criminal justice system in reducing crime. Still, prisons are so expensive and contribute so little to the direct (but perhaps not deterrent) reduction in crime rate that alternative methods of crime prevention should be given strong attention. We know, for example, that "Operation ID" is a very inexpensive method of reducing burglaries in those houses and businesses enrolled in the program. If it can eventually be shown that this reduces burglary rates overall, and not just for those in the program, then this would be a very cost-effective alternative to confining more burglars in prison or making expenditures in other areas of the system. Other prevention programs, such as "Crime Watch" or those involving redesign of urban neighborhoods, also deserve careful consideration. In general, any police practice that might reduce crime

through its prevention rather than through increasing the number of arrests will have the added advantage of placing less burden on the courts. As we have seen, an increase in arrests without a corresponding expansion of court services may be counter-productive, and possibly lessen the overall effectiveness of the system.

Although the current policy of confining persons to prison aims at the most serious offenders, other procedures might be more effective. For example, it might be more of a deterrent to crime if all convicted felons, including first offenders, were sentenced to at least short periods in a jail or prison, rather than being granted immediate release on probation. We do not have any evidence as to whether short minimum terms might deter crime, but it is a testable alternative to the present policy, which does not seem very effective. In fact, this alternative may be the only significant and viable change that can be made in current policy that does not require a large expansion of prison capacity; sufficient excess capacity exists in the penal system to experiment with short-term confinement.

The advantage of minimum short-term confinement over present policies is that it would raise the minimum punishment or deterrence level of the system. As it is now, first offenders are barely punished at all while the serious, repeat criminals receive the most severe sentences. However, as far as a possible deterrent effect

goes, those repeat criminals to whom the system is most severe are proven by their criminal histories the least likely to be deterred by either the courts or corrections. Therefore, if a small increase in punishment or deterrence would have any effect (and the system only has the capacity for a small increase overall), it seems logical that it might have its greatest effect if applied to those not yet enmeshed in criminal careers. As the Hennepin County data shows, first-time felons will be convicted, on the average, of three or more later crimes; so there is a good potential for reducing crime by giving more attention to first offenders. In this connection we should also add that we have no data on the cost-effectiveness of current probation services, although it is clear from the high recidivism rate that they are largely ineffective.

Recent Corrections Policy

Having considered the effects of various alternatives in corrections policy, we can compare them with actual trends in Minnesota in recent years. As seen in figures 10 and 11, since 1970 the number of prison inmates paroled each year has increased, and correspondingly the average time served before first parole has sharply declined.[20] From 1970 to 1974 the average time served by all inmates before their first parole dropped from 36 months to 20

[20]Data supplied by the Department of Corrections.

