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The Systems Approach to Criminal Justice Administration

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THE SYSTEMS APPROACH TO CRIMINAL JUSTICE ADMINISTRATION

INTRODUCTION

The observation that the criminal courts of this country are seriously backlogged has been so extensively documented that it has become hackneyed. In many of our urban criminal courts assembly-line justice has long been the norm.[1] As the volume of criminal cases continues to grow, these cases are hurried through crowded courts in order to avoid even greater congestion and delay.[2] The pressure to dispose of criminal cases has created situations where the criminal justice process has been debased, where, as one observer has remarked, the "lower criminal courts tend to be operated more like turnstiles than tribunals."[3]

The natural tension that exists throughout the criminal justice process between efficiency (protecting the community from crime) and fairness (protecting the rights of the individual accused of crime)[4] has

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1. *See* THE PRESIDENT'S COMMISSION ON LAW ENFORCEMENT AND ADMINISTRATION OF JUSTICE, THE CHALLENGE OF CRIME IN A FREE SOCIETY 318 (1968) [hereinafter cited as CHALLENGE OF CRIME IN A FREE SOCIETY].

2. The problem of court congestion is a problem of "system" delay. Even though all parties in a case are prepared and eager to proceed, the courts are unable to accommodate them promptly because numerous other controversies are scheduled ahead of them. The kind of delay which lawyers create through their own unreadiness or unwillingness to proceed is discussed below at note 139 *infra* & accompanying text.

3. Freed, *The Nonsystem of Criminal Justice,* in LAW AND ORDER RECONSIDERED, REPORT OF THE TASK FORCE ON LAW AND LAW ENFORCEMENT TO THE NATIONAL COMMISSION ON THE CAUSES AND PREVENTION OF VIOLENCE 263, 266 (J. Campbell, J. Sahid & D. Stang eds. 1970) [hereinafter cited as LAW AND ORDER RECONSIDERED].

4. *See* CHALLENGE OF CRIME IN A FREE SOCIETY at 374. Professor Herbert Packer has provided an excellent discussion of the competing values which underlie criminal justice processes. Professor Packer posits two models of the criminal process: the Crime Control Model and the Due Process Model. The Crime Control Model

> requires that primary attention be paid to the efficiency with which the criminal process operates to screen suspects, determine guilt, and secure appropriate dispositions of persons convicted of crime.
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> . . . The Model that will operate successfully on these presuppositions must be an administrative, almost a managerial, model. . . . The criminal process, in this model, is seen as a screening process in which each successive stage . . . involves a series of routinized operations whose success is gauged primarily by their tendency to pass the case along to a successful conclusion.

H. PACKER, THE LIMITS OF THE CRIMINAL SANCTION 158-60 (1968) [hereinafter cited as LIMITS OF THE CRIMINAL SANCTION].

The Due Process Model focuses on the demand for reliability in criminal adjudications. This model requires that there be established in each case a high degree of probability that factual guilt has been accurately determined. To avoid human error (and

been increased by court decisions requiring the intervention of defense counsel at earlier stages of the adjudicative process.[5] While efforts are being made in one direction to push a growing volume of cases through the courts, many of these decisions require that greater attention and deliberation be accorded each case. In light of such decisions and the increasing backlogs, some have seen a need to make the process more efficient so that the judicial institutions do not simply grind to a halt.[6] Others have observed that, despite judicial mandates, the crush of cases prevents the individual defendant from receiving adequate consideration by the courts:

> The process is depersonalized and dehumanized. It offends against the basic precept that justice should not be rationed. For many people this assembly-line process is their only contact with the criminal law. It is hardly one that conduces to respect, either for the process or for the norms that the process seeks to enforce. The rationale of the criminal sanction demands that a judgment of conviction be both weighty and considered. With assembly-line crimes it is neither.[7]

Despite the general aversion to the administration of justice "with one eye on the clock and the other on the checkbook,"[8] it is the prevailing administrative reality. Justice in the United States is rationed because of limited adjudicative resources and the inefficient utilization of these resources.[9] The rationing of justice has made the application of modern management technology, automated information systems and related computer techniques to criminal justice processes highly attractive.[10] Lured by exotic computer hardware and the prospect of impos-

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thus to assure that the factually innocent are adequately protected) this model would require that all facets of a case be carefully scrutinized. This model would extend the scrutiny of the case "at least as long as there is an allegation of factual error that has not received an adjudicative hearing in a fact-finding context." Professor Packer likens the Due Process Model to "a factory that has to devote a substantial part of its input to quality control. This necessarily cuts down on quantitative output." *Id.* at 164-65.

5. *See, e.g.,* Coleman v. Alabama, 399 U.S. 1 (1970); United States v. Wade, 388 U.S. 218 (1967); Miranda v. Arizona, 384 U.S. 436 (1966); Escobedo v. Illinois, 378 U.S. 478 (1964).

6. CHALLENGE OF CRIME IN A FREE SOCIETY at 375.

7. LIMITS OF THE CRIMINAL SANCTION at 292.

8. THE INSTITUTE FOR DEFENSE ANALYSIS, TASK FORCE REPORT: SCIENCE AND TECHNOLOGY, A REPORT TO THE PRESIDENT'S COMMISSION ON LAW ENFORCEMENT AND ADMINISTRATION OF JUSTICE 37 (1967) [hereinafter cited as TASK FORCE REPORT: SCIENCE AND TECHNOLOGY].

9. *Id.*

10. For discussions of economic approaches to criminal justice administration, suggesting that an important purpose of procedural rules and practices is to achieve efficiency in resource allocation, see Posner, *An Economic Approach to Legal Procedure and Judicial Administration,* 2 J. LEGAL STUDIES 399 (1973); Landes, *The Bail System: An Economic Approach,* 2 J. LEGAL STUDIES 79 (1973); Landes, *An Economic Anal-*

ing order in an area characterized by chaotic mismanagement, criminal justice administrators have widely implemented these management science techniques.

While management science applications to criminal justice administration rely heavily on computers, it is not merely the physical electronic data processing machines that distinguish the management science posture. Rather, this approach can be recognized by an assortment of quantitative methodologies characteristic of what is popularly known as the "systems approach" to management and planning.[11] These methodologies include operations research, systems analysis, mathematical modeling, statistical analysis and computer simulation.[12]

This Comment will address the issue of whether the "systems approach" can be successfully applied to the process of criminal justice administration to solve the problems of congestion, delay and related systemic dysfunctions. The methodologies of this approach, both technological and quantitative, and its biases will be explored. The implications of applying the systems approach, such as the entrusting of the design and management of the criminal justice adjudicative apparatus to a technological elite, will also be evaluated. Finally, an assessment will be made of various management science applications and of the appropriateness of grafting the goal of efficient resource deployment unto criminal justice procedures, especially in light of constitutional due process guarantees.

I. LEGISLATIVE AND JUDICIAL EFFORTS TO COPE WITH COURT CONGESTION

Despite the sixth amendment's mandate,[13] it is becoming increasingly difficult to achieve speedy dispositions of criminal cases.[14] Iron-

ysis of the Courts, 14 J. LAW & ECON. 61 (1971). *See generally* R. POSNER, ECONOMIC ANALYSIS OF LAW (1972). A critique of Posner's work appears at Polinsky, *Economic Analysis as a Potentially Defective Product: A Buyer's Guide to Posner's Economic Analysis of Law,* 87 HARV. L. REV. 1665 (1974).

11. *See, e.g.,* C. CHURCHMAN, THE SYSTEMS APPROACH (1968); Howlett & Hurst, *A Systems Approach to Comprehensive Criminal Justice Planning,* 17 CRIME & DELIN. 345 (1971).

12. This perspective was first suggested to me by Professor L. Thorne McCarty, Faculty of Law and Jurisprudence, State University of New York at Buffalo, in Quantitative Methods in Legal Problem Areas: An Experimental Seminar, in Computers, Society & Law: The Role of Legal Education 121 (J. Leininger & B. Gilchrist eds. 1973, Proceedings of the AFIPS/Stanford Conference June 25-27, 1973).

13. "In all criminal prosecutions, the accused shall enjoy the right to a speedy and public trial . . . ." U.S. CONST. amend. VI.

14. *See* AMERICAN BAR ASSOCIATION PROJECT ON STANDARDS FOR CRIMINAL JUSTICE, STANDARDS RELATING TO THE ADMINISTRATION OF JUSTICE 271 (1974) [herein-

ically, when cases are finally adjudicated, it is often with *too much* speed to assure compliance with due process. The tremendous rise in the number of cases before the courts is primarily responsible for pre-trial delay.[15] This phenomenon of growing judicial caseloads raises two important questions: whether crowded court dockets constitute a valid reason for delaying final adjudication for the accused; or whether, instead, such delay impinges upon a defendant's sixth amendment rights.[16]

Both legislatures and courts have directed their attention to these problems, although with less than satisfactory results. Typical of the legislative response for dealing with the various aspects of pre-trial delay is New York's Criminal Procedure Law, section 30.30.[17] This so-called "ready-rule," closely modeled after the rules generated by the Second Circuit Court of Appeals,[18] provides for dismissal or other sanc-

after cited as ABA SPEEDY TRIAL STANDARDS]. That the "law's delay" is not unique to the mass-production orientation of the judiciary in the 1970's is well-documented. *See generally* W. SHAKESPEARE, HAMLET, PRINCE OF DENMARK, Act. III, scene i (soliloquy of Hamlet) (1603); C. DICKENS, BLEAK HOUSE (1853); J. MICHAEL & M. ADLER, CRIME, LAW AND SOCIAL SCIENCE (1932); H. ZEISEL, H. KALVEN & B. BUCHHOLZ, DELAY IN THE COURT (1959); and, more recently, Zeisel, *Courts for Methuselah,* 23 U. FLA. L. REV. 224 (1971); Taylor, *The Long Wait for a Speedy Trial,* 80 CASE & COM. 3 (1975); N.Y. Times, Jan. 27, 1975, at 1, col. 3.

15. *See* Note, *The Right to a Speedy Trial: Ohio Follows the Trend,* 43 U. CIN. L. REV. 610, 629 (1974); Comment, *Speedy Trials and the Second Circuit Rules Regarding Prompt Disposition of Criminal Cases,* 71 COLUM. L. REV. 1059, 1061 (1971). Other causes for delay include: (1) lack of judicial, prosecutorial, defense and corrections manpower and inadequate funding to provide better facilities; (2) scheduling difficulties due to conflicting commitments of judges, lawyers and corrections officials; (3) defense and prosecution adjournment requests, due to absence of a necessary party or witness or because of lack of preparation; (4) pre-trial procedural devices, judicially established to protect the accused (*e.g.,* hearings on such matters as eyewitness identification (United States v. Wade, 388 U.S. 218 (1967)), competency (Pate v. Robinson, 383 U.S. 375 (1966)) and validity of confessions (Jackson v. Denno, 378 U.S. 368 (1964)); *see* United States *ex rel.* Frizer v. McMann, 437 F.2d 1312, 1314-15 (2d Cir. 1971); Comment, 71 COLUM. L. REV. at 1061-62.

16. In Klopfer v. North Carolina, 386 U.S. 213 (1967), the Supreme Court held the speedy trial provision of the sixth amendment to be applicable to the states.

17. N.Y. CRIM. PRO. LAW § 30.30 (McKinney Supp. 1975).

18. 2D CIR. R., APP. These rules differ most significantly from the ABA standards in their emphasis on *prosecutorial readiness* for trial, rather than on the *timing* of the trial itself. *Compare* 2D CIR. R. 3-4 *with* provisions 2.1-2.2 of ABA SPEEDY TRIAL STANDARDS, *supra* note 14, at 276. The rationale for the second circuit's failure to deal with delay due to court congestion was recognized in a recent commentary on the second circuit rules:

> If the rules were directed at court delays, the effect on both the law enforcement system and on the legislature would probably be much more dramatic and, in the short run, much more devastating on the courts. Much, if not most, of the delay in bringing defendants to trial is the result of the inability of the courts to handle their growing dockets. Hence the effect of the rules, if applied to court delays, would probably be to require release and dismissal of charges in a much greater number of cases than is now necessitated by prosecution delays.

Comment, *supra* note 15, at 1074.

tions only "when the people are not ready for trial" within the statutorily prescribed time periods. This rule requires only that the district attorney advise the court, in timely fashion, that s/he is ready to proceed with the prosecution.[19] The "ready-rule," apparently tolerant of calendar-induced delay, effectively skirts the issue of court congestion as it pertains to speedy trial.[20] In contrast, the recently enacted Speedy Trial Act of 1974[21] directs that the 60 day period (measured from the arraignment date) within which a trial is to be commenced is *not* to be extended "because of general congestion of the court's calendar."[22] However, the sanction—dismissal of the information or indictment[23]—to be imposed for failure to bring the defendant to trial within the specified time limit will not become effective as part of the statutory scheme until July 1, 1979.[24]

The issue has never been squarely decided by the United States Supreme Court. However, in *Barker v. Wingo*,[25] the Court identified the factors to be weighed in the balancing test applicable to resolving a claim of alleged unconstitutional delay.[26] The Court referred to docket congestion as a "more neutral reason," but one to be considered nonetheless "since the ultimate responsibility for such circumstances must rest with the government rather than with the defendant."[27] In his concurring opinion, Justice White was less equivocal: "[U]nreasonable delay in run-of-the-mill criminal cases cannot be justified by simply

19. *See* N.Y. CRIM. PRO. LAW § 30.30 (1) (McKinney Supp. 1975). The problems of distinguishing court-generated delay from prosecutorial delay are demonstrated in the following passage:

> [T]he District Attorney merely states that he has not moved this case for trial because of "heavy calendar congestion"; that he has determined to prosecute "older cases first", in order of indictment numbers; and that he is now "ready for trial". The prosecutor acknowledges that his announced "readiness" for trial actually means that these defendants will not be tried for another six months, and then only after earlier indictments have been disposed of.

People v. Ryan, 72 Misc. 2d 990, 991, 340 N.Y.S.2d 321, 322 (Sup. Ct. 1973).

20. For cases that draw no distinction between prosecutorial delay and court-caused delay, holding either to constitute grounds for dismissal, *see* United States v. Verville, 281 F. Supp. 591 (E.D. Wis. 1968); Hernandez v. State, 40 Ariz. 200, 11 P.2d 356 (1932); *In re* Vacca, 125 Cal. App. 2d 751, 271 P.2d 162 (1954); State *ex rel.* Leon v. Baker, 238 So. 2d 281 (Fla. 1970); State v. Cross, 26 Ohio St. 2d 270, 271 N.E.2d 264 (1971); Tate v. Howard, 110 R.I. 641, 296 A.2d 19 (Sup. Ct. 1972.).

21. 18 U.S.C. §§ 3161-74 (Supp. I. 1975).

22. *Id.* § 3161(h)(8)(C).

23. *Id.* § 3162.

24. *Id.* § 3163(c).

25. 407 U.S. 514 (1972). The Court rejected petitioner Barker's speedy trial claims; the delay of 5 years had occurred neither through inadvertance nor calendar congestion, but for tactical reasons.

26. These factors included: length of delay, reason for the delay, defendant's assertion of his right and prejudice to the defendant. *Id.* at 530.

27. *Id.* at 531.

asserting that the public resources provided by the State's criminal justice system are limited and that each case must await its turn."[28] Should this thinking govern in a future case presenting the issue of lengthy delay induced by court-calendar backlog, law enforcement officials might be faced with the prospect of having to release scores of those incarcerated for lengthy periods while awaiting trial.[29]

Most of the judicial opinions concerned with the constitutional basis for the right to a speedy trial have emphasized the individualistic purposes supporting that right. The Bill of Rights does, after all, speak of the rights and interests of the individual rather than those of the government. Case law has focused on such factors as protection of the accused against excessive incarceration, minimization of personal anxiety over the adjudicatory process and the reduction of other factors that might impair a defendant's ability to prepare an adequate defense (*e.g.*, the tendency of memories of parties and witnesses to fade over time).[30] However, a perceptible attitudinal shift, directly related

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28. *Id.* at 538.

