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COMPUTER-INDUCED IMPROVEMENTS IN THE ADMINISTRATION OF JUSTICE[†]

by WILLIAM A. HAMILTON*

I. INTRODUCTION

A decade-long, nationwide program of computerization of public prosecution agencies and courts in the United States has provided evidence that automation can prompt major improvements in the administration of justice. These innovations are of two types: prospective innovations preceding the implementation of an automated system and retrospective innovations based on analyses of data from the automated system.

The computer's relentless demand for detailed, logical explanations of workflows and decision criteria exposes ambiguities, contradictions, omissions and redundancies in pre-automation policies and practices. Courts and prosecutors' offices typically react to these insights by designing better forms, developing detailed manuals on case processing policies and procedures, conducting training programs for professional and support staffs on the knowledge and skills required for case processing, and making changes in the organizational structure and physical layout.

Aggregate case flow data from the automated system provide, through quantification, a sense of the relative importance of myriad problems affecting the processing of cases. Very frequently, the aggregation of data from thousands or tens of thousands of cases places a new urgency on some seemingly mundane function, such as witness notification and evidence collection by the police, while casting doubt on some other matters that traditionally receive far more interest, such as the abolition of plea bargaining, the use of local residency as a favorable factor in the granting of personal recognizance bonds, and the elimination of the exclusionary rule. Finally,

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the availability of aggregate data in comparable format from a large number of jurisdictions enables public officials to begin asking themselves what is normal and what is abnormal about their justice systems, and how they might emulate the successful policies and practices of other communities.

II. THE CONCEPT AND HISTORY OF THE *PROMIS* JUSTICE AUTOMATION PROGRAM

During the past ten years, the United States government has financed the continuing development, nationwide transfer, and creative use of a computer-based case tracking system known as *PROMIS*. *PROMIS* acquired its name as an acronym for *Prosecutor's Management Information System*. When the first generation of the system began daily operation in Washington, D.C., on January 1, 1971, *PROMIS* had no broader purpose than to support a single public prosecution office in keeping track of and managing a high-volume case load of street crimes.

By the end of the decade, *PROMIS* had evolved through two succeeding generations of software and outgrown the original acronym. Although it was still capable of serving as a management information system for prosecutors, *PROMIS* had evolved into a more generic tracking and management system for justice agencies, serving courts at both the trial and appellate levels, regulatory and administrative law agencies, government legal offices that bring and defend civil suits, jails, police departments and probation authorities.

At the beginning of the decade, *PROMIS* was an entirely batch system; it was written in a nonuniversal language; it could operate only on a large mainframe and only on the equipment of a single manufacturer; and custom programming was required to add any statistical reports, listings or other hard copy or to alter the database.

By the end of the decade, *PROMIS* had become an on-line, real-time system with supplemental batch reporting capabilities; it was written in a subset of ANSI Cobol and operating on the equipment of more than ten manufacturers and on mini-computers as well as mainframes; it had acquired a Management Report Package for making ad hoc statistical inquiries of the database and a Generalized Inquiry Package for producing ad hoc listings of individual case-level details from the database.

Of special importance, *PROMIS* had acquired an interactive customizing program, known as the Tailoring Program, which allows users to change the database, the input and output screens, the on-

line indexes, the hard-copy reports and the security controls by keying in English-language answers to English-language questions.

The combination of the three special facilities of PROMIS, the Tailoring Program, the Management Report Package, and the Generalized Inquiry Package, means that just as automation induces improvements in the administration of justice, justice innovations can induce changes in the PROMIS technology. For example, when the PROMIS data analyses prompt a prosecutor's office to establish a special career criminal prosecution unit, the office can retailer its database to track the operations of the new unit and produce special statistical reports and listings on the work of the unit. All of this can be done without the services of scarce, skilled computer programmers.

An important catalyst for both the evolution of the PROMIS technology and its role in inducing improvements in the administration of justice has been the PROMIS Users Group. Comprising legal and technical representatives of all current and prospective users of the PROMIS technology, the PROMIS Users Group meets twice yearly for two days in a city where PROMIS is in operation. During these meetings, public prosecutors, judges and court administrators discuss PROMIS-based statistical comparisons of their offices and courts and attempt to discover why one jurisdiction appears to do better or worse than another in regard to various measures. PROMIS users also use these conferences to report on innovative uses of the technology and PROMIS-based improvements in the administration of justice in their respective jurisdictions. Finally, these forums provide a way for users to communicate their frustrations and problems with the PROMIS technology and for the developers of this technology to plan improvements or enhancements.

The final aspect of the growth and evolution of the PROMIS technology that bears mentioning is INSLAW, the Institute for Law and Social Research. The United States government has provided contracts and grants to INSLAW during the past decade for the purpose of developing the PROMIS technology, assisting justice agencies at the state and local level in understanding, acquiring and using the technology, and in conducting policy-oriented statistical analyses of the PROMIS data. On behalf of the U.S. government, INSLAW has also administered the PROMIS Users Group and published a regular newsletter for the users.

III. IMPROVEMENTS IN THE ADMINISTRATION OF JUSTICE INDUCED BY THE PLANS TO INSTALL *PROMIS*

When the first generation of PROMIS was developed a decade

ago for the public prosecution agency in the nation's capital, the process of defining requirements and designing the system prompted a number of improvements in the office prior to the actual implementation of the automated system. These improvements should be regarded as illustrative of the kinds of reforms likely to result from subjecting an office process to the painstakingly rigorous analysis that an automation project requires.