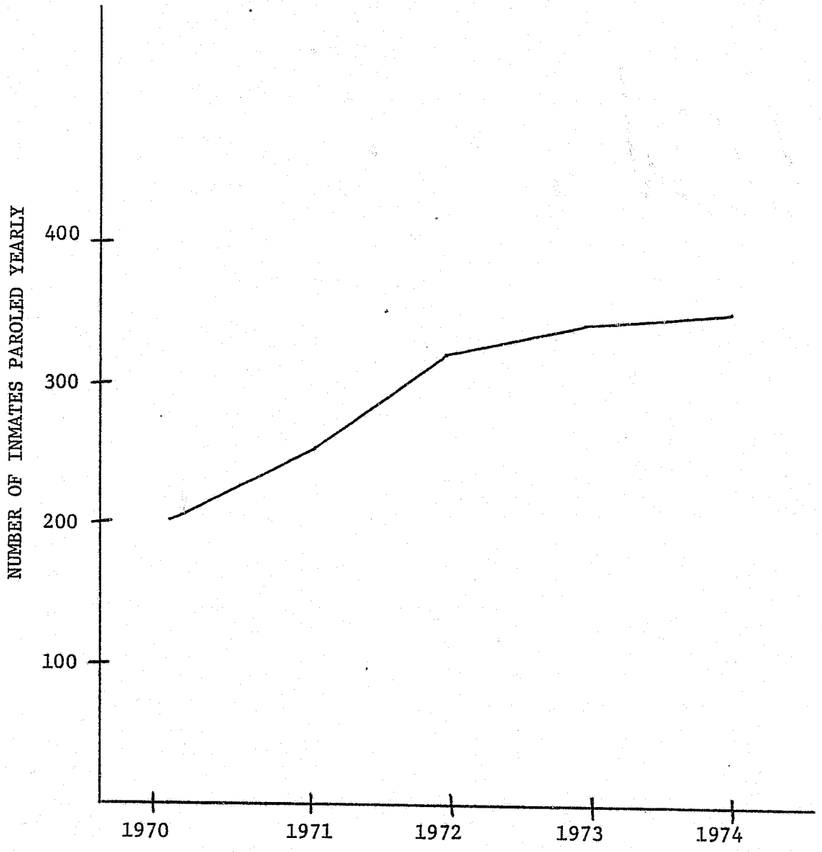

FIGURE 10. NUMBER OF INMATES PAROLED FROM MINNESOTA STATE PRISON YEARLY

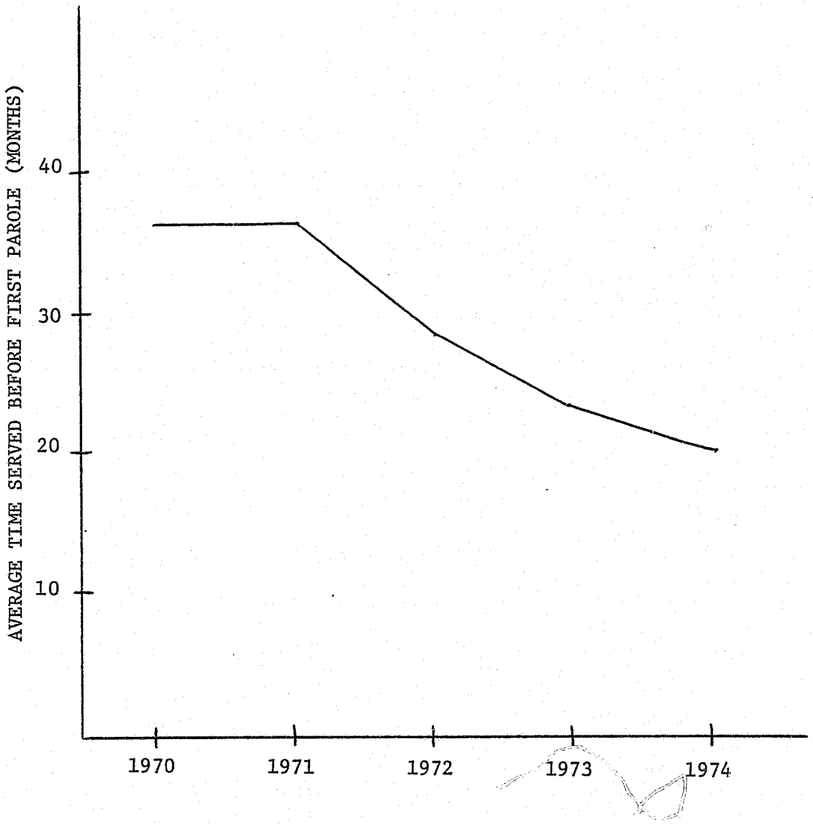

FIGURE 11. AVERAGE TIME SERVED BEFORE FIRST PAROLE AT MINNESOTA STATE PRISON

months. We also note that those inmates with prior convictions or with multiple convictions at commitment are paroled from the state prison nearly as soon as those without these aggravating factors in their criminal history. Not surprisingly, the average time served for various crimes is roughly proportional to the weights assigned to those crimes on the seriousness scale discussed previously.

The effect of these policies in recent years has very likely been to add to the crime rate and lessen the system's deterrence ability, although we are less sure about the deterrent effect. The shorter prison time served may also have encouraged additional defendants to negotiate guilty pleas; however, we do not know how much information criminal defendants and their attorneys have about time served, nor do we know how it enters into a plea negotiation.