29. *See* Uviller, *Barker v. Wingo: Speedy Trial Gets a Fast Shuffle,* 72 COLUM. L. REV. 1376, 1396-97 (1972).

In its most recent treatment of claims of denial of speedy trial, the New York Court of Appeals refused to find extensive delay, attributable to calendar congestion and lack of court facilities, to be sufficient basis to warrant dismissal of the indictments. *See* People v. Ganci, 27 N.Y.2d 418, 267 N.E.2d 263, 318 N.Y.S.2d 484, *cert. denied,* 402 U.S. 924 (1971); People *ex rel.* Franklin v. Warden, Brooklyn House of Detention, 31 N.Y.2d 498, 294 N.E.2d 199, 341 N.Y.S.2d 604 (1973). However, in his dissenting opinion in *Ganci,* then Chief Judge Fuld strongly urged that congestion is no excuse for delay:

> A delay of 16 months between the defendant's arraignment and trial—for which he was not at all responsible—is, in my view, a denial of his due process rights under the Fourteenth Amendment . . . . [T]he fact that such delay was attributable to congested calendar conditions in Nassau County . . . seems to me beside the point. As far as the defendant is concerned, he suffered the denial of a speedy trial whether the prosecutor or the court was at fault or completely blameless.
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> . . . [I]t is the responsibility of the State . . . to do what is necessary—by furnishing funds, facilities and personnel—to assure the effective operation of the judicial system, and that burden may not be shifted to the defendant.

27 N.Y.2d at 430-31, 267 N.E.2d at 270, 318 N.Y.S.2d at 493-94 (Fuld, J., dissenting).

In *People ex rel. Franklin v. Warden,* the court again denied relief, but it did order that each of the cases before it be granted a trial preference. The Court acknowledged that this was essentially a stop-gap measure: "The ultimate remedy must be provision by the appropriate branches of government of the material and personal resources required to handle a court burden increased and increasing because of higher crime rates, enlarged police activity, and, most of all, greater urbanization of our population." 31 N.Y.2d at 504, 294 N.E.2d at 202, 341 N.Y.S.2d at 608.

30. *See, e.g.,* Barker v. Wingo, 407 U.S. 514 (1971); Smith v. Hooey, 393 U.S. 374 (1969); United States v. Ewell, 383 U.S. 116 (1966). Writing for the Court in *Barker v. Wingo,* Justice Powell noted particularly the disadvantages of lengthy delay to one who is unable to obtain his/her release prior to trial: "The time spent in jail

to heightened concern over rising levels of crime and violence in the United States, is occurring. The emphasis on the extent and form of the protections that society affords *individuals* in the course of determining guilt and imposing punishment is being increasingly counterbalanced by concentrating attention on the ways *society* can protect itself from deviant individuals.[31]

This social interest in the orderly and effective administration of criminal justice and in the preservation of its institutions is being increasingly articulated as the predominant rationale for prompt disposition of criminal matters. For example, it is indicated in the ABA's Standards that speedy trial is considered a priority matter not only because of the defendant's concern but also because of the public interest in seeing that justice is speedily done.[32] The Court of Appeals for the Second Circuit, in promulgating its speedy trial rules, emphasized that "the public interest requires disposition of criminal charges with all reasonable dispatch."[33] The court did not mention the accused's individual interest. And the Supreme Court has indicated that there is a "societal interest in providing a speedy trial which exists separately from, and at times in opposition to, the interest of the accused."[34]

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awaiting trial . . . often means loss of a job; it disrupts family life; and it enforces idleness." Barker v. Wingo, 407 U.S. at 532.

Certain statistical studies have concluded that persons detained in jail prior to final disposition of their cases are more likely to be convicted and, when convicted, more likely to receive harsher treatment (*i.e.*, prison sentences), than are those defendants who obtain pre-trial release. *See* Rankin, *The Effect of Pretrial Detention,* 39 N.Y.U.L. REV. 641 (1964); Wald, *Pretrial Detention and Ultimate Freedom: A Statistical Study,* 39 N.Y.U.L. REV. 631 (1964); Memorandum for Plaintiff, Bellamy v. Judges & Justices, 32 N.Y.2d 886, 300 N.E.2d 157, 346 N.Y.S.2d 812 (1973) (reprinted as *The Unconstitutional Administration of Bail: Bellamy v. The Judges of New York City,* 8 CRIM. L. BULL. 459 (1972)).

31. Among the best recent illustrations of the shift of concern away from protecting the individual to protecting "society" is the trade-off of individual freedom in favor of societal security as found in the Nixon administration's preventive detention scheme. *See* the Nixon administration's "preventive detention" bill, S. 2600, H.R. 12806, 91st Cong., 1st Sess. (1969); the District of Columbia "preventive detention" law. D.C. CODE ANN. §§ 23-1321-32 (Supp. 1970). *Compare* Mitchell, *Bail Reform and the Constitutionality of Pretrial Detention,* 55 VA. L. REV. 1223 (1969) *with* Tribe, *An Ounce of Detention: Preventive Justice in the World of John Mitchell,* 56 VA. L. REV. 371 (1970).

32. ABA SPEEDY TRIAL STANDARDS, *supra* note 14, at 272.

33. 2D CIR. R., APP., Statement of the Circuit Council to Accompany Second Circuit Rules Regarding Prompt Disposition of Criminal Cases.

34. Barker v. Wingo, 407 U.S. 514, 519 (1971). A succinct summary of the "societal interest" in speedy trials is contained in Justice Brennan's concurring opinion in Dickey v. Florida, 398 U.S. 30, 42 (1970):

> The public is concerned with the effective prosecution of criminal cases, both to restrain those guilty of crime and to deter those contemplating it. Just as

The suggestion that a "societal interest" is promoted by speedy disposition of criminal matters rests on at least two assumptions: that prompt disposition of criminal cases fosters and is vital to continued public respect for law enforcement and adjudicatory processes and that, as a consequence, prompt dispositions have a deterrent effect on crime.[35] As expressed by the Second Circuit:

> The general observance of law rests largely upon a respect for the process of law enforcement. When the process is slowed down by re-

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delay may impair the ability of the accused to defend himself, so it may reduce the capacity of the government to prove its case [citation omitted]. Moreover, while awaiting trial, an accused who is at large may become a fugitive from justice or commit other criminal acts. And the greater the lapse of time between commission of an offense and the conviction of the offender, the less the deterrent value of his conviction.

35. *See* "State of the Judiciary—1970" message by Chief Justice Warren Burger in 56 A.B.A.J. 929 (1970); presentation by Richard M. Nixon to the National Conference on the Judiciary, March 11, 1971, reprinted in 57 A.B.A.J. 421 (1971).

Chief Judge David L. Bazelon (United States Court of Appeals for the District of Columbia Circuit) has strongly contested the validity of the view that speedy dispositions serve to deter crime:

> Increasing currency today is being given to the notion that we can reduce crime in the street by speeding up the judicial process. I think there is a grave danger that we have been oversold on the benefits of judicial efficiency. In a great burst of wishful thinking, many of us seem to have decided that cutting down on court backlogs will cut down on crime. The theory seems to be that would-be criminals will in large numbers be deterred from unlawful actions by the threat of swift punishment but not by the threat of remote punishment. But in reality, we know next to nothing about the ways in which deterrence may or may not operate. . . . There is simply no evidence that speeding up the judicial process is likely to measurably reduce the incidence of crime. . . . We are courting disaster . . . if we persuade ourselves that speeding up the criminal process will cure crime.

Bazelon, *New Gods for Old: "Efficient" Courts in a Democratic Society,* 46 N.Y.U.L. REV. 653-54 (1971).

Others have suggested that there may be a direct correlation between violence in America and poor management in courts that adjudicate criminal matters: "Delays resulting from poor court management . . . help to create conditions of disrespect for law and legal institutions, which in turn can increase the chances for violence in our society." Saari, *Court Management and the Administration of Justice,* in LAW AND ORDER RECONSIDERED at 555.

Professor H. Richard Uviller has suggested a somewhat different and more realistic emphasis:

> Our system for the processing of criminal cases cannot fairly be faulted for its failure to reduce the incidence of criminal behavior. But the general dillusionment with the criminal process, from the outside and from within, is a matter for considerable regret. For, *inter alia,* we do count upon this system, awkward as it may be, to gratify our need to believe that our government is capable of playing a creditable part in the drama of justice. The myth of legal competence serves our faith in orderly existence, and to the extent that the criminal process has become a clumsy spectacle, bitterness and cynicism, infecting players as well as public, become as serious a threat to the system as the original causes of its distress.

Uviller, *The Virtuous Prosecutor in Quest of an Ethical Standard: Guidance From the ABA,* 71 MICH. L. REV. 1145, 1167 (1973).

> peated delays in the disposition of charges for which there is no good reason, public confidence is seriously eroded.[36]

The attitudinal shift toward societal interests reinforces community values (crime detection and prevention) over the safeguards granted the accused. It stresses the importance of the proposition that the courts be perceived by the public as operating efficiently. This primary socio-legal institution must at least give the appearance of functioning in an efficient and orderly fashion if citizens are to accord legitimacy to its pronouncements.

The criminal court is the central institution in the law enforcement machinery. It is the agency that is the "most venerable, the most formally organized, and the most elaborately circumscribed by law and tradition . . . the institution around which the rest of the system is in large measure responsible."[37] Dysfunction, in the form of congestion and delay, in this core institution, will inevitably reverberate throughout the entire criminal justice process.

The dismal crime control record of the law enforcement and adjudicative agencies is well documented.[38] This inability of the criminal justice institutions to deal effectively with the "crime problem" has led to close scrutiny of the administrative apparatus for law enforcement and crime control. The extensive study of crime and criminal procedure in America by the President's Commission on Law Enforcement and Administration of Justice has provoked a flood of criticism towards what has popularly come to be called the "Criminal Justice System." Some of the harshest criticism has been directed at the very concept of a "system" of criminal justice administration. The belief that there is a "system" has been categorized as simply a myth:

> A system implies some unity of purpose and organized interrelationship among component parts. In the typical American city and state, and under federal jurisdiction as well, no such relationship exists. There is, instead, a reasonably well-defined criminal process, a continuum through which each accused offender may pass: from the hands of the police, to the jurisdiction of the courts, behind the

36. 2D CIR. R., APP., Statement of the Circuit Council to Accompany Second Circuit Rules Regarding Prompt Disposition of Criminal Cases.

37. CHALLENGE OF CRIME IN A FREE SOCIETY at 311.

38. Well over half of all crimes are never reported to the police. Of those which are reported, fewer than 25% result in arrest. Almost one-half of all arrests result in the dismissal of charges. Of those not dismissed, over 90% are resolved through plea bargaining. The percentage of cases actually exposed to trial is less than 1% of all crimes committed. Of those convicted, sentenced to jails or prisons and eventually released, between 40% and 70% are eventually re-arrested and re-convicted. *Id.* at 89-100.

> walls of a prison, then back onto the street. The inefficiency, fallout, and failure of purpose during this process is notorious.[39]

Responding to a perceived need to rationalize the disjointed "nonsystem of criminal justice" into a coherent, coordinated Criminal Justice System,[40] Congress prescribed that federal funds be allocated to state criminal justice planning agencies to develop "comprehensive statewide plan[s] for the improvement of law enforcement and criminal justice."[41] The era of the *total system approach* to criminal justice planning and administration had arrived. The desired objective would be a synchronized managerial process, into which the reported crimes and apprehended criminal suspects would be fed. These "inputs" would then, ideally, be processed efficiently and expeditiously by the various components of the system—the police, prosecution, courts and corrections. The "output," beyond simply "crimes cleared" or "cases processed," would presumably remain the nebulous "product" of justice, both for the individual and for society.

With the failure of the legislatures and courts to provide solutions for problems generated by growing criminal court backlogs, the administrators of our criminal justice institutions have been forced to act. In their attempts to preserve, and in some instances to salvage, the institutions they oversee they are becoming increasingly reliant on management science techniques for streamlining, economizing and "systemitizing" their agencies' operations. The discussion that follows will focus primarily on two applications of the "systems approach" to

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39. LAW AND ORDER RECONSIDERED, *supra* note 3, at 264. One reason offered for the failure of this non-system is the fact of its unaccountability—except to itself. *See* Wolfgang, *Making the Criminal Justice System Accountable*, 18 CRIME AND DELIN. 15 (1972).

40. *See* TASK FORCE REPORT: SCIENCE AND TECHNOLOGY, *supra* note 8, at 53-67. This report was prepared by the Institute for Defense Analyses under the overall direction of Dr. Alfred Blumstein. Dr. Blumstein's own work is critiqued below at notes 153-91 *infra* & accompanying text. The now familiar chart, "A general view of The Criminal Justice System," which described the criminal justice process schematically in flow-chart fashion, indicating relative volumes of cases disposed of at various points in the criminal justice administrative process, was developed by the Science and Technology Task Force. *Id.* at 58-59. The chart has been incorporated by the standard texts on criminal law and procedure. *See, e.g.*, S. KADISH & M. PAULSEN, CRIMINAL LAW AND ITS PROCESSES 677 (2d ed. 1969); Y. KAMISAR, W. LA FAVE & J. ISRAEL, MODERN CRIMINAL PROCEDURE 16-17 (4th ed. 1974).

41. Omnibus Crime Control and Safe Streets Act of 1968, 42 U.S.C.A. § 3723 (b)(1) (1973). Coordination of various planning efforts was placed under the authority of State Planning Agencies which are responsible to and receive their funding from the Law Enforcement Assistance Administration within the Department of Justice. *Id.* § 3711(a). For an extensive description and critique of LEAA, see *The Law Enforcement Assistance Administration: A Symposium on its Operation and Impact*, 5 COLUM. HUMAN RIGHTS L. REV. 1, 1-214 (1973).

the problems of criminal justice administration and comprehensive planning. First, a management information system as utilized by a prosecutor to structure his staff's decision-making and routine activities will be explored in some detail. The implications, for both those accused of crime and for the courts, of the prosecutor's use of this management science tool will be considered as well. Attention will then be focused briefly on managerial and data-processing techniques that have been implemented in many courts. These efforts to achieve increased speed, increased production and lower costs in the context of judicial administration will be evaluated. Finally, a formal computer model that enables one to simulate various aspects of the criminal justice system will be used as a vehicle to examine the scientific management techniques and technologies utilized by the "systems" practitioners in criminal justice planning and policy formulation. The model, Justice System Interactive Model (JUSSIM), will be described and the implications of decision-makers relying on such a formal model to structure criminal justice policy will be explored.

II. PROSECUTOR'S MANAGEMENT INFORMATION SYSTEM (PROMIS)

The prosecutor is in a critical position of influence within the law enforcement and adjudicatory schema.[42] Exercising the broad discretion traditionally accorded him,[43] the prosecutor decides whether or not to

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42. The prosecutor is recognized as the most influential court official except for the judge. CHALLENGE OF CRIME IN A FREE SOCIETY at 362. Mr. Justice Robert Jackson, while serving as Attorney General, found the prosecutor's influence even more far-reaching:

> The prosecutor has more control over life, liberty, and reputation than any other person in America. His discretion is tremendous. He can have citizens investigated and . . . he can have this done to the tune of public statements and veiled or unveiled intimations. Or the prosecutor may choose a more subtle course and simply have a citizen's friends interviewed. The prosecutor can order arrests, present cases to the grand jury in secret session, and on the basis of his one-sided presentation of the facts, can cause the citizen to be indicted and held for trial.