A system such as PROMIS presupposes a disciplined procedure for compiling standardized data about new cases, defendants, witnesses and victims. The PROMIS-induced realization of this fact highlighted the inadequacies of the then-current practices. The "Case File" then in use was a single $8\frac{1}{2} \times 11$ sheet of paper, which assistant public prosecutors, following court appearances, routinely folded and stored in pockets inside their suit coats. Not infrequently, these primary prosecutive case records were forever lost when suits were sent to the cleaners. The computer-induced reform spawned by the analysis was the development of an oversize case folder that could not be conveniently folded into a suitcoat pocket and the establishment of improved procedures for the centralized filing and retrieval of such folders.¹

A second example concerns the standard police prosecution report, which is typically the first document to be stored in the prosecutor's case file. The PROMIS pre-implementation analysis uncovered the fact that each police department serving the prosecutor's office used its own unique form. Each agency's form provided for the capturing of different data elements, and no agency's form was designed to encourage or mandate the recording of certain data essential to prosecutive decision-making. The computer-induced improvement was the design of a common form for use by all police agencies servicing the prosecutor's office, the inclusion of captioned blocks for recording data vital to prosecutors, such as the names, addresses and telephone numbers of witnesses, and the adoption of a common procedure for all police agencies to follow in fingerprinting and booking arrested persons.²

Another example concerns the intake and screening process. It became apparent that enormous discretion was vested in the attorneys who staffed the intake and screening function and that these attorneys were among the least experienced in the office. The computer-induced improvements included the design of a special work-

1. See INSLAW, STANDARDIZED CASE JACKET, PROMIS Briefing Paper No. 16 (1975).

2. See INSLAW, POLICE PROSECUTION REPORT, PROMIS Briefing Paper, No. 12 (1975).

sheet to force relatively inexperienced attorneys to ask the proper questions in arriving at their decisions, the institution of a new practice of having a very experienced trial lawyer review these checklists and accompanying documents before certifying the decision to the court, and the gradual upgrading of the experience level of the staff performing this function.³

The effort to describe the decision process in a level of detail sufficient for automation revealed the need for attorneys to record their reasons for various discretionary decisions, such as declining to prosecute an arrest, requesting a postponement, negotiating a settlement of a case at a level of charge and penalty below that originally sought in court, and dismissing a case before the court.⁴ In attempting to develop a standardized set of reasons for this automated purpose, it became apparent that there was insufficient policy direction in the office on who could exercise what kinds of discretion, under what circumstances, for what types of crimes, and for what reasons. This resulted in the development of a candid and detailed manual on policies and procedures for charging persons arrested for crimes.⁵ Interestingly, another PROMIS user, the Jefferson County, Colorado, District Attorney's Office recently produced a similar manual but then took the effort to another level of detail by specifying the policies and procedures for making arrests in the first place.⁶

The development of the policy and procedures manual for the intake and screening of cases in turn highlighted the need for systematic training programs for attorneys, paraprofessionals and administrative support staff on major facets of office policy and procedure and on the knowledge and skills required in the performance of their functions. The result was a survey of practicing prosecutors, their supervisors, and police, court, defense and correctional officials with whom they interact to define training needs, and the development of detailed curricula and materials for various classes of employees.⁷

The process of planning extensions of PROMIS to support the scheduling of civil and criminal cases also led to improvements in

3. See INSLAW, CRIME ANALYSIS WORKSHEET, PROMIS Briefing Paper No. 13 (1975).

4. See INSLAW, REASONS FOR DISCRETIONARY AND OTHER ACTIONS, PROMIS Briefing Paper No. 8 (1975).

5. See INSLAW, UNIFORM CRIME CHARGING MANUAL, PROMIS Briefing Paper No. 11 (1975).

6. See JEFFERSON COUNTY DISTRICT ATTORNEY'S OFFICE, ARREST STANDARDS: IMPLEMENTATION PACKAGE (1980).

7. See INSLAW, COMPREHENSIVE TRAINING, PROMIS Briefing Paper No. 7 (1975).

the administration of justice. These improvements, however, are currently at the level of theory since they have not been actually implemented in any court. As part of the planning process, INSLAW reviewed scheduling practices in trial courts across the United States. One thing that emerged very clearly from the study was the realization that most courts had never articulated a set of rules for such matters as how much to overset the calendar, or what kind of balance to strike between the convenience of witnesses and litigants and the need to avoid wasting scarce judicial time by having judges wait for cases. This survey and analysis led to the development of a new conceptual framework for court scheduling that provided for the court to set objectives, establish administrative rules and then systematically schedule cases according to those rules.⁸ This scheduling process can be constantly monitored by comparison with the rules, and the rules themselves can be evaluated in terms of their reasonableness since the process of scheduling is now known. This framework, not unlike the foundation and frame of a house, is a necessary precursor to automation and even to improvements in a manual system. The systems analysis involved in establishing a framework of scheduling rules involves self-scrutiny by the court that is its own reward. The opportunity to step back and question why we are doing things the way we are frequently leads to solutions that now seem obvious. Postponing trials because, for example, parties are not yet prepared leads to more postponements as the expectation grows that the other party will probably not be ready for trial. A judge then finds his valuable time is spent in calling lists of cases that must be postponed to other lists.