The change in prison population over the last several years, and even more so over the last several decades, has had side effects. First, the nature of the population has changed. The inmates are now more likely to be very serious offenders, whose lives are marked by persistent criminal behavior; they are less representative of criminals in general. This has in turn increased the reluctance of judges to commit less serious offenders to prison, thereby further altering the population. Unfortunately, the most serious and persistent criminals are probably the least suitable candidates for the

rehabilitative programs available in prison (or elsewhere). Furthermore, they are more likely to be recidivists who failed in earlier rehabilitative programs. Meanwhile, the less serious criminal who might have been amenable to an institutional training program is usually released on probation without any intensive effort at rehabilitation. Thus, a better investment of the large sum of money now spent for institutional programs might be expanded programs for those offenders now receiving probation. Although we do not have any substantial evidence that rehabilitation programs work in lowering recidivism, we should also keep in mind that the change in prison population has increasingly worked against their likelihood of success.

Under current policy both judges and correctional authorities consider the seriousness of a crime in deciding on the type or length of sentence. The judge decides between probation or confinement for the convicted offender; the parole board determines the time to be served by those who are confined. This double judgment based on the seriousness of the crime has the unintended effect of broadening the range between the most and least severe punishments for crimes. Research indicates that judges and correctional authorities use a similar scale of seriousness in making decisions; this scale is comparable to the seriousness index we used before. But when this scale is applied twice, it increases the seriousness

range. This means that some criminals are punished too severely or some too leniently and that the overall range of punishment is greater than either judges or correctional authorities would have intended.

As a final comment on trends in correctional policy, we would like to point out some research problems. It is very difficult to determine what relation may exist between crime rates and punishment, or sentence length. Studies on this question have usually compared crime rates to length of sentence and the likelihood of going to prison, showing how these figures vary from one state to another. Several researchers find a negative correlation between crime rate and sentence length or probability of confinement.[21] That is, states where crime rates are higher tend to have less punishment for convicted criminals. This is usually interpreted to mean that less punishment causes more crime, or fails to deter it. However, another interpretation is also possible. As the crime rate has increased in various states, the heavy demands on the courts and prisons have led them to reduce the rates of confinement and shorten average sentences in order to make room for more people. We see this to some degree in Minnesota. Therefore, it may also be that high crime rates cause lower sentences or less punishment, rather than the reverse. There may also be a feedback effect, with high crime rates causing less punishment, which in turn lessens the deterrence to crime and further increases the crime rate.

[21] See, for example, William C. Bailey, et. al., op. cit.

To prove which of these alternative explanations is correct, however, will require a more extensive and complex research program than any yet undertaken on this subject. Nonetheless, for all our difficulty in proving or disproving the value of deterrence, it may be potentially the most effective factor of the criminal justice system in reducing crime. If there is no deterrent effect, the system, at its present size, will never have any substantial impact on the crime rate.

Recidivism—A Second Look

Although we tend to think of recidivism as a measure of the success or failure of corrections programs, it actually involves a complex interaction of the criminal with all sectors of the system. Consider again the rate of repeat felony convictions among parolees from the state prison; this is fairly typical of recidivism in general. Within two years of release 28% of former inmates will have been reconvicted of new felonies. And for some types of parolees with long prior records, we can predict reconviction rates as high as 55%. This high rate of convictions is remarkable when we compare it to the very low rate at which criminals as a whole are convicted. As we saw in comparing the crime rate to the number of convictions (figure 1), the chance of an adult being caught and convicted for a crime he committed is small, perhaps only a few percent. (If we subtract the convictions of recidivists from the totals, we see that

the chance of a first offender being caught and committed is even smaller than our system flowchart indicates.) How is it then that the system is so much more successful at finding and prosecuting crime among recidivists and ex-convicts than among other criminals, even when they are all a part of the same general population?

Several explanations seem possible for the high conviction rate among repeat criminals. It may be that they commit so many more crimes than other criminals that they are much more likely to be caught. We have no evidence that would support this explanation; although it may be true for some criminals, it seems unlikely in general. A better explanation seems to be that these repeat criminals become well known to the police. They will be known to police officers personally, as well as through their records, which include criminal patterns, fingerprints, photographs, and so forth. This information will be particularly useful when criminals tend to repeat crimes in a similar manner and in the same geographic area. (Our discussions with persons long-experienced in law enforcement confirm that the similar nature or location of crimes by repeat offenders often leads to their arrest.) In a sense, one might say that these recidivists are easily caught because they are not very skillful at being criminals.