Jackson, *The Federal Prosecutor,* 24 JUDICATURE 18 (1940).

43. *See, e.g.,* Oyler v. Boles, 368 U.S. 448 (1962); Inmates of Attica Correctional Facility v. Rockefeller, 477 F.2d 375 (2d Cir. 1973); Arnold, *Law Enforcement—An Attempt at Social Dissection,* 42 YALE L.J. 1 (1932). Professor Kenneth Davis has succinctly summarized the "set of universally accepted assumptions" that support the exercise of broad prosecutorial discretion:

> The principal assumptions are that the prosecuting power must of course be discretionary, that statutory provisions as to what enforcement officers "shall" do may be freely violated without disapproval from the public or from other officials, that determinations to prosecute or not to prosecute may be made secretly without any statement of findings or reasons, that such decisions by a top prosecutor of a city or county or state usually need not be reviewable by

charge an individual in police custody with a crime, what charge to file against the individual and what disposition to finally recommend. While prosecutorial discretion has generally been examined in the context of crime prevention and enforcement policy,[44] it can also be considered as an aspect of the prosecutor's *managerial* role in relation to disposition of cases. The nature of the decisions taken and the timing of these decisions enable the prosecutor to play a pivotal role in efforts to stabilize the chaotic conditions of criminal court administration. The prosecutor exercises his/her discretion to carefully monitor those cases allowed to proceed to adjudication. S/he can prevent the courts from becoming unnecessarily clogged with cases that do not merit prosecution and thus ultimately assist in remedying the congested condition of these courts. From this managerial perspective, the prosecutor is to

> preclude random access to [the court's] limited adjudicative resources, and preserve these resources for the timely judgment of the matters to which the public attaches priority. It is in this sense that the *prose-*

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any other administrative authority, and that decisions to prosecute or not to prosecute are not judicially reviewable for abuse of discretion.

K. DAVIS, DISCRETIONARY JUSTICE 188-89 (1969). In recent years a number of judicial opinions and commentaries (in addition to Professor Davis') have challenged this traditional view. The most important recent case is United States v. Falk, 479 F.2d 616 (7th Cir. 1973) (en banc). *Falk* has been discussed in Comment, *Curbing the Prosecutor's Discretion: United States v. Falk,* 9 HARV. CIV. RIGHTS-CIV. LIB. L. REV. 372 (1974); Comment, *The Ramifications of United States v. Falk on Equal Protection from Prosecutorial Discrimination,* 65 J. CRIM. L.C. & P.S. 62 (1974); Note, 72 MICH L. REV. 1113 (1974); Note, 34 OHIO ST. L. J. 942 (1973). *See also* United States v. Steele, 461 F.2d 1148 (9th Cir. 1972); People v. Gray, 254 Cal. App. 2d 256, 63 Cal. Rptr. 211 (1967); People v. Walker, 14 N.Y.2d 901, 200 N.E.2d 779, 252 N.Y.S.2d 96 (1964); People v. Utica Daw's Drug Co., 16 App. Div. 2d 12, 225 N.Y.S.2d 128 (4th Dep't 1962); Abrams, *Internal Policy: Guiding the Exercise of Prosecutorial Discretion,* 19 U.C.L.A.L. REV. 1 (1971); Amsterdam, *The One-Sided Sword: Selective Prosecution in Federal Courts,* 6 RUTGERS-CAMDEN L.J. 1 (1974); Givelber, *The Application of Equal Protection Principles to Selective Enforcement of the Criminal Law,* 1973 U. ILL. L.F. 88; LaFave, *The Prosecutor's Discretion in the United States,* 18 AM. J. COMP. L. 532 (1970); Winston, *On Treating Like Cases Alike,* 62 CALIF. L. REV. 1 (1974); Comment, *Prosecutorial Discretion—A Re-Evaluation of the Prosecutor's Unbridled Discretion and its Potential for Abuse,* 21 DE PAUL L. REV. 485 (1971); Comment, *Prosecutorial Discretion in the Initiation of Criminal Complaints,* 42 S. CAL. L. REV. 519 (1969).

44. *See, e.g.,* F. MILLER, PROSECUTION: THE DECISION TO CHARGE A SUSPECT WITH A CRIME 5-7 (1970) (this study contains an empirical analysis of current practices in prosecutorial discretion at chs. 8-20); THE PRESIDENT'S COMMISSION ON LAW ENFORCEMENT AND ADMINISTRATION OF JUSTICE, TASK FORCE REPORT: THE COURTS 5, 72 (1967) [hereinafter cited as TASK FORCE REPORT: THE COURTS]; Arnold, *Law Enforcement—An Attempt at Social Dissection,* 42 YALE L.J. 1, 18 (1832); Baker, *The Prosecutor—Initiation of Prosecution,* 23 J. CRIM. L. C. & P. S. 770-71 (1933); Kaplan, *The Prosecutorial Discretion—A Comment,* 60 NW. U.L. REV. 174 (1965); commentaries cited at note 43 *supra.*

cutor serves as the guardian, protector, and custodian of the community's scarce resources for adjudication.[45]

Chief Justice Warren Burger is among an apparently growing contingent that has concluded that more money and additional judges will not alone solve the problems of the criminal courts. According to Justice Burger, at least some blame is attributable to "the failure to apply the techniques of modern business to the administration of the purely mechanical operations of the courts."[46]

Management within business and industrial organizations suggests goals, allocates resources, guides actions and evaluates programs on many different levels.[47] The emphasis in business is on the *rational* nature of the manager's activity.[48] The manager's concern is with the total environment of the organization, the total *system*: this "systems approach" to comprehensive planning does not focus on each separate element of the business alone, in isolation, but allows the manager to see the elements as parts of a whole.[49] But, as has been recognized by a leading practitioner of the "systems approach," there is one underlying managerial objective to which all of the previously articulated objectives are clearly subsidiary: the "efficiency of operations," or, more simply, *the objective of reducing costs.*

> Any manager who is alert looks around his system and discerns where unreasonable wastes are occurring; if he's a good manager, he does his best to eliminate these wastes in order to reduce the total costs of operation of the system.
>
> . . . .
>
> Cost means the using up of resources. It is usually measured in terms of dollars, but very often the real costs can be thought of in terms of time or physical resources or men. Every time a dollar is spent, or a man is used to perform a task, or a physical resource is burned up in some way, then there is a lost opportunity for doing

45. Hamilton & Work, *The Prosecutor's Role in the Urban Court System: The Case for Management Consciousness,* 64 J. CRIM. L.C. & P.S. 183 (1973).

46. Burger, *supra* note 35 (emphasis added). The biases of this approach are clearly disclosed in a more recent pronouncement by the Chief Justice: "I would begin . . . by giving priority to methods and machinery, to procedures and techniques, to management and administration of judicial resources even over the much-needed reexamination of substantive legal institutions." NATIONAL ADVISORY COMMISSION ON CRIMINAL JUSTICE STANDARDS AND GOALS, COURTS 171 (1973).

47. *See* A. ETZIONI, MODERN ORGANIZATIONS (1964); L. SAYLES, MANAGERIAL BEHAVIOR: ADMINISTRATION IN COMPLEX ORGANIZATIONS (1964).

48. Saari, *Court Management and the Administration of Justice,* in LAW AND ORDER RECONSIDERED at 556.

49. C. CHURCHMAN, THE SYSTEMS APPROACH 44 (1968); G. STEINER, TOP MANAGEMENT PLANNING 66 (1969).

> other kinds of jobs. . . . [The system manager] is concerned to keep the efficiency of his system at the highest peak so that every dollar spent is spent correctly and contributes to the real objectives of the system.[50]

In his managerial capacity as "custodian of the community's adjudicative resources," the prosecutor can act in a variety of ways to achieve "efficiency of operations" and thereby, *by this measure,* to foster the improved administration of criminal justice. S/he must exercise *active* control over the office's caseload by establishing and applying priorities ("suggesting goals" and "allocating resources") to cases brought to his/her attention.[51] This goal can be accomplished by identifying those cases in which aggressive prosecution is warranted as a matter of enforcement policy and by monitoring those cases to assure that they are neither unintentionally overlooked nor kept from final adjudication by impediments within the judicial process. The prosecutor can keep apprised of the number and reasons for postponements in a case and can coordinate the appearances of all principals in each case. S/he can ensure that cases do not atrophy while awaiting adjudication because of misplaced or lost records.[52] The prosecutor who can handle these factors will be better able to guide the actions of his office in interaction with other criminal justice agencies. In addition, the prosecutor can regularly assess the activities of the office to assure that limited resources are optimally allocated ("evaluates programs" and "reduces costs").[53]

Finally, because the prosecutor occupies "the most favorable position to bring about needed coordination among the various law enforcement and correctional agencies in the community,"[54] s/he can evaluate the overall performance of criminal justice administration by identifying problem areas and systemic dysfunctions and by suggesting remedial procedures ("his concern is the total environmental," "sees the separate elements as parts of the whole").[55] This aspect of the

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50. C. CHURCHMAN, *supra* note 49, at 17.

51. Hamilton & Work, *supra* note 45, at 184.

52. Hamilton, *Modern Management for the Prosecutor,* 7 THE PROSECUTOR, J. DISTRICT ATTORNEY ASS'N 472, 473 (1971).

53. *Id.*

54. TASK FORCE REPORT: THE COURTS, *supra* note 44, at 72.

55. Hamilton, *Modern Management for the Prosecutor, supra* note 52, at 473. *But see* Comment, *Prosecutorial Discretion in the Initiation of Criminal Complaints,* 42 S. CAL. L. REV. 519, 521 (1969), where it is suggested that even assuming the prosecutor to be the law enforcement officer most knowledgeable about criminals' activities, it does not follow that s/he should be entrusted with defining the goals and establishing the social policies that are the foundations of our institutions of criminal justice administration.

prosecutor's managerial role could lead to: (1) conducting research into the incidences of crime, for example, by the status of the accused (*i.e.*, crimes committed by first offenders, by those on bail or probation, by multiple offenders); (2) cataloging and publishing patterns and trends in criminal activity as a public educational aid and as a guide for other governmental agencies concerned with crime detection and prevention; (3) identifying those areas in the criminal courts where congestion and delay are most detrimental to effective judicial administration; and (4) recommending remedies for such delay. The prosecutor's actions can also have a significant impact on police arrest practices, on the numbers of accused diverted to "adjunct" criminal justice programs prior to adjudication, and on the number of offenders referred to the "correctional" institutions.

But in many jurisdictions there are tremendous obstacles to the realization of this managerial potential within the prosecutor's office. Since most urban prosecutors are saddled with burgeoning caseloads and have neither adequate staffs nor resources to meet this exigency, most prosecutorial energies are consumed in simply meeting the daily trial schedule. Little if any time remains "for developing policies within the office or for attempting to coordinate the efforts of other agencies."[56] The enormous prosecutorial caseloads have encouraged an assembly line approach in many urban prosecutors' offices:

> [I]n a large office, one attorney may make the initial decision to file a charge, a second may argue the bail issue, and still others may handle the preliminary hearing, grand jury proceeding, and the trial. At each of these stages, a number of prosecutors may contemporaneously be performing the same function in different cases. These separate decision-makers may not be in direct communication with each other, and their decisions may not be subject to a central internal review.[57]

This scenario of fragmented decision-making, of a lack of coherency in and poor coordination of internal policy, is consistent with a traditional image of the prosecutor as a *reactive* rather than a *managerial* agent. As a former Assistant U.S. Attorney has recognized: "[T]he psychological make-up and role definition of the assistant [U.S. Attorney] were usually such that he would prosecute in the

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Judges, after all, can claim at least an equal knowledge of and expertise in dealing with law enforcement and administration problems.

56. TASK FORCE REPORT: THE COURTS, *supra* note 44, at 72.

57. Abrams, *Internal Policy: Guiding the Exercise of Prosecutorial Discretion*, 19 U.C.L.A.L. REV. 1, 2 (1971).

absence of any reason not to do so."[58] Others have concluded from the available evidence that prosecutorial decision-making is not necessarily "conscious" in the sense that prosecutors exert affirmative control over their workloads.[59] Rather, prosecutors do not tend to

> consciously exercise their discretion in accordance with the value judgments which are legitimately theirs to make, and in light of their expert knowledge . . . . *A likely explanation of many prosecutorial decisions is that they are simply reactive;* a prosecutor makes yes or no decisions with respect to the cases which citizens or the police bring before him, and the basis for making those decisions may not be uniform.[60]

In addition to those handicaps already identified (generally unfavorable working conditions, a lack of clearly stated standards to guide decision-making and a lack of established procedures for arriving at decisions[61]), the President's Commission on Law Enforcement and Administration of Justice has recognized yet another deterrent to the "systematic making of charge decisions": the lack of sufficient information on which to base decisions. Concluding that "more often than not prosecutors exercise their discretion under circumstances and in ways that make unwise decisions all too likely,"[62] the President's Commission urged that more attention be paid to gathering detailed background information about offenders so that the prosecutor may differentiate between dangerous persons and those who are merely marginal offenders. Without such background information on the accused, the prosecutor is unable to establish priorities and concentrate his efforts accordingly. Instead s/he must resort to a best-guess or rule-of-thumb policy in arriving at charging decisions.

To enable prosecutors to re-establish control over workloads, it has been suggested that the computer be utilized within the framework of a comprehensive management information system.[63] In 1969, the office of the United States Attorney for the District of Columbia[64] was among

58. Kaplan, *The Prosecutorial Discretion—A Comment,* 60 NW. U.L. REV. 174, 192-93 (1965).

59. *See* CHALLENGE OF CRIME IN A FREE SOCIETY at 329-32; Abrams, *supra* note 57, at 8-9; Givelber, *The Application of Equal Protection Principles to Selective Enforcement of the Criminal Law,* 1973 U. ILL. L.F. 88, 103.

60. Givelber, *supra* note 59, at 103 (emphasis added).

61. CHALLENGE OF CRIME IN A FREE SOCIETY at 330-31.

62. *Id.* at 330.

63. Work, *A Prosecutor's Guide to Automation,* 7 THE PROSECUTOR, J. DISTRICT ATTORNEY ASS'N 479 (1971).

64. In the District of Columbia, the U.S. Attorney is the public prosecutor for common law as well as federal crimes. Hamilton & Work, *supra* note 45, at 184.

the growing number of urban prosecutors who, faced with the problem of prosecuting thousands of cases, were compelled to resort to a mass-production case-processing strategy.[65] It is understandable that such prosecutors would be receptive to innovative approaches to managing their workload. Aided by a grant from the Law Enforcement Assistance Administration (LEAA), the U.S. Attorney for the District of Columbia, in cooperation with the Office of Crime Analysis of the District of Columbia, designed a computer-based information and processing system capable of tracing defendants through the various agencies of criminal justice. A team consisting of systems analysts, a criminologist and two Assistant U.S. Attorneys developed the system which was implemented by the U.S. Attorney's office in January, 1971.[66]

The project's originators claim that this Prosecutor's Management Information System (dubbed with the acronym "PROMIS"[67]) is the first tool developed specifically for the prosecutor that integrates (1) the demands placed on the prosecutor from an operational perspective with (2) modern statistical and quantitative analytical techniques and (3) the computer's capacity to rapidly sort through and examine vast amounts of data and to then present this data in a useful format to the prosecutor.[68] This data can then be applied to expedite the effective prosecution of a large volume of cases and to facilitate planning and management decisions.