Finally, as part of the routine process of preimplementation planning, INSLAW conducts a PROMIS cost benefit analysis in the jurisdiction. This analysis seeks, in part, to identify current record-keeping and information processing practices that are at least partially displaceable by PROMIS. It is not uncommon to discover multiple redundancies in manual recordkeeping practices within a single office or court. In some instances, these redundancies can be eliminated or reduced even prior to the availability of computer support, causing, through increased efficiency, improvements in the administration of justice.⁹

8. See INSLAW, *GUIDE TO COURT SCHEDULING: A FRAMEWORK FOR CRIMINAL AND CIVIL COURTS* (1976).

9. See INSLAW, *ANALYSIS OF COSTS AND BENEFITS, PROMIS Briefing Paper No. 19* (1975).

IV. IMPROVEMENTS IN THE ADMINISTRATION OF JUSTICE INDUCED BY THE ACTUAL OPERATION OF *PROMIS*

A. HIGH MORTALITY RATE FOR ARRESTS FOR SERIOUS CRIMES

On April 25, 1977, the *Los Angeles Times* carried the following headline in bold letters across the top of its front page: "Most Felony Cases Dropped." The story behind the headline emanated from a national meeting of the PROMIS Users Group in Los Angeles. The chief prosecutors and court administrators from nine jurisdictions throughout the United States had produced, and presented to their colleagues at the meeting, comparable statistical data on the disposition patterns for arrests for serious crimes in their respective communities.¹⁰ Computerization had enabled a much more thorough accounting of these arrests and cases than was ordinarily possible. The bottom line of the accounting process, that half or more of all such arrests are either declined prosecution or aborted at some point in the court process, was as surprising to most prosecution and court officials as it was to the *Los Angeles Times*. Prior to computerization, prosecutors were accustomed to depicting their performance in terms of a conviction rate whose denominator was a subset of arrests for serious crimes that had survived through the preliminary court processes to the point of certification to the court with full trial jurisdiction. This calculus produced a measure of success that was usually a comfortably sounding 80-90%, but it obscured from view the fact that the majority of the serious crime arrests were being dropped at various points in the preliminary court process. Conviction rates calculated on the basis of a denominator that equals all arrests for serious crimes would often fall in a much less comfortable sounding 30-35% range.

The computerized documentation of an extremely high mortality rate for arrests involving serious crimes induced more than newspaper coverage. It has led over the past several years to some significant innovations in the administration of justice.

B. THE VICTIM WITNESS ASSISTANCE PROGRAM

One of the innovations attributable to the documentation of arrest mortality rates is a federally funded victim and witness assistance program whereby local and state prosecution authorities and courts establish special organizational units to improve communications with and services to these client groups. Analyses of the PROMIS data disclosed that the reasons most commonly cited by prosecutors and judges for dropping cases had to do with witnesses

10. See K. BROSI, A CROSS-CITY COMPARISON OF FELONY-CASE PROCESSING (1979).

and victims failing to appear, being uncooperative, or refusing to go forward with the case. The federal government funded a study in the District of Columbia to find out why so many witnesses were being uncooperative and what could be done about it.¹¹

Researchers drew a sample of cooperative and uncooperative victims and witnesses from the PROMIS case files and conducted household interviews with almost one thousand of them. The surprising finding was that many of those who had in effect been labeled as uncooperative had failed to appear for totally different reasons. Many had simply never been notified. Some who had been notified did not understand where they were supposed to go and what they were supposed to do. The fact that the written notifications included verbiage from both an ancient but honorable language, Latin, and from a modern but less than honorable language, bureaucratese, undoubtedly interfered with easy comprehension. Police officers failed to correctly record names, addresses and telephone numbers in large numbers of cases, precluding any effective notification at all. Some witnesses who did both receive and comprehend the notices became lost in the maze of court facilities, and there was no information center to assist them. Others appeared as required at a preliminary court event but did not come again for the trial because no one had adequately explained the process to them. Still other witnesses experienced fear of reprisal and alleged that police officers needlessly added to their worries by asking for their names and addresses within earshot of the suspects.

The victim witness assistance units, established to ameliorate these problems, have provided a focus of responsibility for the ministerial tasks of notifying and communicating with witnesses who are otherwise handled rather thoughtlessly and in a manner convenient to the bureaucracy. These units typically respond to telephone calls from witnesses for case status information, using the PROMIS on-line indexes. They also see to it that valid names, addresses and telephone numbers are recorded in the court files and entered into PROMIS. Finally, they often initiate reminder telephone calls based on special telephone notification lists prepared at standard intervals before trial dates.

In addition to the victim witness units, the local police department responded to the information by preparing a roll call training film to instruct officers in the techniques of interviewing witnesses and documenting their names, addresses and telephone numbers. The American Bar Association held national hearings on the problem of fear of reprisal, citing the PROMIS data as the catalyst.

11. See F. CANNAVALE, JR., WITNESS COOPERATION (W. Falcon, ed. 1976).

C. IMPROVING POLICE ACCOUNTABILITY FOR THE QUALITY OF ARRESTS

A second major area of innovation attributable to the documentation of arrest mortality rates has to do with the performance of the police in collecting evidence for their arrests. Although the innovations in this area are just in the embryonic stage, they have the potential of making one of the most far-reaching contributions to improve justice administration.