Another factor that might relate to the easy capture of certain criminals is the percentage of violent crimes involving non-strangers. The LEAA victimization survey

of Minneapolis shows that 22% of the victims of personal crimes know the identity of their assailants. It may be that behavior patterns of repeat criminals frequently involve them in crimes against persons familiar to them. In any case, it is clear that many criminals commit serious crimes without much thought as to their likely capture; that is, they are not deterred by the prospect of arrest or confinement, which would certainly be a high probability among crimes against non-strangers. Further research on this type of crime might give us valuable insight into criminal behavior and deterrence, especially if repeat criminals are often involved.

The high arrest and conviction rate of ex-convicts, and recidivists in general, shows the criminal justice system working as its most efficient level, except in the area of rehabilitation. The methods that are successful in the apprehension and conviction of repeat criminals might be studied to find out just which factors are most crucial; this is a subject that deserves more research than it has seen in the past. If, as we believe, good records and information about past offenders are key factors, then it may be possible to further improve current police methods in this area. For example, computerized record-keeping over regional or state units and computer-assisted searching of records, with special techniques for finding crime patterns, might be very cost-effective methods of improving police capability.

One of the main drawbacks to the success of such methods (in addition to their obvious cost and complexity) is that juvenile records could not, under current law, be merged with adult records. Although good arguments are made for protecting juvenile records, we also know that most adult criminals had prior juvenile records. Perhaps a reasonable compromise might be found that would insure record privacy - whether for juveniles or adults—while still making the information available for police and court investigations. Since our previous statistical analysis of crime data by age of arrest did not show any qualitative difference between juvenile and adult crime, nor between the effects of the juvenile justice system and the adult, we find little reason for treating these two groups so differently in record-keeping.

Summary

Although only a small percentage of Minnesota's criminals are confined in the state prisons, we cannot dismiss the effectiveness of the prisons solely on this basis. Any idea of doing away with prisons is completely unrealistic, despite the relatively slight increase in crime that would directly result from those prison inmates being released. On the other hand, we cannot justify prison or probation services on their rehabilitation programs, which are largely unsuccessful. So the problem is that we do not have a good way to measure the true impact of the prisons on crime and the rest of the system.

And without such a measure we cannot evaluate the spending of public funds on corrections services in comparison with other criminal justice agencies. While we can certainly support locking up dangerous criminals, we cannot determine how many criminals should be confined; in any case, the supply of criminals greatly exceeds the capacity of the prisons. The best we can say, at least until we know more about deterrence, is that prisons are an effective but very expensive method of reducing crime. We also know that corrections policy has a substantial effect on other areas of the system. The likelihood and severity of a prison sentence is a major factor in plea bargaining, which in turn is indispensible to the judicial process. (Whether we want to have a judicial system where corrections policy helps decide the guilt or innocence of a defendant is another topic, involving fundamental ethical questions that we do not address here.)

Since it will be difficult to make a case for spending the large sums of money that would be needed to make any substantial increase in prison capacity, the range of policy alternatives is very limited. Still, within this range of options, we have some capacity to experiment with alternative sentencing policies and rehabilitation programs.

VI. Conclusion

In this analysis of Minnesota's criminal justice system we have tried to make clear what we know about the system as well as what we do not know about it. Necessarily, we have had to simplify our conception of the system in order to focus on what seemed the most important features. In particular, we have looked at the nature, distribution, and variation of crime in Minnesota and how this affects the system, as well as how the various parts of the system affect one another. Despite the lack of coordination between the police, courts, and corrections agencies, these subsystems cannot be studied independently of one another. Nor can we evaluate the benefits of public expenditure in any one sector without trying to see what the net effect of that expenditure is on the system as a whole and in comparison to alternative uses for the same funds. We have also found that many important questions, such as the stability of crime data and the effectiveness of the courts, can only be studied at the state level, by comparative statistical analysis of data from cities, counties, and district courts throughout the state.

A substantial amount of data on crime in Minnesota is now available for analysis. Much less data is available on the courts and corrections, and this deficiency is a principle obstacle to resolving many of the questions posed in our analysis. Just as these subsystems are interrelated, a lack of data in one sector will impair

the usefulness of data about another. As the state's computerized information system develops in the next few years, the potential for doing good research and evaluation will vastly improve. Indeed there would be little point to collecting this enormous quantity of data without a commitment to using the data. But to make good use of state and local information systems will require a much greater investment in research and analysis than is now the case. And research and evaluation will have to become an integral part of planning and budgeting.

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