PROMIS was intended by its designers to overcome the handicaps discussed above in order to aid the prosecutor in achieving improvements in several major functional areas. According to PROMIS advocates, the initial benefit is to be realized through the process of thinking through and structuring the design of a management information system. This phase of implementation is to entail a thorough study and analysis of all the procedures, functions and activities of the prose-

65. *Id.*

66. Watts & Work, *Developing an Automated Information System for the Prosecutor,* 9 AM. CRIM. L.Q. 164 (1970). Messrs. Watts and Work were the two Assistant U.S. Attorneys assigned to the project development team. Mr. William Hamilton (see notes 45 & 52 *supra* & note 70 *infra*), currently the president of the Institute for Law and Social Research located in Washington, D.C., was the Project Manager for the design and implementation of this comprehensive management information system.

67. As a critic of the management science approach to criminal justice has noted:

> Flashy code-words dominate the [management science] field—many of them composed of acronyms or abbreviations . . . . [Management Science] models are products themselves which are marketed to law enforcement agencies, courts and other institutions. Their abbreviated code-words emphasize their involvement with computer technology and streamlined problem-solving.

Reich, *Operations Research and Criminal Justice,* 22 J. PUB. L. 357, 371 n.54 (1973).

68. Watts & Work, *supra* note 66, at 168-69.

cutor's office which are to be subjected to computer manipulation. As one advocate of PROMIS applications has written:

> This process will very likely surface some weaknesses in the administrative operation of the office. . . .[T]he payoff in increased understanding of the strengths and weaknesses of the administrative process by itself justifies the exercise of designing a management information system.[69]

The first and primary task of the operational PROMIS system is to receive, sort, classify, file and store large amounts of easily accessible information that has been collected on those taken into police custody. This data base in turn serves as the foundation from which the rest of the PROMIS operations are built. As recognized in the PROMIS explanatory literature: "PROMIS is synonymous with facts—almost 170 of them for every case."[70] The facts programmed into PROMIS can be divided into six major categories of information about:

(1) the accused (*e.g.*, name, sex; race, prior record, history of alcohol or drug use);

(2) the crime (date, time, place and a *numerical rating that reflects the gravity of the offense* in terms of amount and degree of bodily injury, property damage and intimidation);

(3) the arrest;

(4) criminal charges (including reasons for any charge changes made by the prosecutor);

(5) court events (including dates of *all* court appearances and final disposition; names of judges, defense and prosecuting attorneys and the *reasons* for the outcome of each appearance);

(6) witnesses.[71]

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69. Work, *supra* note 63, at 480. This claim is made throughout the management science literature. It is doubtful, however, that an administrator who expends large sums to develop a management information system would find this benefit, alone, to be an adequate return on his investment.

70. INSTITUTE FOR LAW AND SOCIAL RESEARCH, PROMIS BRIEFING SERIES No. 1, MANAGEMENT OVERVIEW OF PROMIS 6-7 (1974) [hereinafter cited as BRIEFING SERIES]. The Series consists of 21 briefing papers that explain the underlying managerial and organizational concepts inherent in PROMIS. These publications are prepared by the Institute for Law and Social Research under a grant from LEAA. LEAA has designated PROMIS an "exemplary project," worthy of national attention and suitable for adoption by other communities. *Id.* at Forward.

71. *Id.* at 7. About 80% of the data programmed into PROMIS is gathered at the intake and screening stage of the criminal process. *Id.* at 8; BRIEFING SERIES No. 2, CASE SCREENING 5 (1974).

It was hoped that prosecutors working in mass-production environments would benefit because, with ready access to these data, they could "achieve technologically the same detailed knowledge of their caseload and operational problems that small-town prosecutors acquire as a matter of course with regard to their relatively light workloads."[72]

Resource allocation has been recognized as the most important aspect of PROMIS. This process entails the assigning of "scarce manpower" in the prosecutor's office to criminal cases based on the seriousness of the cases and their urgency for trial. The U.S. Attorney wanted to identify the more important cases among the thousands flowing through his office to assure that the prosecution would not inadvertently fail to try them. There is a concern that "important" cases, hidden by the sheer volume of the caseload, might be overlooked. This concern has apparently arisen from what is perceived to be the prosecutor's experience with the "habitual, court-wise criminal":

> The environment is ripe for exploitation by the habitual criminal. His recidivism buried in the anonymity of large-scale, assembly-line case processing, he seeks one delay and postponement after another until the government's witnesses are so exasperated and worn out, or the memories of the crime so obscured, that the charges against him are either dropped or dismissed.[73]

The uniform case evaluation and rating capability of PROMIS was developed to combat this alleged phenomenon. Four criteria were established to assess the importance of a case. These include:

(1) seriousness of the crime, based primarily on the extent of personal injury, amount of property loss and intimidation;[74]

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72. *Id.* at 6-7.

73. Hamilton, *supra* note 52, at 472; BRIEFING SERIES No. 1, *supra* note 70, at 2. No statistical data has been presented to substantiate the extent to which judicial administration problems are created or exacerbated by the "habitual, court-wise criminal."

74. The scale incorporated into PROMIS was adopted, with only minor modifications, from one developed by the criminologists Thorsten Sellin & Marvin E. Wolfgang. For background information about this scale see T. SELLIN & M. WOLFGANG, THE MEASUREMENT OF DELINQUENCY 236-91 (1961). Pre-established numerical values or weights are assigned to certain factors associated with the crime. For example, if the victim is hospitalized, a weight of 7 is assigned; but if the victim is killed, a weight of 26 would apply (extent of personal injury). If the evidence indicates that only physical or verbal force was used, the assigned weight is 2; for display of a weapon, a weight of 4 (intimidation). If the dollar value of property loss was less than $10.00, a weight of 1 applies; if over $200.00, the weight is 4. *See* BRIEFING SERIES No. 3, UNIFORM CASE EVALUATION AND RATING 4-7 (1974). These numerical values are then summed in the computer to provide the *crime gravity rating*. Other factors could be added to the scale if judged appropriate.

(2) seriousness of the accused's criminal record, with emphasis on the number and density of prior arrests;[75]

(3) the age of the case, calculated in terms of the number of continuances or postponements;

(4) a subjectively determined factor that reflects the probability of winning the case.[76]

Data relevant to these categories, which have been obtained by the screening prosecutor with the assistance of the arresting officer, is then entered in PROMIS.[77] The computer interprets the data and assigns two ratings to each case, one for the crime and the other for the defendant. The higher the rating, the more important the case. Well in advance of each trial date, the computer automatically provides a "priority calendar" which ranks each case scheduled for that trial date in descending order of importance.[78] These reports enable the prosecutor to assign these "important" cases to a Special Litigation Unit. This Unit provides continuous, concentrated monitoring of all serious cases and of those cases involving repeat offenders, to assure that each case is individually prepared. The conviction rate in the cases handled by the Special Litigation Unit has been reported to be approximately 25% higher than for those cases disposed of in the ordinary process (during 1970) before PROMIS was implemented.[79]

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75. The factors evaluated by PROMIS to assess the gravity of the defendant's criminal history were adopted, again with minor modifications, from a scale originated by Don Gottfredson. *See* Gottfredson & Ballard, *Differences in Parole Decisions Associated with Decision-Makers,* 3 J. RESEARCH IN CRIME & DELIN. 112 (1966). In addition, see D. Gottfredson & R. Beverly, Development and Operational Use of Prediction Methods in Correctional Work (Proceedings of the Social Statistics Section of the American Statistical Association, Washington, D.C., 1962) and D. Gottfredson & J. Bonds, A Manual for Intake Base Expectancy Scoring, April 1, 1961 (Form CDC-BEGIA, California Department of Corrections, Research Division, Sacramento) (*as cited at* Hamilton & Work, *supra* note 45, at 185 n.6). A summing procedure (similar to that followed for the crime gravity rating) is based on pre-established numerical values connoting the relative significance of the answers. Prior arrest record was at first the sole criterion evaluated by PROMIS. But as conviction data is becoming more available, research has been started to determine the appropriate weights. *See* BRIEFING SERIES No. 3, *supra* note 74, at 5, 8-9.

76. Hamilton, *supra* note 52, at 474.

77. *See* BRIEFING SERIES No. 13, CRIME ANALYSIS WORKSHEET; BRIEFING SERIES No. 2, *supra* note 71.

78. BRIEFING SERIES No. 3, *supra* note 74, at 5. The screening prosecutor can still exercise his discretion to place a case at the top of the priority calendar, regardless of its rating, by scoring the "override" box on the Crime Analysis Worksheet. This action might be taken if the accused is a well-known or major violator. *Id.* at 10.

79. BRIEFING SERIES No. 4, SPECIAL LITIGATION (MAJOR VIOLATORS) UNIT 3 (1974); Work, *supra* note 63, at 480.

At present these computer-generated priority rankings are not followed mechanistically by the supervising prosecutor. Rather, they are used as a "crude indicator" of those cases deserving special attention and preparation. The efforts to incorporate conviction data into the criminal history formula,[80] indicate that the PROMIS rating capabilities are being refined to serve as a more reliable guide to decision-making.[81]

Other functional areas addressed by PROMIS include:

1. *Operational processing and management control.* In addition to automating purely clerical tasks (*e.g.,* automatic printouts of subpoenas, notifications to witnesses and police of hearing-date changes),[82] PROMIS computer capabilities can be used by the prosecutor to monitor problems in his own staff's performance: "[P]roblems in staffing and training . . . can be assessed since the name of the assistant prosecutor responsible for each transaction in a case is stored in the system along with the outcome of the transaction and reasons for the outcome."[83]

2. *Research and analysis.* It is claimed that computer soft-ware is being developed to identify trends in criminal activity, assess the effectiveness of prosecution policies and perform studies of special issues.[84] It is predicted that constructing a model simulating the court process will allow for manipulation and exploration of alternative policies.[85]

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80. *See* note 75 *supra.*

81. Telephone interview with William A. Hamilton, President, Institute for Law & Social Research (Washington, D.C.), April 29, 1975.

82. Hamilton, *supra* note 52, at 474.

83. *Id.* at 475. Although beyond the scope of this paper, it would be interesting to examine the impact of PROMIS implementation on the way prosecutors and their assistants perceive their roles (*i.e.,* before and after PROMIS adoption), as well as the impact of PROMIS on job performance. It should be valuable to follow the evolution of the prosecutor's role as "information processing" becomes integrated with his other capacities.

84. *See* BRIEFING SERIES No. 10, RESEARCH USES OF PROMIS DATA (1974). Three preliminary studies have already been completed. These included: (1) a study of police arrest charges which failed to meet criteria established by the prosecutor; (2) an examination of the rearrest probability for persons on various forms of conditional release and the nature of the offense involved; (3) a comparison between cases where complainant and defendants were related and those in which the parties were strangers. *See* Merrill, *Using the PROMIS Tacking System for Criminal Justice Evaluation,* in PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON CRIMINAL JUSTICE INFORMATION AND STATISTICS SYSTEMS 231, 233 (1972). Other studies on issues such as plea bargaining, speedy trial, recidivism and judicial decision-making are contemplated. BRIEFING SERIES No. 10, at 10-12.

85. *See* Hamilton, *supra* note 52, at 475; BRIEFING SERIES No. 10, at 6. *See also* notes 153-91 *infra* & accompanying text, dicussing various simulations and models of the court and criminal justice systems.

3. *Interagency coordination.* PROMIS automatically generates reports on case status and disposition to other criminal justice agencies. A major impediment to effective communication among the criminal justice administration agencies has been the lack of a common classification system.[86] As part of Project TRACE,[87] PROMIS was equipped to track the criminal court workload by three separate approaches:[88]

> (a) by crime: using the *complaint number* assigned by the police department, the prosecutor can follow all court action arising from the crime;
>
> (b) by individual: using the *finger-print-based number* assigned by the police to an individual following arrest, the prosecutor can accumulate criminal history files on offenders and record incidents of recidivism;
>
> (c) by case: the *docket number* assigned by the court to the case pending before it, allows the prosecutor to follow a formal criminal action from arraignment through final disposition and thus account for separate outcomes for each count or charge.

Including these three identifiers appears simple, but it is apparently unique to PROMIS. The numbers provide the prosecutor with an "instant replay" capability so that s/he can track either the criminal incident, the defendant or the court actions in each case. Use of the identifiers also facilitates communication among the various criminal justice agencies.[89]

In February, 1973, the second stage in the development of PROMIS was implemented. PROMIS II is an "on-line," "real-time" version of PROMIS. It allows a user to retrieve case information im-

86. This was pointed out in a 1968 National Bureau of Standards study of criminal justice:

> (1) Each element of the CJS uses its own individual number for record keeping.
> (2) Alphabetical files are sometimes the only means of tying cases together among agencies. As a result, there are search problems with aliases, misspellings, etc. (one defendant's name appeared 124 different ways in the alphabetical files).
> (3) No single dossier is available to tell the whole story of a defendant's passage through the process: different data are filed in different buildings, generated and administered by different agencies.

NATIONAL BUREAU OF STANDARDS, DEPARTMENT OF COMMERCE, A COMPILATION AND USE OF CRIMINAL COURT DATA IN RELATION TO PRE-TRIAL RELEASE OF DEFENDANTS (1968).

87. For a description of Project Trace (Tracking, Retrieval and Analysis of Criminal Events), see Hamilton, *supra* note 52, at 473.

88. BRIEFING SERIES No. 1, *supra* note 70, at 7-8.

89. *Id.* at 8. *See generally* BRIEFING SERIES No. 17, INTERFACE WITH OTHER CJIS (1974).

mediately through terminals located in the prosecutor's office and at each police district station house.[90] Designated pre-formatted questions may be directed to the data base and the answer will be flashed back immediately on a television-like screen. Information that can be retrieved in this manner includes:[91] (1) all data relevant to any case contained in PROMIS; (2) a listing of all cases that have been pending at a certain stage in the proceedings; (3) all cases in which a particular police officer is scheduled to appear; (4) docket number and status of any pending cases in which a defendant is a principal.

In addition, PROMIS and PROMIS II are apparently quite compatible with other currently employed criminal data systems. PROMIS II is an integral aspect of a "real-time metropolitan Washington criminal justice communications network which includes a number of other systems, such as a wanted persons file and a stolen vehicle tag file, and which is directly linked to the National Crime Information Center."[92] There has been a flexibility built into PROMIS which would enable it to "dovetail" or "interface" with a national criminal justice information network that has been proposed by LEAA.[93] One facet of this Comprehensive Data Systems would involve the development of Computerized Criminal Histories (CCH), storing data on the identity, location, characteristics and description of known criminal offenders. Computerized Criminal Histories would not only be stored centrally, they would also be nationally indexed by the FBI's NCIC. They would be instantly retrievable by any qualified criminal justice agency in any state.[94] PROMIS can supply most information needed from the local level by the CCH systems.[95]

III. Critique of PROMIS

To the extent that PROMIS fosters the effective administration of justice by removing (or at least alleviating) management and operational obstacles in both the prosecutor's office and the criminal

90. Briefing Series No. 1, *supra* note 70, at 13; Hamilton & Work, *supra* note 45, at 188.

91. *Id.*

92. Hamilton & Work, *supra* note 45, at 188. The National Crime Information Center (NCIC) is operated by the FBI. *See generally* A. Westin & M. Baker, Databanks in a Free Society 47-64 (1972). *But see* A. Miller, The Assault on Privacy 162-63 (1971).

93. Briefing Series No. 17, *supra* note 89, at 2.

94. National Advisory Commission on Criminal Justice Standards and Goals, Criminal Justice System 33-35 (1973).

95. Briefing Series No. 17, *supra* note 89, at 2. Other data systems with which PROMIS can be linked are discussed in *id.* at 2-3.

courts, criticism of it would appear to be unwarranted. However, PROMIS does pose certain problems for both the individual facing prosecution and for the court which, under the separation of powers doctrine, must be vigilant in maintaining its independence from executive agencies such as the prosecutor's office.