The set of reasons cited by prosecutors and judges for dropping cases suggests incomplete or inadequate investigative work by the officers who made the arrest. This set of reasons generally accounts for the second largest portion of the arrest mortality, exceeded only by the witness cooperation set of reasons.

A study of the PROMIS data in Washington, D.C. provided some very interesting clues into the problem of police evidence collection.¹² For example, researchers discovered significant differences among arresting officers in their ability to produce convictable arrests. About 15% of the arresting officers accounted for more than half of the arrests that ended in conviction during the year, while almost a third of the arresting officers accounted for no convictions. The successful officers were more likely to recover physical evidence and to identify multiple witnesses, and these factors significantly enhanced convictability. Using robbery as an example, the police recovered physical evidence in only half the arrests. When they did recover such evidence, the probability of conviction was about 60% higher. Police found more than one witness in only half of the robbery arrests. When they did find two or more witnesses, the probability of conviction increased about 40%.

The analysis was recently replicated on PROMIS databases in Manhattan, Los Angeles, Indianapolis, New Orleans, Salt Lake City and Cobb County, Georgia, with strikingly similar findings.¹³ For these six jurisdictions plus Washington, D.C., 12% of the 10,205 officers who made arrests in 1977-78 accounted for more than half of all the convictions, while 22% produced not a single arrest that ended in conviction. Data from the additional cities were also consistent with the earlier findings on the issues of physical evidence and multiple witnesses.

The replication study constructed groups of high conviction rate and low conviction rate officers in each jurisdiction based on whether the number of convictions of each officer during the year

12. See B. FORST, J. LUCIANOVIC & S. COX, *WHAT HAPPENS AFTER ARREST?* (1977).

13. See INSLAW, *ARREST CONVICTABILITY AS A MEASURE OF POLICE PERFORMANCE* (1980).

significantly exceeded or fell short of what would have been expected given the number of arrests, the seriousness of the crimes, the average convictability for each type of arrest, and the officer's assignment.

Researchers also interviewed officers from the high conviction rate and low conviction rate groupings in both Manhattan and Washington. The high conviction rate officers indicated more strongly that they work persistently at locating and working with witnesses, that they emphasize follow-up investigation, and that they use a direct, factual line in questioning suspects. Some of the high conviction rate officers reported particular success in inducing reluctant witnesses to cooperate by finding other witnesses in the case to provide support and instill confidence.

These differences have obvious implications for in-service training. A couple of similarities between the two types of officers also emerged, and these similarities have equally provocative implications for future improvements in the administration of justice. One similarity is that neither group knew of any formal mechanism for routinely discovering what happened to their arrests in court. The other shared characteristic is that differences in arrest convictability were not correlated with differences in official recognition within the police departments, including commendations and awards for performance. Moreover, police officers frequently misperceived the criteria by which their supervisors evaluated officers' performance.

These findings indicate the need for a program to improve arrest convictability through a combination of sharply focused in-service training, routine automated notification to officers of final dispositions and the reasons therefor, and the incorporation and communication of measures of police contributions to convictability in the performance evaluations of police officers and managers.

The Manhattan District Attorney's Office and the Jefferson County, Colorado, District Attorney's Office have taken steps toward a corrective program by producing automated notifications on final dispositions and by developing a sharply focused police in-service training program, respectively. The remaining problem is to find a way to link police promotions, commendations, and awards to the *quality* of the arrests.

D. THE CAREER CRIMINAL PROSECUTION PROGRAM

Public prosecution officials in the urban centers of the United States have more business, in the form of arrests made by the police, than they have resources to handle the work properly. This

fact, coupled with the evidence of high arrest mortality, suggests the need for prosecution managers to establish priorities.

One method of establishing priorities would be to assign resources to the cases brought in by the high conviction rate officers. The problem with such a program is that there is no guarantee that the cases available from the high conviction rate officers on any particular day are the most deserving of prosecution relative to all other cases based on criteria such as the relative seriousness of the offenses and the relative seriousness of the prior criminal record of the defendants. Prosecutive strategy would be held hostage to the happenstance of who made the arrests.

Researchers studying the PROMIS data in Washington, D.C., concluded that prosecution priorities were in fact driven primarily by the condition of the case when it arrived from the police.¹⁴ The probability of conviction at the inception of the case, based on such measures as the recovery of physical evidence and the number of witnesses, was ten times more powerful a factor in explaining prosecutive priorities than the second most powerful factor, the seriousness of the crime. Researchers found no evidence that the seriousness of the offender, based on various measures of his prior criminal history, had any effect on prosecutive priorities.

The importance of attempting to base prosecutive priorities more systematically on the seriousness of the defendant became apparent based on another study of PROMIS data.¹⁵ That study found that a small proportion (7%) of the persons arrested for serious offenses during a five-year period in the District of Columbia accounted for a very large proportion (24%) of all the serious arrests.

Based on these data, the U.S. government established the Career Criminal Prosecution Program to give state and local prosecutors and courts extra resources for the investigation, preparation and trial of cases involving the most active recidivists. The premise of the program is that selective application of extra resources can enhance the probability that a highly active offender will be removed from the community through conviction and incarceration, and that even limited-duration isolation of such offenders would have a disproportionate effect on the workload of the courts.