The PROMIS economic model presents the prosecutor's discretionary acts as those of a "rational maximizer," comparing "expected returns and expected costs with alternative uses of its resources."[96] Under this formulation the prosecutor uses PROMIS' case-rating capabilities purely as a tool to identify the most serious cases and to assign resources to minimize the number of overlooked or ill-prepared cases. In this way, the number of successful prosecutions would be maximized. However, it is precisely at this core of PROMIS that the economic and managerial goal of maximum efficiency in the allocation of scarce resources ("optimization"),[97] and methodologies relied on to achieve the goal, may conflict with equal protection and due process requirements. Reliance on PROMIS' "priority listing system" to isolate and assign certain categories of cases to a Special Litigation Unit for intensive preparation may significantly enhance the prosecutor's efforts to control crime. But at the same time, this listing capability significantly increases the potential for discriminatory treatment of certain individuals, such as those with records of multiple arrests, those with a history of drug use and members of socially or politically disfavored groups. This clash of values calls for careful scrutiny of how the prosecutor uses PROMIS to guide his exercise of discretion, so that possible abuses can be anticipated and avoided through the implementation of appropriate safeguards.

It has always been difficult to draw the line between "selective enforcement" and "discriminatory enforcement" of the law. The practice of selective enforcement is generally recognized as legitimate in light of the state's limited resources and the prosecutor's duty to cope with the problem of public order and safety.[98] Total enforcement of

96. R. POSNER, ECONOMIC ANALYSIS OF LAW, *supra* note 10, at 379.
97. *Id.* at 4.
98. *See* note 43 *supra.* The ABA Standards state:

> The prosecutor is not obligated to present all charges which the evidence might support. The prosecutor may in some circumstances and for good cause consistent with the public interest decline to prosecute, notwithstanding that evidence may exist which would support a conviction.

ABA STANDARDS, THE PROSECUTION FUNCTION § 3.9 (1971).
The prosecutor may be guided by the following:
(1) his reasonable doubt that the accused is in fact guilty;
(2) extent of the harm caused by the offense;

the law is neither attainable nor desirable. The courts have seldom challenged this practice of prosecuting only a chosen few from among those who have engaged in the same proscribed conduct.[99] Only in the infrequent cases where a defendant has been able to show intentional discrimination based on an impermissible standard (*e.g.*, race) have the courts been willing to find that an individual's right to equal treatment has been infringed by the state.[100] However, more recently the judiciary has become increasingly receptive to a defendant's assertion of this claim.[101]

The danger in allowing the prosecutor to exercise unbridled discretion is that s/he may choose to pursue individuals that s/he thinks should be convicted. Instead, s/he should be directing his or her efforts at those cases which, for the community's well-being, ought to be prosecuted. This potential for abuse is inherent in the discretionary nature of the administrative processing of criminal defendants:

> If the prosecutor is obliged to choose his cases, it follows that he can choose his defendants.
>
> . . . It is in this realm—in which the prosecutor picks some person whom he dislikes or desires to embarrass, or selects some group of unpopular persons and then looks for an offense, that the greatest danger of abuse of prosecuting power lies. It is here that law enforcement becomes personal, and the real crime becomes that of being

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(3) possible improper motive of a complainant;
(4) victim's reluctance to testify, etc.

Id. Legislative "overcriminalization" has also been suggested as supporting a prosecutor's decision not to prosecute in certain instances. La Fave, *supra* note 43, at 533. In addition *see* NATIONAL ADVISORY COMMISSION ON CRIMINAL JUSTICE STANDARDS AND GOALS, COURTS § 1.1 (Criteria for Screening) (1973) [hereinafter cited as COURTS]; TASK FORCE REPORT: THE COURTS, *supra* note 44, at 5-8.

99. *See* Comment, *The Right to Nondiscriminatory Enforcement of State Penal Laws,* 61 COLUM. L. REV. 1103, 1141 (1961).

100. The classic statement of this standard is found in Yick Wo v. Hopkins, 118 U.S. 356, 357, 373-74 (1886). However, commentators have noted that since *Yick Wo* the guidelines applied by courts to claims of discriminatory prosecution have been sketchy at best. *See* Comment, 9 HARV. CIV. RIGHTS-CIV. LIB. L. REV. 372, 379-81 (1974). For one to substantiate a claim of discriminatory prosecution, the "general rule" is that s/he "must allege and prove what the prosecutor knew, what the prosecutor decided, and why he decided it. The defendant must do this although he has in fact been treated unequally vis-a-vis others who are also violating the law, and although the matters he must prove are known only by the prosecutor." Givelber, *supra* note 43, at 95. Bad faith prosecution (initiated to harass or to deter the exercise of a protected right) is recognized as a clear abuse of authority. *See, e.g.*, Dombrowski v. Pfister, 380 U.S. 479 (1965); Shaw v. Garrison, 467 F.2d 113 (5th Cir.), *cert. denied,* 409 U.S. 1024 (1972); Dixon v. District of Columbia, 394 F.2d 966 (D.C. Cir. 1968).

101. *See, e.g.*, United States v. Falk, 479 F.2d 616 (7th Cir. 1973) (non-possession of Selective Service registration and classification cards); United States v. Steele, 461 F.2d 1148 (9th Cir. 1972) (refusal to answer census questions); United States v. Crowthers, 456 F.2d 1074 (4th Cir. 1972) (disorderly conduct at a demonstration).

> unpopular with the predominant or governing group or being attached to the wrong political views . . . .[102]

Support is growing for Professor Kenneth Davis' suggestion[103] that these adverse effects of prosecutorial discretion may be minimized by structuring and raising the visibility of this decision-making process.[104] General guidelines should be formulated, put in writing and publicized. In individual cases the rationale supporting a prosecutor's action should be made explicit and recorded.[105] As Professor Davis has recommended, the prosecutor's decisions should be subjected to "a simple and general requirement of open findings, open reasons, and open precedents, except when special reason for confidentiality exists."[106]

PROMIS, however, is not designed to make the prosecutor's decision-making more visible to defendants, the courts or the public. Instead, its primary emphasis is on assuring hierarchical accountability within the prosecutor's office. PROMIS aids in structuring prosecutorial discretion in two ways. First, as discussed earlier, PROMIS generates case-ratings which are utilized in the assigning of office personnel and resources to high-priority cases. Second, PROMIS requires assistant district attorneys to record "reason data" on each dismissal.[107] This information is then readily accessible to the chief or supervising prosecutor. The chief prosecutor can then use PROMIS as a managerial aid to frame policy, monitor and enforce adherence to that policy, and evaluate its effectiveness. According to the *PROMIS Briefing Series* this capability meets the need

> to hold subordinates accountable for adherence to policy governing discretionary decision-making. Accountability results if the visibility of such decisions is raised to the point where they can be monitored, as when reasons are recorded in explanation of discretionary actions.[108]

The *Briefing Series* also claims that records of such "reason data" better enable the chief prosecutor to assure the evenhanded adminis-

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102. Jackson, *supra* note 42, at 19; LIMITS OF THE CRIMINAL SANCTION, *supra* note 4, at 290-91.

103. K. DAVIS, DISCRETIONARY JUSTICE, *supra* note 43.

104. COURTS, *supra* note 98, at 3.

105. *Id.* The case for publication of prosecutorial policy is made in Abrams, *Internal Policy: Guiding the Exercise of Prosecutorial Discretion,* 19 U.C.L.A.L. REV. 25-28 (1971).

106. K. DAVIS, *supra* note 43, at 190.

107. BRIEFING SERIES NO. 8, REASONS FOR DISCRETIONARY AND OTHER ACTIONS 2 (1974). There is apparently no requirement that reason data be entered into PROMIS at each stage that the prosecutor decides s/he should proceed with the case.

108. *Id.* at 3.

tration of justice. It is important to recognize, however, that while these records do facilitate administrative control over caseloads, they do not *necessarily* promote either visibility or the equitable administration of justice.

For instance, two assistant district attorneys each process identical felony cases (the same legal charge and the same PROMIS case rating for each). Subsequently, one defendant goes to trial on the felony charge while the other is permitted to plead to a misdemeanor count. By evaluating the reason data the chief prosecutor can determine the soundness of each assistant's decision. If the reason is found to be inadequate, the assistant is so advised or office policy is reformulated.[109] PROMIS' design thus assures that the supervising prosecutor's discretion is implemented rather than his subordinates'. It stresses the role of the central supervising authority but does not embody safeguards that will insure that the policies set by this authority are reasonable and fair.

An additional benefit, according to the *Briefing Series,* lies in improved internal administration from the prosecutor's use of reason data to identify practices *outside* the office which might hinder his/her effectiveness. For example, PROMIS might be used to identify those police who consistently make arrests without probable cause.[110] The prosecutor could then bring these problems to the attention of the particular agency for appropriate corrective action.

These uses of PROMIS to guide the prosecutor's actions pose two serious problems. First, it is possible that inappropriate or legally impermissible criteria will be applied in programming PROMIS to select the "most important" cases for special attention, resulting in discriminatory prosecutions. Second, there is the potential for decision-making to become purely mechanistic.

PROMIS' case-rating criteria are strongly biased toward selecting personal injury or property-loss crimes for special attention. Far from being neutral, the PROMIS criteria contain a class bias. The PROMIS system tends to select out street crime and crime committed by members of lower economic classes over middle-class, white-collar crime. It may in fact be more "economical" for the prosecutor to concentrate resources on these highly visible street crimes because they may offer the opportunity for a greater number of visible, successful prosecutions at a lesser investment cost.[111] But this may be a faulty, self-serving

109. *Id.* at 4.
110. *Id.* at 6.
111. *See* R. POSNER, ECONOMIC ANALYSIS OF LAW, *supra* note 10, at 382.

economic choice. It ignores the long-run cost to the community from losses due to the much more lucrative white-collar crime which would receive considerably less of the prosecutor's attention and resources under the current PROMIS standards.[112]

Precautions must also be taken to guard against another type of abuse that often arises in the recording of personal information and maintenance of data files. As computer information systems like PROMIS proliferate throughout criminal justice institutions, it is necessary that administrators charged with supervising the implementation of such systems remain sensitive to the problems of contextual accuracy that will inevitably arise. Precautions must be taken to program PROMIS with sufficient accuracy and specificity to assure that the PROMIS-generated case-ratings accurately reflect the background and status of a case. When data subjects identify either factual or contextual inaccuracies, means must be readily accessible to redress these grievances and to correct or clarify file-data so that mishandling or misclassification of data does not result in an unwarranted charge or prosecution.

If a "history of drug abuse" is relied on as a case-rating criterion, PROMIS must be programmed to distinguish between "soft" drugs, personal use of which may be only a civil violation, and "hard" drugs, which may indicate some form of involvement with organized crime. If case-delay is a factor that PROMIS is to balance in its formula, safeguards must be developed to assure that assertion of pre-trial procedural remedies (*e.g.*, preliminary, Wade or suppression hearings) does not become a basis for subjecting an individual to especially aggressive prosecution. In the interests of speed and efficiency, and in the absence of appropriate checks, PROMIS might be utilized, consciously or not, as an instrument for discouraging assertion of these constitutionally guaranteed procedural safeguards.

Of immediate concern is PROMIS reliance on arrest records in its evaluative process. Unexplained and incomplete arrest records, disseminated throughout the nation via computer networks, are some of the most dangerous types of personal information in our society.[113]

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112. Applying these criteria to cases prosecuted in the Washington, D.C. Superior Court would be appropriate since this court concentrates on adjudicating street crime cases. However, in jurisdictions not so organized, the PROMIS bias toward isolating street crime could divert the prosecutor's attention from important areas that deserve scrutiny.

113. *See* Miller, *The Right of Privacy: Data Banks and Dossiers*, in FINAL REPORT OF THE ANNUAL CHIEF JUSTICE EARL WARREN CONFERENCE ON ADVOCACY IN THE UNITED STATES 72, 76-77 (1974). *See generally* A. MILLER, THE ASSAULT ON PRIVACY 47 et seq. (1971).

A very large percentage of arrest records exchanged by the various police agencies show no disposition of the charge following arrest. Nor apparently does PROMIS differentiate between arrests that ultimately resulted in a "nolle prosequi," a finding of innocence or reversal of conviction on appeal from those arrests that led to conviction.[114] This practice can lead to the prosecutor perpetuating harassment, begun by the police, of groups such as gays or political activists who may often be arrested by the police but seldom convicted. In a nation that is supposed to be committed to the proposition that one is innocent until conclusively proven guilty, PROMIS' reliance on incomplete arrest records as a basis for identifying cases worthy of aggressive prosecution is unwarranted.

Perhaps the greatest potential for abuse lies in the prosecutor's power to combine information garnered from intelligence systems with his agency's regular information files.[115] These intelligence systems, developed largely with LEAA grants, store primarily data on organized crime, civil disorders and political dissenters.[116] It is possible for a prosecutor to develop his own intelligence files or to gain access to similar files maintained by other agencies, particularly records that identify a subject as a social activist or political extremist of either fringe.[117] The prosecutor could then use this information in conjunction with PROMIS to identify individuals vulnerable to or "deserving of" prosecution. If such practices were shown to exist a clear case of abuse of discretion could be substantiated.[118]

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114. It has already been noted that efforts are apparently underway to incorporate conviction data into PROMIS. *See* note 75 *supra.*

115. *See* HEW, RECORDS, COMPUTERS AND THE RIGHTS OF CITIZENS: REPORT OF THE SECRETARY'S ADVISORY COMMITTEE ON AUTOMATED PERSONAL DATA SYSTEMS 223 (1973) [hereinafter cited as HEW REPORT].

116. *Id.* In addition, see Laird v. Tatum, 408 U.S. 1 (1972), where the issue was the potential "chilling effect" on first amendment rights engendered by the Army's surveillance of "lawful and peaceful civilian political activity."

117. Recent disclosures of "enemies lists" and files on potentially "vulnerable" political dissidents, legislators and other public and private officials, maintained by the White House, the CIA, FBI and Departments of State and Defense, attest to the broadening scope of this problem. *See* Amsterdam, *The One-Sided Sword: Selective Prosecution in Federal Courts,* 6 RUTGERS-CAMDEN L.J. 1, 2 (1974).

118. *See, e.g.,* Lenske v. United States, 383 F.2d 20 (9th Cir. 1967), in which Judge Madden (concurring) expressed dismay over the pursuit of Lenske by a revenue agent, for the purpose of establishing a tax fraud charge because the agent thought Lenske was a communist. Apparently prosecuting a suspected dangerous criminal for a petty crime is considered to be a proper basis for selectivity. United States v. Sacco, 428 F.2d 264 (9th Cir. 1970) (suspected organized crime figure convicted of violating alien registration laws). In this same vein, the prosecutor has been allowed to charge a suspected criminal with any petty crime s/he has committed, even though most people would not be prosecuted for the same offense. The defendant must be suspected of having com-

However, it would be difficult to substantiate this abuse given PROMIS' current lack of visibility to the public. Unfortunately, it is usually the technologically unsophisticated defendant who feels that s/he may be the object of a discriminatory prosecution. S/he must confront a mechanistic system whose computer software and impersonal operations mask the policies and values that guide decision-making. While the dangers remain the same as those recognized by Justice Jackson,[119] the "personal" discretionary element *appears* to have been removed. It is extremely difficult to attribute intent or purposefulness to a machine. The fact that a programmer stands behind the computer and its print-outs is too easily and too often obscured. Those people who are in the best position to evaluate the program's intent—the programmers and managerial staff—are the least inclined to expose its subjective biases and decision-making chain. They have a vested interest in its continued operation. Those who might wish or are required to challenge it (defendant, defendant's attorney, judges) are too often at a tremendous technological disadvantage.