Over one hundred jurisdictions in the United States have established such programs. A survey of more than 70% of all chief prosecutors and directors of such programs in June 1979 found that nine out of ten respondents rated the program as excellent or very

14. See INSLAW, *CURBING THE REPEAT OFFENDER: A STRATEGY FOR PROSECUTORS* (1977).

15. See K. WILLIAMS, *THE SCOPE AND PREDICTION OF RECIDIVISM* (1979).

good.¹⁶ The survey also uncovered a number of areas in which improvements are possible: recruitment of high-quality attorneys; improved case building materials, such as better evidence, witnesses, investigation, police support after arrest, crime lab information; procedures for faster case processing, such as access to criminal records, docketing priority, quick lab reports; and persuading courts to accept the prosecutor's bail and sentencing recommendations.

E. PRETRIAL RELEASE AND MISCONDUCT

Media accounts of heinous new crimes committed by persons released prior to trial periodically inflame public opinion in the major urban court systems of the United States. Several defenses are commonly cited against such public criticism. One defense is the assertion that, either constitutionally or statutorily, judges are constrained to consider only one matter in setting bail: will the defendant return to court? Another defense is that the defendant in question met the specified criteria for release on his own recognition, criteria such as local residency, employment and so forth. A third defense that is commonly offered is that jails are overcrowded and that the public outcry about crime on bail is not matched by a public willingness to tax itself to pay for new or enlarged jails. A final defense is that human behavior is very hard to predict given the present state of knowledge and that society would have to keep an unacceptably large proportion of accused persons in pretrial custody in order to prevent a small subset of such persons from committing crimes on bail.

Researchers analyzing PROMIS data on bail decisions in the District of Columbia provided a rarity in the public debate on bail and crime: factual data about failure to appear, crime on bail and empirically validated bail decision criteria.¹⁷ The factual data have already induced two United States Senators to recommend fundamental reconsiderations of the laws relating to bail.

Researchers found that the problem of crime on bail is a serious one: seventeen percent of the people arrested during the study period had another case pending in the courthouse. In fact, among defendants released prior to trial, rearrest for new crimes was a far more serious problem (occurring about 13% of the time) than willful failure to appear (occurring about 4% of the time). Senator Edward Kennedy, Chairman of the Judiciary Committee, cited these

16. Bartolomeo, *Practitioners' Attitudes Toward The Career Criminal Program*, 71 J. CRIM. L. & CRIMINOLOGY 113 (1980).

17. See J. ROTH & P. WICE, *PRETRIAL RELEASE AND MISCONDUCT IN THE DISTRICT OF COLUMBIA* (1980).

data in a speech to the National Governors Conference on crime control in which he said that the failure of bail laws to equip judges with a fair and constitutional mechanism for handling the more frequent problem of crime on bail compelled judges to "jail offenders because of danger, while adopting the transparent pretext that the offenders pose a risk of flight." Senator Birch Bayh, Chairman of the Senate Judiciary Subcommittee on the Constitution, made a similar speech to a national meeting of the PROMIS Users Group on May 31, 1979, in which he said that "judges who respond to pressures for community protection must often do so by pretending that the defendant is being jailed because of fear of his not showing up in court."

As for the selection criteria, the researchers concluded that local residency, commonly specified as a factor to be weighed in the defendant's favor in bail setting, had little or no statistical importance in regard to either failure to appear or crime on bail. Conversely, the researchers found a number of other factors, not included in recommended bail criteria, that are strongly related to one or both forms of pretrial misconduct. Examples include the use of hard drugs and prosecution under the current case for burglary, larceny, robbery, arson, or property destruction.

The researchers concluded that empirically based bail criteria could also alleviate the conflict between avoiding further overcrowding in jails and reducing pretrial misconduct. For example, approximately 20% of the defendants presently detailed in jail would, if released, pose no serious problem of willful failure to appear, and 40% of those detained would, if released, pose no serious problem of rearrest. Thus, a large part of jail overcrowding can be traced to poorly researched criteria for placing people in jail.

Human behavior is indeed difficult to predict. The nature of the bail decision, however, requires that one human being make his best effort to predict the future behavior of another. The study demonstrated that empirical research can increase, however modestly, the chances of making good predictions.

F. COURT DELAY AND SPEEDY TRIAL MANDATES

The American people react in almost Pavlovian fashion to the mention of the word "court" by thinking of the word "delay." In the criminal courts, this delay is commonly supposed to help guilty persons escape punishment. According to this theory, either witnesses lose their interest in prosecuting after excessive delays or their memories fade to the point that prosecution is no longer feasible. A common remedy enacted by law or imposed by court rule is the

specification of tight deadlines for the processing of the cases in court, with penalties for failure to adhere to the deadlines. Those penalties are often as serious as dismissal of the case and forfeiture of the government's right to reinstitute the prosecution.

Researchers analyzing PROMIS data from the District of Columbia on the subject of delay have concluded that the problem of delay has been misdiagnosed and that the traditional remedies may be ineffectual or even counterproductive.¹⁸ The aforementioned study of witness cooperation raised doubts about the linkage between case mortality and the willingness of witnesses to cooperate. This study finds that convictability does not materially erode as cases languish on the calendar, with the obvious implication that the witness memory problem may not be as serious as commonly supposed. For example, felony cases tried within two months of certification to the trial court had a conviction rate of 83%, while the decline in the trial conviction rate for cases which had to wait on the calendar for more than ten months was only five points—to 78%. Not only did the trial conviction rate remain fairly constant, but also dismissal and plea bargaining rates stayed essentially the same.

Although delay was not materially harming convictability, unnecessary delay is obviously undesirable on many grounds including the defendant's right to a speedy trial, society's right to a prompt and credible enforcement of its laws, and simple economic considerations associated with repeated court appearances and protracted pretrial custody or supervision.

In analyzing the causes of delay, researchers measured the contribution of case seriousness to delay (measured by the statutory maximum penalty associated with the most serious charge), case complexity (measured by such factors as the numbers of co-defendants, the numbers of witnesses, and the numbers of charges), the number of other cases in the queue, and the numbers of prosecutors and judges available to work on the cases. The researchers discovered that none of these factors was as important in explaining delay as differences among judges in their willingness to grant continuances.

Remedies to the problem of court delay that fail to address the problem of continuance policy probably will not alleviate the delay problem. Remedies that are limited to the establishment of strict deadlines may only penalize the public's interest in convicting guilty persons. Unless the specification of time tables is accomplished by other measures to improve productivity, it is clear that the time ta-

18. See J. HAUSNER, & M. SEIDEL, AN ANALYSIS OF CASE PROCESSING TIME IN THE DISTRICT OF COLUMBIA SUPERIOR COURT (1979).

bles would result in a substantial reduction in the volume of convictions.

The new computer-induced conceptual framework for scheduling management, referred to earlier in the paper, discusses the establishment of a consistent continuance policy among judges. The third generation of the PROMIS software includes a module for computer-assisted scheduling. The module provides reports for the regular evaluation of scheduling policies, including continuance policies.

G. SENTENCING

For many Americans, mention of sentencing would probably induce another Pavlovian response. Their initial thoughts in reaction to the subject of sentencing would probably be arbitrariness and leniency. State legislators and the United States Congress have been engaged in a rather wholesale revision of sentencing laws. The revisions tend to address the areas of public concern by narrowing the range of discretion of the judges and the kinds of penalties they can give, by providing in some instances for appeal of sentences to higher courts, and by mandating in some instances a minimum amount of incarceration.

Researchers analyzing PROMIS data from the District of Columbia found statistical evidence in support of the need for reform of some type.¹⁹ After examining about two hundred factors in each case relating to the prior arrest and conviction histories of the defendants, the seriousness of the crimes for which the defendants had been convicted in the instant case, and the presence of certain aggravating or mitigating circumstances in the instant case, researchers were unable to explain four out of every ten sentencing decisions. The study disclosed sharp differences among judges in their willingness to impose incarceration for similarly situated offenders, with one group of judges roughly twice as likely as another to do so. The observable differences in judicial behavior may result from unmeasurable differences in judicial philosophy. The lack of specificity within sentencing statutes regarding objectives such as incapacitation, general deterrence, rehabilitation or "just deserts" punishment, and the absence of criteria for the application of penalties under the various objectives, places sentencing judges in an impossible position. They are asked to do justice, including being consistent and evenhanded, but are given no reasonable set of tools for achieving that objective.

19. See T. DUNGWORTH, *AN EMPIRICAL ASSESSMENT OF SENTENCING PRACTICES IN THE SUPERIOR COURT OF THE DISTRICT OF COLUMBIA* (1979).

One computer-induced improvement recommended in the study is a presentencing report that would provide, based on a statistical analysis of the PROMIS data base, a profile of the distribution of sentences given by all of the judges of the particular court for similarly situated offenders. Such a tool would in theory encourage greater consistency and evenhandedness by achieving the kind of communication among judges that is otherwise infeasible in a large court system.

H. PLEA BARGAINING

A third subject in criminal law that would elicit an almost automatic response from most Americans is plea bargaining. The public concept of plea bargaining is that it is an instrument of leniency whereby prosecutors and judges, for their own bureaucratic convenience, allow guilty persons to escape the full weight of the punishment they deserve. Public prosecutors frequently react to this public perception by announcing plans to abolish or severely curtail plea bargaining.

Researchers analyzing PROMIS data from the District of Columbia found evidence that directly challenges the prevailing opinion on plea bargaining and that should induce a public prosecutor to be cautious about abolishing the practice.²⁰ Studying the four highest volume serious crimes, burglary, larceny, assault and robbery, researchers concluded that defendants who plead guilty, even to lesser included offenses, receive, for the first three of these crime types, essentially the same penalties as they probably would have received if they had insisted on their constitutional right to a trial *and* been convicted at trial of the most serious charge in the case. For these three crime types, the government not only avoids the extra expense of a trial but also avoids the risk of acquittal. Thus, it is very probable that plea bargaining is actually a more effective instrument of crime control for those three offenses than is prosecution through trial. Researchers discovered that robbery plea bargaining routinely results in concessions to the defendant but, given a demonstrably high risk of acquittal for robbery trials, the concessions appeared to be rather modest.