These prospects strongly reinforce the need to make prosecutorial decision criteria more visible. PROMIS presently focuses on making the rationales for staff decisions apparent to supervisors. But it is not a sufficient check on discretion to place responsibility for scrutinizing prosecutors' activities soley in the hands of the chief prosecutor. PROMIS must be designed and operated to facilitate access to its policy data by appropriate outsiders as well. Evaluation and criticism by outside sources could lead to revisions and improvements within the prosecutor's office. Defense attorneys would be better able to counsel clients and to negotiate on an even basis with prosecutors. Courts would be able to knowledgeably adjudicate an accused's allegations of discriminatory treatment by prosecutors.[120]

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mitted other *crimes* rather than of engaging in unpopular *legal* activities. Cox v. Louisiana, 379 U.S. 536, 557-58 (1965).

Further militating against one's successfully establishing a claim of discrimination is the rule that if the prosecutor can demonstrate a "not insignificant" degree of enforcement, the claim of discrimination will fail. Rhinehart v. Rhay, 440 F.2d 718 (9th Cir.), *cert. denied,* 404 U.S. 825 (1971). Defendant, charged with sodomy, offered to prove his claim of discriminatory prosecution with affidavits attesting to the tolerance by police of homosexual activity that regularly occurred in the city of his arrest. His offer of proof was denied when it was demonstrated that numerous prosecutions for sodomy were initiated before and after his prosecution. *Id.* at 727. This type of rule would have serious implications for someone who is arrested on a minor charge which would otherwise be treated in run-of-the-mill fashion, until the cross-indexing of an intelligence file with PROMIS indicates this person to be a political dissident. If PROMIS were so programmed, it might then direct that this person deserved special prosecutorial attention.

119. *See* note 42 *supra.*

120. *See* Abrams, *supra* note 105.

With the proper guidelines and supervision, the computer can be instrumental in achieving the objectives of "open findings, open reasons and open precedents." With minimal effort, data can be quickly retrieved and made available to litigants and judges. By directing that appropriate statistical techniques be applied to the data base the courts can evaluate the legitimacy of "selective" prosecutions. Policies advocated by the community or mandated by courts and legislatures can be programmed into the computer memory and their implementation effectively monitored.

But there are important pitfalls associated with computer-generated data that must be avoided. The computer has the ability to package erroneous or misleading data into an extremely persuasive format. It is often difficult to look behind that package. As has been frequently noted, those who lack the technical expertise to undertake an adequate analysis of the data's validity may be subject to a subconscious bias that computer generated data is inherently correct.[121]

To minimize these problems, the prosecutor should be required to provide, under appropriate circumstances, a careful analysis, from information source, through each stage of processing, to the final data output by PROMIS. More specifically, this would entail a demonstration of the following:

(1) that steps were taken to detect and reduce error at the data collection stages;

(2) the source of the underlying data;

(3) that errors were not introducted at later stages of processing, especially via an erroneous program that might cause data to be lost, transformed or incompletely retrieved;

(4) that the programs do in fact perform the functions that they are supposed to do at each point that the data are manipulated;

(5) that the computer has displayed the results accurately and in an unbiased format.[122]

While these requirements may prove burdensome to the prosecutor, they are necessary if computer-guided discretion is to be effectively contained.

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121. *See* Roberts, *A Practitioner's Primer on Computer-Generated Evidence,* 41 U. CHI. L. REV. 254, 274 (1974).

122. These guidelines have been adapted from those recommended to regulate the use of computer-generated evidence. *See id.* at 263-72.

PROMIS is still in the nascent stage. As its case-evaluation techniques become more sophisticated, the risk increases that decision-making will become purely mechanical.[123] Basing decisions exclusively on computer feedback can have a limiting effect that must be avoided. People and machines simply do not think alike. Computers rely heavily on quantitative methodologies while human thought processes are not so easily defined. Much can be lost when people attempt to force their human, intuitive thought structures into mathematical modes. PROMIS may cope quite adequately with well-defined, quantified inputs. But it is not at all certain that PROMIS is capable of dealing with the myriad subtleties contained in the inquiry of "whether the prosecution in the long run would do more harm than good."[124]

Threats to personal privacy are also inherent in the spread of "integrated information systems" such as PROMIS, TRACE, NCIC, SEARCH[125] and New York State's Identification and Intelligence System.[126] NCIC is already the core of an elaborate crime-information network that will eventually integrate and coordinate law enforcement information centers throughout the nation into a single system.[127] On a smaller scale such an integrated system, incorporating PROMIS, already exists in Washington, D.C.[128] The trap that these interconnected systems can create for an individual has been widely documented:

> The new criminal justice information network can be used in conjunction with the vast government and private computer dossiers being compiled by credit bureaus, insurance companies, welfare agencies, mental health units and others. Cumulatively, these files threaten an "information tyranny" that could lock each citizen into his past; they signal the end of a uniquely American promise—that the individual can shed past mistakes and entanglements, and start out anew.[129]

As PROMIS is adopted elsewhere,[130] it is imperative that these concerns be addressed at the design and implementation stage. Appro-

123. This risk is emphatically denied by PROMIS' promoters who claim that the case-rating procedure "permits prosecutive judgment to conform more closely to the specific facts surrounding the defendant and his or her crime than would otherwise be possible." BRIEFING SERIES No. 3 at 3.

124. Kaplan, *The Prosecutorial Discretion—A Comment,* 60 NW. U.L. REV. 174, 193 (1965).

125. *See* HEW REPORT, *supra* note 115, at 227-36.

126. *See generally* A. MILLER, THE ASSAULT ON PRIVACY 162-67 (1971); A. WESTIN & M. BAKER, DATABANKS IN A FREE SOCIETY 47-64, 311-15 (1972).

127. HEW REPORT at 225-39.

128. *See* note 92 *supra.*

129. HEW REPORT at 224-25.

130. PROMIS has been or is being installed in the following locations: Los Angeles County (in three field offices as a prototype), Rhode Island Attorney General's

priate safeguards must be devised and explicit regulations promulgated to assure that privacy invasion is minimized.[131] It is only too typical that privacy considerations are the last to receive attention.[132] Without adequate controls these information systems will continue to expand, driven by their own momentum.[133]

The courts have generally looked favorably on law enforcement information gathering and sharing practices as essential to crime detection and prevention.[134] But as automated criminal information systems expand, they incorporate growing volumes of sensitive information about people who are neither fugitives nor suspects. Precautions to insure the security and integrity of these files are lax at best and often nonexistent. The dangers posed by these systems may already outweigh any benefits.[135]

Finally, the courts must face the possibility that a prosecutor, supported by the PROMIS computer capabilities, may come to exercise

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office, New Orleans, Wayne County (Detroit) and the Manhattan district attorney's office. Telephone interview with William A. Hamilton, President, Institute for Law & Social Research, April 29, 1975.

131. Various legislative efforts have been directed at regulating the collection and dissemination of criminal justice information. *See, e.g.*, Iowa Criminal History and Intelligence Disclosure Act, 1973, IOWA CODE ANN. § 749 B. (West Supp. 1975); Mass. Criminal Offender Record Information System Act, MASS. ANN. LAWS ch. 6, §§ 167-178 (West Supp. 1975); An Act Relating to the Collection, Security and Dissemination of Records and Information by the State and Its Political Subdivisions, MINN. STAT. ANN. §§ 15.162-15.168 (West Supp. 1975); Berkeley, Cal., Ordinance No. 4732 (1974) (requiring a social impact statement before funds can be allocated or expended for implementation of or significant change in any automated city personal data system).

132. *See* BRIEFING SERIES No. 18, PRIVACY AND SECURITY (forthcoming).

133. Dr. Ida Hoos, an outspoken critic of management information systems suggests that there are very active forces behind the information explosion. The intertwining of technology and Madison Avenue has made information handling and related management science techniques valuable commodities:

> [O]versell dominates every stage of the system analysis from proposal to final report. The "expert" appears in many forms . . . but always as a salesman in disguise. He testifies at Congressional hearings; he delivers keynote addresses at meetings of all kinds of professional groups. His presence at the latter is strictly that of the fox in the henhouse, for he invariably predicts growing complexity ahead and promulgates the notion that nothing short of the powerful tools of his technology will suffice to handle the problems. . . . The name of the game is self-perpetuation, the stakes are high, for systems business is booming, here and abroad.

Hoos, *Systems Experts: Foxes in the Henhouse*, in INFORMATION TECHNOLOGY IN A DEMOCRACY 444, 448-49 (A. Westin ed. 1971). In addition, *see* I. HOOS, SYSTEMS ANALYSIS IN PUBLIC POLICY (1972); I. HOOS, SYSTEMS ANALYSIS IN SOCIAL POLICY (1969); Hoos, *Can Systems Analysis Solve Social Problems?*, 20 DATAMATION 82 (1974).

134. *See, e.g.*, Anderson v. Sills, 56 N.J. 210, 265 A.2d 678 (1970). The court did recognize that judicial intervention, limited to offending material or practices, might be warranted if information is being gathered which the police "could not reasonably believe to be relevant to the police function . . . ." 265 A.2d at 689.

135. *See* A. MILLER, THE ASSAULT ON PRIVACY, *supra* note 92, at 163.

inordinate and unwarranted control over the entire criminal justice process. The prosecutor, equipped with such a sophisticated managerial tool may come, whether intentionally or not, to *direct* the court's activities. However, since the courts are responsible for supervising the prosecutor, as well as many of the other criminal justice agencies with which the prosecutor interacts, PROMIS creates pressure on the courts to respond if they are to avoid being dominated by the prosecutor. In sheer self-defense courts not already equipped with such capabilities may be forced to give serious consideration to adopting computer information techniques and related management science tools.

IV. The Courts and Computerization

There is an extensive literature describing and advocating computer applications to streamline criminal court administration.[136] While use of electronic computers is economically viable in only about 300 of the largest jurisdictions, these jurisdictions tend to include metropolitan courts where criminal caseloads are burgeoning and the greatest court delay is found.[137]

Many of the uses of data automation as an aid in the day-to-day operation of the courts parallel those described in the preceding section on PROMIS. Those computer applications most relevant to the judiciary include:[138]

(1) compliation of automated data files, which contain identifying and administrative information for each case;

(2) statistical analysis of the judicial caseload, used to identify reasons for case continuances and other causes for delay;

(3) automated random selection of jurors, printing of subpoenas and making of jury assignments, in the hope of eliminating excessive juror waiting time;

136. *See, e.g.*, E. Adams, Courts and Computers (1972); Adams, *The Move Toward Modern Data Management in the Courts*, 23 U. Fla. L. Rev. 250 (1971); Halloran, *Modernized Court Administration*, in Task Force Report: The Courts, *supra* note 44, at 162; McKee, *Computers and the Courts—Recommendations Made to the Courts Task Force*, 3 Rutgers J. Computers & L. 134 (1973); Polansky, *Contemporary Automation in the Courts*, 6 Law & Computer Technology 122 (no. 6) (1973); Symposium, *Courts of Tomorrow*, 12 Jurimetrics J. 195 (1972). A sampling of articles from Judicature, the Journal of the American Judicature Society include: Blaine, *Computer-Based Information Systems Can Help Solve Urban Court Problems*, 54 Judicature 149 (1970); Kleps, *Computers and Court Management*, 53 Judicature 322 (1970); Winters, *Innovations in Court Administration*, 55 Judicature 194 (1971).

137. Task Force Report: The Courts, *supra* note 44, at 89-90.

138. Polansky, *Contemporary Automation in the Courts*, *supra* note 136, at 123-27.

(4) print-outs of attorney "inventory" reports that make it possible for the court to evaluate the quantity and age of the pending cases for every attorney and thus enable the court to identify those counsel who are "overloaded" and to "act accordingly;"[139]

(5) case scheduling: while the greatest theoretical advantage to be gained from computer applications would be the use of automated scheduling to provide maximum coordination and utilization of all parties, resources and facilities, to date no jurisdiction has been able to implement an automated schedule.

While such computer applications are operative in a limited number of jurisdictions,[140] impediments to implementation of automated systems have yet to be overcome in many others:

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139. *Id.* at 125. The problems that may be encountered if/when such computer-generated "attorney lists" become prevalent were highlighted by an anecdote related by Judge Leon Higgenbotham:

> We went over the data [computer printouts on attorney performance] and found some lawyers just had too many cases . . . so the Chief Judge wrote a letter to the parties and said:
>
> "It appears to me that if you have more than five cases within the first 550 on the trial list, you should consider voluntarily reassigning them. If you will not voluntarily reassign it, please be in court on Friday to give me . . . the name and address of your client . . . ." [A]nd because of the Chief Judge's unusual persuasiveness, when we walked into Court that Friday morning we found literally that hundreds of cases had been reassigned.

Higgenbotham, *The Trial Backlog and Computer Analysis,* 44 F.R.D. 104, 109 (1967).

While court regulation of attorney case backlogs may be necessary on occasion, judicial intimidation of this nature is unwarranted, especially since there were apparently no rules promulgated by the court to structure the Chief Judge's discretionary actions. Such judicial acts raise important constitutional questions regarding both the right of a criminal defendant to counsel of his own choice and the lawyer's right to pursue his profession. *Cf.* Moore v. Jamieson, 451 Pa. 299, 306 A.2d 283 (1973), where the court found a court rule requiring an attorney, who was counsel in ten or more criminal cases over a year old, to forego taking additional criminal clients, to be vague and overbroad. The court recognized that the state, in the interests of the swift and efficient administration of criminal justice, could exercise certain regulatory authority over attorneys. But it found that the rule adopted failed to provide either a standard by which responsibility for the delay could be assigned or a procedure for resolving disputes between attorneys and the supervising court.

140. Philadelphia, which has had a fully operational computer information system since 1968, is one of the jurisdictions that has apparently experienced success in automating its caseload. The Philadelphia court has a pioneering on-line case-monitoring system which tracks current cases, assigns priorities and analyzes attorney caseloads. For a description of the Philadelphia operation see Blake & Polansky, *Computer Streamlines Caseload at Philadelphia Common Pleas Court,* 53 JUDICATURE 205 (1969). A survey of those jurisdictions where computerization is operative can be found in Polansky, *Contemporary Automation in the Courts, supra* note 136.

For a largely theoretical discussion of another computer-based management information system see Ebersole & Hall, *COURTRAN: A Modular Management Information and Research System for the Judicial Process,* 3 RUTGERS J. COMPUTERS & L. 83 (1973).

> The few experts in court procedure and automation . . . generally give poor report cards to edp and management consultants . . . . The archaic courts know nothing of computers. The quill is their tool, and they are run by judges, clerks, and prosecutors, acting as part-time administrators.
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> . . . .
>
> . . . [I]t's . . . folly to automate an inefficient system.[141]

To remedy these organization deficiencies, Chief Justice Warren Burger has urged that the courts need management that overworked judges simply cannot provide: "We need a corps of trained administrators or managers . . . to manage and direct the machinery so that judges can concentrate on their primary professional duty of judging."[142] In response to such attitudes there has been a proliferation of management and administrative specialists in judicial operations. The purpose of this influx of court administrators is to aid the judiciary by collecting judicial statistics, managing fiscal affairs, supervising court personnel and coordinating the assignment of judges and the scheduling of cases.[143]

COURTRAN is described as a "modular software system designed by the staff of the Federal Judicial Center . . . to provide information support services for court management and for study and evaluation of court procedures and processes." *Id.* at 84. The "modular" concept involves development of many small, component programs (called "functional modules"), each of which has a specific function. Modules can then be combined to create different systems, enabling one to manipulate one or two modules without the need to reprogram an entire subsystem. The use of a "transition matrix structure" for defining the developments in the life of a case is described as the most unique characteristic of COURTRAN. A transition matrix is a technique for symbolically representing case events and stages and can be viewed as a simplified flow-charting technique, whereby a case may be followed from entrance into the judicial system to its eventual exit. *Id.* at 92.