I. THE EXCLUSIONARY RULE

As alluded to in the introductory section of the paper, the computer can not only induce needed improvements in criminal justice, but it can also induce needed caution about whether to seek

20. See W. RHODES, PLEA BARGAINING: WHO GAINS? WHO LOSES? (1978).

changes. The plea bargaining issue, just discussed, is an example of an issue that could benefit from computer-induced caution. Another such issue is the exclusionary rule.

As a deterrent to misconduct by the police, the United States Supreme Court established the exclusionary rule. This rule bars the use in court of any evidence obtained as a result of a violation of the constitutional rights of the defendant. For example, if an officer failed to obtain a court warrant prior to making a search of a premises or if the scope of the officer's search exceeded that permitted by the warrant, the resulting evidence is barred from court.

There has been a vigorous public and scholarly debate over the years about whether the exclusionary rule is too expensive a deterrent to police misconduct. Many police, prosecution and judicial officials have demanded the repeal of this rule on the grounds that it is a major impediment to effective law enforcement. In 1979, staff members of the United States Senate's Judiciary Committee began to assemble data on the problem in anticipation of possible hearings and corrective legislation. A study of PROMIS data in a number of jurisdictions throughout the country revealed that less than 2% of cases involving serious crimes were aborted because of exclusionary rule problems.²¹ (As many as 9% of the drug cases in one city were terminated for such problems, but the overall effect on the serious crime case load of even that office was less than 2%.) The large gap between the PROMIS statistical data and the level of concern about the problem voiced across the country prompted the Senate Judiciary Committee to commission a special study by the U.S. General Accounting Office. The General Accounting Office collected data by hand in a number of federal prosecutors' offices and courts throughout the country, and computed a statistical picture virtually identical to that provided by PROMIS.²²

J. DRUG USE AND CRIME

A large part of the public apprehension about the use of illicit drugs, particularly hard drugs, is based on the supposition that persons of unsavory reputation will commit violent crimes while under the influence of such drugs.

After linking data from the analyses of urine samples for defendants in almost 60,000 cases with the PROMIS data for the District of Columbia, researchers concluded that drug use among

21. See K. BROSI, *supra* note 10.

22. See COMPTROLLER GENERAL OF THE UNITED STATES, U.S. ATTORNEYS DO NOT PROSECUTE MANY SUSPECTED VIOLATORS OF FEDERAL LAWS, U.S. General Accounting Office, GGD-77-86 (Feb. 1978).

offenders is indeed a serious problem but not for the reasons usually supposed.²³ For example, researchers found that 21% of the arrested persons tested positively for one or more of nine drugs—morphine, quinine, methadone, phenmetrazine, methamphetamines, amphetamines, cocaine, barbiturates, or codeine. That one out of five persons arrested for serious offenses in the nation's capital is found to be using one type or another of an illicit substance is not a matter to be taken lightly. There may, in fact, be some type of causal relationship between crime and drug use, although the researchers were unable to test for such a relationship within the available data. Of special significance, however, was the finding that offenders who tested positive for these drugs were actually *less likely* than other offenders to be arrested for violent crimes. The most common offenses for drug users appear to be failing to appear in court, larceny, fraud, and embezzlement.

K. ATTORNEY STAFF UTILIZATION

The computer-induced reexaminations of policy described in this paper have highlighted the need for information on the kinds and amounts of resources needed to carry out various policies. Lawyers in the private sector bill for their time and, consequently, the private sector is more readily able to estimate the resource implications of workloads and case processing strategies. Public sector attorneys are usually salaried government employees who do not prepare billings for their work. As a result, they do not usually maintain time records. This makes resource estimation and productivity analyses a bit more difficult in the public sector. In attempting to address this problem, researchers asked deputy district attorneys and deputy public defenders in Los Angeles County to maintain very detailed time records for a period of approximately ninety days. The study team then merged the attorney time data with the PROMIS data about the cases the attorneys had been working on.²⁴

The researchers computed the average amounts of attorney time required to process different types of cases through different types of disposition such as trial, plea bargain, dismissal, and so forth. With these data, researchers were, for example, able to contrast the resource requirements for conventional methods of processing robberies and burglaries with those associated with such justice improvement programs as the Career Criminal Prosecution

23. See E. WISH, AN ANALYSIS OF DRUGS AND CRIME AMONG ARRESTEES IN THE DISTRICT OF COLUMBIA (1980).

24. See W. RHODES, CASE WEIGHTS FOR THE PROSECUTION AND DEFENSE OF FELONY CASES IN LOS ANGELES COUNTY (1979).

Program. In addition to confirming what was expected and intended, i.e., that the career criminal program attorneys invest much more time in each case than their fellow attorneys, the study found important differences in how that time is spent. These differences may provide clues for the improvement of case processing office-wide. For example, career criminal prosecutors invest time in a case in a much more even pattern from inception to disposition than do their colleagues. Most of their colleagues appear to work on a case only immediately before each court event. One would hypothesize that early investment of time and continuing contact in a case would increase the probability of locating additional witnesses and physical evidence, two factors in improving convictability. The study also found that career criminal prosecutors spent proportionately more time with lay witnesses and victims and proportionately less time with police officers than did their colleagues. Presumably, their colleagues are forced by their much larger case loads to rely more on the police officers than on establishing direct communications with victims and witnesses.