141. Pantages, *No Glory in Chaos,* 12 JURIMETRICS J. 193-94 (1972).

142. Burger, *Court Administrators—Where Would We Find Them,* 53 JUDICATURE 108 (1969); CHALLENGE OF CRIME IN A FREE SOCIETY, *supra* note 1, at 380-81. The presuppositions of the management perspective have been outlined by Professor David Saari: "*A court with impaired management produces an inferior brand of justice.* . . . [J]udges operating in an efficient, professionally-sensitive and well-managed environment will be relieved of major management distractions and will be afforded a maximum opportunity to devote their total professional focus to the task of adjudication." Saari, *Management and Courts: A Perplexing Nexus,* 20 AM. U.L. REV. 601, 604 (1971).

143. *See generally* Saari, *Court Management and the Administration of Justice,* in LAW AND ORDER RECONSIDERED, *supra* note 3, at 554-73; D. SAARI, MODERN COURT MANAGEMENT: TRENDS IN THE ROLE OF THE COURT EXECUTIVE (1970); Tydings, *Modernizing the Administration of Justice,* 50 JUDICATURE 258 (1967).

The Institute for Court Management in Denver, Colorado was founded in 1970. The Institute is sponsored jointly by the Institute of Judicial Administration at New York University, the American Bar Association and the American Judicature Society. Its purpose is to develop sophisticated court management procedures and to train professional court executives with managerial expertise. *See* Saari, *supra* note 142, at 602.

But even if management of judicial institutions is supervised by those with legal training (lawyers who become managers or judges who become assignment or administrative judges) as foreseen by some,[144] there is a risk that the courts may abdicate their supervisory and policy-making functions to a staff of managerial technicians. To avoid the specter of judicial institutions entrusted to a technological elite, it is incumbent upon those charged with adjudicating to consciously guard against being mystified by the technical expertise and jargon of these management specialists. It is their responsibility to articulate and enforce the limits of the managerial role:

> [Court] management is not a universal panacea for all the non-judicial problems of a court. It is not a job exclusively for efficiency experts whose only values are increased speed, increased production, lower costs, and less waste. . . . Improved court management will see delegation of the details of management to someone other than the judge, but the important matters of administrative policy as well as judicial policy must be established by the judge.[145]

Those enthralled by the computer's technological capabilities may come to believe that computers and the technical staff that programs and operates them are themselves responsible for reducing the judicial backlog. Judges who rely on such techniques, however, must continuously make certain that the technicians and their machines remain merely advisory to the judicial function. A judge with access to automatic data processing facilities may be better able to discern the roots of problems causing systemic congestion and delay in his court. But it is the *judge's decisions* based on such knowledge, not the technology itself, that will alleviate the backlog.[146]

However, the admittedly very real problems of court congestion must not be permitted to obscure other more important issues facing the criminal courts.[147] As a critic of the "congestion syndrome" has

144. *See* Saari, *supra* note 142, at 607. Because of the high level of technical expertise in the fields of management science, quantitative methods and computer software required of those in court manager positions, it is not at all certain that the transition from lawyer or judge to manager can be easily made.

145. LAW AND ORDER RECONSIDERED, *supra* note 3, at 556.

146. *See* E. ADAMS, COURTS AND COMPUTERS 126-27 (1972). Martin Mayer has pointed out a drawback that may be encountered should a court administrator become too influential: "[E]veryone wishes to maintain the independence of judges and any judge under tight administrative control is in a position to be punished." M. MAYER, THE LAWYERS 434 (1967).

147. *See, e.g.*, Comisky, *Slow Justice Is Preferable to Speedy Injustice*, 44 PA. B. ASS'N Q. 23 (1972); Foster, *The Right to a Slow Trial: Insuring Effective Counsel*, 2 AM. J. CRIM. L. 67 (1973).

observed: "[T]he deeper we probe into the problem of efficiency in court processes, the more apparent it becomes that the vital problem is the quality, not the speed, of the process."[148] Nor is it clear that speed and size of the backlog are the best criteria for evaluating a court's performance and effectiveness. The measure of a court's effectiveness depends on what is considered to be the most important function of courts in a democratic society. As Judge David Bazelon has observed, our courts are charged with tasks that are considerably more complex than that of routinely processing the accused from arraignment through final disposition:

> [C]ourts in the criminal process serve functions far more important than simply clearing people off the streets, no matter how well or accurately they do that job. No matter how much we expand our judicial resources, the courts cannot be the primary agency we rely upon to solve our problems. Other institutions, better adapted to broad-scale programs and more institutionally responsive to changing conditions, must handle those jobs. But what the courts *can* do is take the time necessary to see to it that the other institutions are in fact doing what they are supposed to do.
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> . . . .
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> . . . But these functions take substantial time. *Efficiency is nice, but it's really beside the point. The true measure of the quality of a judicial system is how many hidden problems it brings into public view and how well it stimulates the responsible officials and agencies into doing something about these problems.*[149]

Two considerations relevant to PROMIS should also be noted in connection with automated judicial information systems. The first is the manager's perennial quest for the Total Justice Information Sys-

148. Rosenberg, *Court Congestion: Status, Causes, and Proposed Remedies,* in THE COURTS, THE PUBLIC, AND THE LAW EXPLOSION 29, 57 (H. Jones ed. 1965).

149. Bazelon, *supra* note 35, at 654-55, 660 (emphasis added). Judge Bazelon has provided a succinct summary of the relationship of efficiency to adjudicatory processes:

> The judicial process is at its core a fundamentally inefficient process. This must be so, for inevitably problems that are brought before the courts are the problems that no other social institution has solved. The courts themselves, of course, cannot solve these problems. What they can do, however, is take a close look indeed at the situation before them, to bring out factors that have previously remained hidden and to insure that the responsible agencies are making a genuine effort to deal with the problems instead of simply acting out of ignorance, fear or prejudice.
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> . . . .
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> . . . The judicial process is a social institution designed to guarantee that this probing will be done. We strike at its very reason for being if we seek to eliminate this aspect of the judicial function as a sacrifice on the altar of the Great God Efficiency.

Id. at 673-74.

tem (TJIS). The judicial system manager desires that as much pertinent criminal justice information as possible be collected and maintained centrally: "TJIS offers the only possible answer to criminal justice information needs . . . the only way to avoid replication of data and resources; and . . . the key to complete and consistent data in all agencies."[150] Courts adopting management information systems to speed their administrative and adjudicative processes would be well-advised to reflect on the implications of this scenario described by Dr. Ida Hoos:

> Gargantuan [information] systems that, with the ingestive propensities of snakes, have subverted and swallowed up the very organizations they were purported to serve are the outcome of a chain of apparently innocuous circumstances. Electronic data processing introduced in the mid 1950s to hasten the paper flow, reduce clerical costs, and increase efficiency in information handling was the first step. The logic was clear, economic justification unassailable . . . .
>
> But two decades and two computer generations later the promises are still illusory. To be sure, records move faster, but their volume has increased exponentially. In Parkinsonian fashion, they have expanded to fill all computer time.[151]

The courts should strive to resist the metamorphosis from adjudicatory institution to information compiler and processor. Such a metamorphosis will not improve the quality of justice, but will more likely encumber the judicial machinery with bureaucratic features deplored in other government agencies.

The second problem inheres in the almost infectious tendency of computer information processing techniques to make their impact felt in systems and agencies contiguous to those in which such technologies are operative. As courts come to rely on attorney lists and related applications to monitor lawyers' caseloads and to regulate their activities, attorneys may themselves be compelled to implement computer techniques.[152] Agencies that use this technology will be most amenable

150. Polansky, *supra* note 136, at 134-35. *See generally* CHALLENGE OF CRIME IN A FREE SOCIETY, *supra* note 1, at 598-606; TASK FORCE REPORT: SCIENCE AND TECHNOLOGY, *supra* note 8, at 68-79; Lejins, *National Crime Data Reporting System: Proposal for a Model,* in TASK FORCE REPORT: CRIME AND ITS IMPACT—AN ASSESSMENT 178 (1967); *Criminal Statistics—An Urgently Needed Resource,* in *id.* at 123.

151. Hoos, *Can Systems Analysis Solve Social Problems?,* 20 DATAMATION 82, 83 (1974).

152. One lawyer familiar with such automated techniques has advised that:

> Lawyers should explore the feasibility of setting up systems that will keep them abreast of the work of their offices and that will bring to light particular situations that they can expect the courts to be critical of. In doing this work, they

to other agencies already employing management science techniques and computerization. Whether or not s/he favors the approach, the lawyer will be faced with procedures, evaluative methodologies and language which will require at least a familiarity with the systems approach.

V. JUSSIM: Using Computers to Analyze the Criminal Justice System

"Systems" practitioners active in the areas of criminal justice planning and policy formulation have developed computer techniques for analyzing systemic dysfunctions. These analysts start from the data base that has been generated by the prosecutors' and courts' management information systems already described. Applying certain management science techniques, including systems analysis and operations research, they have constructed models of the criminal justice processes.[163] These models, or "simulations," are then used to pretest and explore the possible consequences of alternative policy and program actions. The following discussion will focus on one such model, JUSSIM. This model has been described by its originator, Professor Alfred Blumstein, as an interactive computer program that "is intended to permit criminal justice system managers and planners to test the downstream

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must give serious consideration to the possibility of using computer techniques as well as other techniques made available through management science.

Freed, *The Trial Backlog and Computer Analysis,* 44 F.R.D. 113, 115 (1967). *See generally Toward Structuring the Law Office: Designs for Efficiency,* Trial, Sept./Oct., 1974, at 10-72.

153. As Professor Alan Westin has recognized, the mutually reinforcing nature of computerized information systems and management science techniques is hardly fortuitous:

> [C]omputerized databanks and management science techniques . . . are usually interlocking phenomena. . . . [E]ach "route" tends to lead into the other. Creation of a computerized databank usually requires development of a "systems approach" to conceptualize the area and operations on which data are to be more "systematically" collected. Once the data from a computerized reporting system begin to flow in, there is a natural tendency to utilize these expensive and voluminous outputs to achieve the supposed benefits of simulation, operations research, program budgeting, and related management science techniques.
>
> Similarly, the adoption of systems analysis, operations research, and program budgeting by government agencies often creates heavy demands for "better data"—more of it, and more regularly gathered, collated, processed, and distributed. . . . [I]f the agency is heavily committed to management science approaches, it is almost inevitable that some kind of computerized databank will be called for, if budgets permit. Thus the two "routes" toward technological information systems tend to be mutually stimulating.

Westin, *Introduction,* in Information Technology in a Democracy 15, 27 (A. Westin ed. 1970).

resource and cost implications associated with contemplated changes within their CJS."[154] JUSSIM will be used to demonstrate how the uses of management information systems, with their stores of data collected and generated in the course of daily operations, have been extended to policy formulation and planning. More specifically, this discussion will focus on the implications of using a formal model such as JUSSIM to guide decision-making that will structure the future development of our criminal justice institutions.

As a preface to this discussion, it may prove useful to explicate some of the methodology and assumptions of the management science techniques of systems analysis, operations research and simulation that have been applied in modelling the administration of criminal justice. Systems analysis has been described in broad terms as "an approach to complex problems of choice under uncertainty by systematically examining the costs, effectiveness, and risks of the various alternatives."[155] This method directs that the practitioner proceed according to a plan in a rational and explicit way, from conception to operation.[156] It also directs that those individual operations under scrutiny be considered in relation to the total system being studied: a "global" or "system" view is to be kept in mind while details are manipulated.[157] Because of the rather loosely specified techniques that it prescribes for coping with complex problems, systems analysis has been described as "still largely a form of art."[158]

It is generally recognized that there is no clear line of demarca-

154. Blumstein, *Systems Analysis of Crime Control and the Criminal Justice System,* in SYSTEMS APPROACH AND THE CITY 253, 259 (M. Mesarovic & A. Reisman eds. 1972).

155. Quade, Military Systems Analysis, (RA-3452-PR, Santa Monica, California: The RAND Corporation, 1963), *as quoted in* G. STEINER, TOP MANAGEMENT PLANNING 393 (1969).

156. While there is no prescribed formula applicable to all cases, there are certain characteristics that tend to distinguish systems analysis from other approaches to complex problem solving. These include: (1) an eclectic, multi-disciplined perspective, drawing on judgment, intuition and expert knowledge; (2) application of the scientific method; (3) modeling; (4) application of cost/benefit analysis. G. STEINER, *supra* note 155, at 394-96. *See also* Wildavsky, *The Political Economy of Efficiency: Cost-Benefit Analysis, Systems Analysis, and Program Budgeting,* in POLITICAL SCIENCE AND PUBLIC POLICY 55-82 (A. Ranney ed. 1968).

157. For a discussion of the phenomenon of every system being embedded in a larger system, see C. CHURCHMAN, THE SYSTEMS APPROACH (1968).

158. E. QUADE, ANALYSIS FOR MILITARY DECISIONS 153 (1964). Dr. Ida Hoos has described systems analysis as "a direct lineal descendent of World War II operations research. OR was used to solve tactical and strategic problems of a military nature; systems analysis uses the same principles but has wider range and scope." Hoos, *Systems Experts: Foxes in the Henhouse, supra* note 133, at 445. While systems analysis uses calculation and quantitative methods, it generally places considerably less emphasis on them than does operations research.

tion between systems analysis and "operations research" (O.R.).[159] However, operations research techniques are usually reserved for the solution of limited, well-defined problems in which all the relevant relationships can be specified and quantified.[160] Beginning with specified objectives, the operations researcher then attempts to do an "optimization," that is s/he maximizes or minimizes some objective function, given the available resources.[161] O.R. is thus heavily dependent on the set of mathematical techniques appropriate to this end and the computer's high-speed, accuracy and computational capacities.[162]

The essence of the methodology of these related approaches (OR and SA) lies in the construction of a model appropriate to the problem. A model, or simulation, is usually the starting point in systems analysts' and operations researchers' attempts to discern order in the seemingly undirected, uncoordinated forces and relationships that characterize organizational problems. The model is often in the form of a computer program that "introduces a precise structure and terminology that serves primarily as an effective means of communication, and through feedback . . . helps the experts to arrive at a clearer understanding of the subject matter and the problem."[163] A likeness is developed from a simplified abstraction of the real system. The likeness takes the form of a dynamic model based on the *simulator's concept* of the key elements of the system, their operation and interaction.[164]

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159. Confusing and often interchangeable terminology gluts the systems field: We now have Operations Research, Management Science, Decision Science, Cost-Benefit Analysis, Cost-Effectiveness Analysis; Planning, Programming, and Budgeting; Optimal Allocation; Decision and Control; and finally, Systems Analysis. . . . [A]n attempt to straighten out these labels [p]robably . . . would only cause further proliferation of names and hence further confusion. H. RAIFFA, DECISION ANALYSIS 295 (1968).

160. *See generally* F. HILLIER & G. LIEBERMAN, INTRODUCTION TO OPERATIONS RESEARCH (1967); E. QUADE, *supra* note 158, at 2-12; Wagner, *The ABC's of OR,* 19 OPERATIONS RESEARCH 1259 (1971).