Researchers are currently conducting a similar study in eleven United States Attorneys' Offices, examining resource consumption for civil and collection cases, as well as for criminal cases. Under the current study, the researchers are also developing a way of projecting case loads several years into the future to allow the time data to be of use in the budgetary process.²⁵ Comparison of time utilization across offices obviously will assist in analyses of legal productivity. As an aid to such uses of the data, the study team is constructing a computer-based simulation model whereby policy-makers can test the resource implications of different approaches in the various offices.

L. CROSS-JURISDICTIONAL STATISTICAL COMPARISONS

Preliminary comparisons of case data from three jurisdictions in an on-going project illustrate the value of such analyses.²⁶ These initial analyses focused on final dispositions of cases involving felony charges, relating differences in disposition patterns to differences in other jurisdiction characteristics. Out of respect for the confidentiality of the information, the jurisdictions are referred to as Ayville, Beeville, and Ceeville. All data are for felony cases disposed of in 1979.

25. See W. RHODES & J. HAUSNER, ALLOCATION OF RESOURCES IN U.S. ATTORNEYS' OFFICES (study in progress).

26. See J. BASSLER, MULTIJURISDICTION STATISTICS ON CRIMINAL PROSECUTION AND ADJUDICATION (study in progress).

The jurisdictions are of roughly comparable size, with metropolitan populations of roughly 700,000, 550,000, and 700,000 respectively. Ayville is in the Midwest, Beeville in the South, and Ceeville in the East. The statutory penalties for serious felonies are at about the same level of severity in Ayville and Beeville (e.g., the maximal penalty for burglary in Ayville is five years' imprisonment, while in Beeville it is zero to twelve years); Ceeville's penalties are rather more severe (the maximal penalty for burglary is fifteen years). There are other significant differences among the jurisdictions that appear to be related to differences in case disposition patterns, some of which are mentioned below.

Some of the noticeable differences among case disposition patterns and suggested explanations for those differences are the following:

a) *Nolle prosequi* and dismissal rate: it appears that the larger the fraction of cases accepted for prosecution, the larger the fraction of the accepted cases that are later dismissed by the prosecutor or the court. The relevant figures are:

<u>Jurisdiction</u>	<u>Acceptance Fraction</u>	<u>Nolle prosequi/ Dismissal Rate</u>
Ayville	69%	12%
Beeville	55%	8%
Ceeville	83%	33%

It appears that higher acceptance rates yield greater proportions of weak cases that are dropped at a later stage of processing. Unless some benefit is derived by pursuing such cases beyond screening, offices with high filing rates might conserve resources without noticeably diminishing effectiveness by doing more careful initial screening.

b) The crime rate, as measured by screened felonies per 100,000 population, does not appear to be related either to acceptance rate or to willingness to negotiate pleas to reduced charges (although it should be noted that Beeville has a strictly enforced policy against plea negotiations except under exceptional circumstances):

<u>Jurisdiction</u>	<u>Felonies per 100,000 pop.</u>	<u>Acceptance Rate</u>	<u>Guilty Pleas To Reduced Charges</u>
Ayville	309	69%	7%
Beeville	1,345	55%	4%
Ceeville	1,203	83%	12%

c) The conviction rate and rate of pleas to the top charge appear to be determined jointly by screening thoroughness and the

availability of resources. Ayville and Beeville have high overall conviction and top-charge plea rates, but they appear to achieve them in different ways: Ayville spends little time on the acceptance decision (typically about one hour) and files a high fraction, but has a low average attorney case load; Beeville has a higher average case load, but appears to compensate by spending much more time in screening (typically several hours over as many as 10 days) and accepting a smaller fraction of cases (presumably the stronger ones). Ceeville, on the other hand, has much lower overall conviction and top-charge plea rates, an apparent result of a screening effort and acceptance leniency comparable to Ayville's but not compensated for by low case loads. The relevant data are shown on the following chart:

<u>Jurisdiction</u>	<u>Conviction Rate On Cases Filed</u>	<u>Top-Charge Plea Rate</u>	<u>Acceptance Rate</u>	<u>Cases Per Attorney Per Year</u>
Ayville	79%	58%	69%	55
Beeville	79%	60%	55%	79
Ceeville	56%	36%	83%	93

These tentative findings show some of the possibilities of cross-jurisdictional analyses that use both case-related variables and other jurisdiction attributes. They should be interpreted with caution, however, since many other jurisdiction factors not considered in these analyses may have influenced the patterns of dispositions. The large number of such other factors makes it vitally important to use as many jurisdictions as possible in the analyses, so that the effects of those factors may be accounted for in a statistically satisfactory manner.

V. THE ARRIVAL OF *PROMIS* IN EUROPE

The Dublin, Ireland, Metropolitan Courts have begun the implementation of *PROMIS*. This will be the first use of *PROMIS* in Europe. The Director of Public Prosecution is also planning to use *PROMIS* in Ireland, and there are tentative plans for other uses of the system within the Irish justice system. The Crown Agent's Office in Scotland began installation of *PROMIS* in the Glasgow Public Prosecution Office in early 1981. A number of other countries of Western Europe are evaluating the applicability of *PROMIS* to their justice systems. One evaluation, completed for a state in West Germany, concluded that *PROMIS* is indeed applicable to the German system of justice. The advent of *PROMIS* in Europe will make it possible to consider cross-national comparisons of justice opera-

tions, building upon the comparative analytical techniques now being employed in the United States in cross-jurisdictional studies.