161. Enthoven, *Systems Analysis and the Navy,* in A MODERN DESIGN FOR DEFENSE DECISION; A MCNAMARA-HITCH-ENTHOVEN ANTHOLOGY 177-80 (S. Tucker ed. 1966), *as contained in* G. STEINER, *supra* note 155, at 400-02.

162. These mathematical techniques include linear programming, queuing theory, search theory and inventory theory. The mathematical orientation of O.R. is so dominant that it has been remarked that O.R. is most appropriately applied to problems "in which mathematics can be thought of as a substitute for rather than as an aid to judgment." G. STEINER, *supra* note 155, at 401.

163. E. QUADE, *supra* note 158, at 153. *See generally* T. NAYLOR, J. BALINTFY, D. BURDICK & K. CHU, COMPUTER SIMULATION TECHNIQUES 1-42 (1966); J. RASER, SIMULATION AND SOCIETY (1969).

164. *See* Greenberger, *A New Methodology for Computer Simulation,* in COMPUTER METHODS IN THE ANALYSIS OF LARGE-SCALE SOCIAL SYSTEMS 147-48 (J. Beshers ed. 1964); Comment, *Computer Simulation and Gaming: An Interdisciplinary Survey with a View Toward Legal Applications,* 24 STAN. L. REV. 712, 714-15 (1972).

A computer simulation can be easily modified and manipulated while the real world system often cannot. Dynamic, time-varying qualities can be built into the computer model. This enables one to simulate in a matter of minutes real world activities that would normally occur over many years. This allows for repeated trial-and-error experimentation with various control variables.[165]

It must be remembered that a computer simulation is only a *formal structure* that is taken into the laboratory:

> [A] simulation model is not reality and should not be expected to mirror it. Inevitably, the model will include some simplifying assumptions that are at variance with reality.[166]

The best thåt a simulation can offer is the opportunity to explore the consequences of that formal structure.[167] If the results of the simulation foster confidence in the model's validity, then the referent elements and relationships in the real world can be examined to determine whether they are in fact as crucial as they appear in the model. Because simulations are built from identifiable patterns and regularities identified in the real world systems being replicated, areas such as law, where patterns, if existent, are often difficult to define,[168] may not be as susceptible to simulation techniques.[169]

The Institute for Defense Analyses advocated that these management science techniques be applied to the analysis of crime and the overall criminal justice system in its report to the President's Commission on Law Enforcement and Administration of Justice.[170] The Report stressed the need to compile data on *projected* outcomes of decisions taken to change aspects of the criminal justice process. Controlled experimentation, applied to actual operations, would be the most direct method for discerning the impact of proposed actions. However, this

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It may be possible to construct many different models of one reference system: the model chosen will depend on the goals of the simulation, and these goals may in turn be determined by the biases of the simulator. *See* Stogdill, *Introduction: The Student and Model Building,* in THE PROCESS OF MODEL BUILDING IN THE BEHAVIORAL SCIENCES 3, 6 (R. Stogdill ed. 1970).

165. *See* Comment, *supra* note 164, at 713-14.

166. Dutton & Briggs, *Simulation Model Construction,* in J. DUTTON & W. STARBUCK, COMPUTER SIMULATION OF HUMAN BEHAVIOR 103, 122 (1970).

167. Fleisher, *The Uses of Simulation,* in COMPUTER METHODS IN THE ANALYSIS OF LARGE-SCALE SOCIAL SYSTEMS 145 (J. Beshers ed. 1964).

168. *See* Cowan, *Decision Theory in Law, Science and Technology,* 17 RUTGERS L. REV. 499-510 (1963).

169. *See generally* Boyd, *Law in Computers and Computers in Law: A Lawyer's View of the State of the Art,* 14 ARIZ. L. REV. 267, 298-310 (1972).

170. TASK FORCE REPORT: SCIENCE AND TECHNOLOGY, *supra* note 8, at 37.

is often neither feasible nor appropriate. Because of their sensitivity, normal operations may not be amenable to an interventionist strategy.[171] As a workable alternative, the Institute urged that a mathematical model of the criminal justice system be formulated to explore the relationships among the various parts.[172]

The *case flow model* of criminal justice administrative processes and resource allocation is the most accessible and most frequently cited model. It is the class of efficiency models that has attracted much public attention and a large share of research expenditures.[173] The model represents a straight-forward application of management science techniques. It is most easily understood in diagrammatic form, as represented in Figure One.[174]

JUSSIM[175] is an example of such a processing model that is currently operational.[176] It represents the most highly developed and most

171. For discussions of the use of experimentation in legal processes, see Campbell, *Legal Reforms as Experiments,* 23 J. LEGAL ED. 217 (1970); Zeisel, *Reflections on Experimental Techniques in the Law,* 2 J. LEGAL STUDIES 107 (1973); Zimring, *Measuring the Impact of Pretrial Diversion from the Criminal Justice System,* 41 U. CHI. L. REV. 224, 235-41 (1974).

172. TASK FORCE REPORT: SCIENCE AND TECHNOLOGY, *supra* note 8, at 54. One of the earliest such models was of the District of Columbia Court system. *See* Navarro & Taylor, *Data Analyses and Simulation of Court System in the District of Columbia for the Processing of Felony Defendants,* in TASK FORCE REPORT: SCIENCE AND TECHNOLOGY at 199. *See also* Navarro & Taylor, *An Application of Systems Analysis to Aid in the Efficient Administration of Justice,* 51 JUDICATURE 47 (1967). More recent examples of systems analysis applied to court systems include: SYSTEMS STUDY IN COURT DELAY (Notre Dame University, Law School and College of Engineering, 1972, in 4 vols.) (prepared for LEAA); R. HANN, DECISION MAKING IN THE CANADIAN CRIMINAL COURT SYSTEM: A SYSTEMS ANALYSIS (1973) (this study is critiqued at West, Book Review, 32 U. TORONTO FACULTY OF L. REV. 191 (1974); A SYSTEM STUDY OF PORTLAND, OREGON, FOURTH JUDICIAL DISTRICT (1972) (conducted by the Court Studies Division of the National College of the State Judiciary); ECONOMIC DEVELOPMENT COUNCIL OF THE CITY OF NEW YORK, INC., COST/SAVING ANALYSIS OF ADMINISTRATIVE IMPROVEMENTS IN THE NEW YORK CITY CRIMINAL COURT (1973).

173. Gardiner, *Research Models in Law Enforcement and Criminal Justice,* 6 LAW & SOC'Y REV. 223-24 (1971).

174. CHALLENGE OF CRIME IN A FREE SOCIETY at 590-91.

175. *See* Blumstein & Larson, *Models of a Total Criminal Justice System,* 17 OPERATIONS RESEARCH 199 (1969) (reprinted in SYSTEMS APPROACH AND THE CITY 207 (M. Mesarovic ed. 1972)). The case flow model is not the only type of model that has been developed. Professor Blumstein has also designed a model that enables the decision-maker to plot the "crime career" of a defendant who first enters the system. Based on the imputs of the defendant's age and type of crime, this model generates a criminal career profile that indicates the kinds of crimes for which the defendant is likely to be re-arrested in the future. *Id.* at 217.

Another highly technical model, applied to the flow of criminal cases in the U.S. District Court for the District of Columbia, was developed by Professor John H. Reed in his study THE APPLICATION OF OPERATIONS RESEARCH TO COURT DELAY (1973).

176. The JUSSIM model is currently being used, in one form or another, in the following locations: Allegheny County (Pittsburgh), Pennsylvania, Alaska (corrections model), Denver, Colorado, California, Vermont, Delaware, Maryland and Washington,

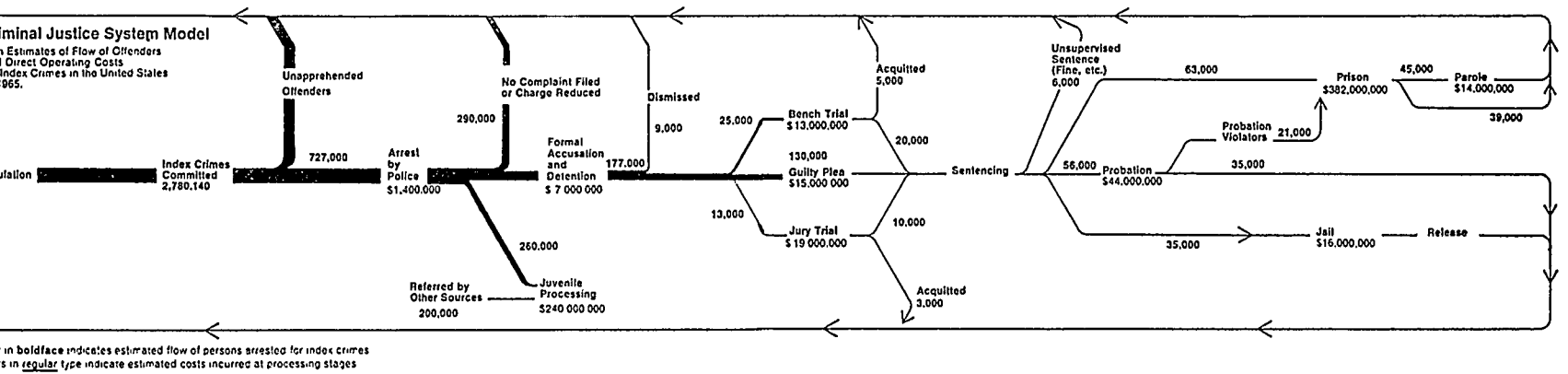
iminal Justice System Model
Estimates of Flow of Offenders
Direct Operating Costs
ndex Crimes in the United States
965.
ulation
Index Crimes Committed 2,780,140
Unapprehended Offenders
727,000
Arrest by Police $1,400,000
290,000
No Complaint Filed or Charge Reduced
Formal Accusation and Detention $ 7 000 000
177,000
Dismissed
9,000
25,000
Bench Trial $13,000,000
130,000
Guilty Plea $15,000 000
13,000
Jury Trial $ 19 000,000
Acquitted 5,000
20,000
10,000
Acquitted 3,000
Sentencing
Unsupervised Sentence (Fine, etc.) 6,000
63,000
Prison $382,000,000
45,000
Parole $14,000,000
39,000
Probation Violators
21,000
56,000
Probation $44,000,000
35,000
35,000
Jail $16,000,000
Release
260,000
Referred by Other Sources
200,000
Juvenile Processing $240 000 000
in boldface indicates estimated flow of persons arrested for index crimes
s in regular type indicate estimated costs incurred at processing stages

Figure One

widely implemented use of operations research in the criminal justice field.

Like the diagram, JUSSIM's structure is relatively easy to understand. JUSSIM is designed to be an "interactive computer program"[177] that represent a flow of "units" (translated "crimes," "arrestees," "people") through the criminal justice agencies. The model indicates the amount of resources used by these "units" on the basis of administrative cost incurred per unit of workload at each processing stage.[178]

JUSSIM operates on the assumption that there is a "downstream flow" of cases from reported crimes to corrections. As these cases are "handled" they are either passed on to the next stage or diverted from the process: "the flow through any stage is a subset of the flow at a previous stage."[179] By simulation, JUSSIM alters the flow by enabling

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D.C. Louisiana has adapted JUSSIM for use in its Family Planning Program. Lecture by Professor Alfred Blumstein, S.U.N.Y. at Buffalo, April 9, 1975. Perhaps the most ambitious description of a planning agency's use of JUSSIM and of its efforts to develop a data base for a quantitative description of a county criminal justice system can be found in a recent report prepared by the Metropolitan Washington Council of Governments, A Criminal Justice Planning Model for Prince George's County, Maryland, June 1975 (available from the Maryland Governor's Commission on Law Enforcement and the Administration of Justice, Cockeysville, Maryland).

177. JUSSIM's designers have stressed the importance of the interactive nature of the model which makes it easily accessible to those not technically trained. This feature allows a criminal justice planner to sit at a computer terminal in his office and change the system represented in the model, rapidly observe the implications of the changes and then immediately make subsequent changes based on this newly acquired data. The model makes all the technical mathematical translation and computations for the planner. Belkin, Blumstein, Glass & Lettre, Jussim, An Interactive Computer Program and its Uses in Criminal Justice Planning, School of Urban and Public Affairs, Carnegie-Mellon Universtiy, Reprint No. 89, 467, 468 (1972). For a critique of systems designers who try to provide managers with very easy access to their system and assure them they need to know nothing about it, see Ackoff, *Management Misinformation Systems,* 14 MANAGEMENT SCI. B-147, B-151-52 (1967).

178. For example, formulas programmed into JUSSIM enable the model to calculate:

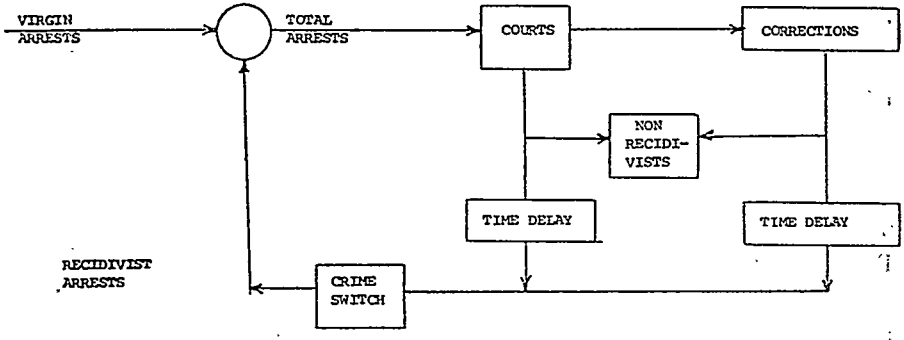
(1) the number of days of judge time required for dealing with a particular type of crime;
(2) the number of judges required for this type of crime, and
(3) the cost of judgeships in the particular court system under study.

JUSSIM can then multiply the number of defendants in a certain crime category (determined on a yearly basis) by the percentage that eventually are channeled off to trial. Based on experience that shows that judges normally devote a certain amount of time to cases in this particular crime category, the number of judge-days required to adjudicate these cases can then be calculated and, by summation, total annual costs for a particular crime type (in terms of *judicial* costs) can then be calculated. Prosecution, police, corrections and other supportive costs can be programmed into the model as well. Blumstein & Larson, *supra* note 175, at 202-07.

179. Blumstein, *Systems Analysis of Crime Control and the Criminal Justice System, supra* note 154, at 254. "Branching ratios" represent percentages of the total case flow that are diverted from the system at various stages: of those defendants accused of a certain crime, some will be released prior to booking; of those remaining some will be released prior to trial, some will plead guilty, and so on.

the user to make changes at certain points in the process. The model indicates the concomitant changes generated at other points in the system downstream from where the change is made and the resources required to accommodate these changes.

An extension of JUSSIM attempts to calculate the future consequences of programs that might affect either the probability or rearrest or the amount of time between release and rearrest. JUSSIM II was developed to incorporate the necessary feedback flow paths into the model,[180] as represented in Figure Two.



Basic Feedback Model

Figure Two

This model:

(1) associates an average time until rearrest with each of the feedback flow paths ("time delay");

(2) by applying probability theory, it specifies the new offense for which a recidivist is likely to be arrested ("crime switch" matrix);

(3) it accommodates the input of first-time or "virgin" arrests as well.

180. Diagram is found at Blumstein & Stafford, Application of the JUSSIM Model to a Juvenile Justice System, Computer Applications in the Juvenile Justice System, Proceedings, National Council of Juvenile Court Judges, 60, 74 (December 1973). *See also* Belkin, Blumstein & Glass, JUSSIM II, An Interactive Feedback Model for Criminal Justice Planning, Urban Systems Institute Report (School of Urban and Public Affairs, Carnegie-Mellon University, June 1973); Belkin, Blumstein & Glass, *Recidivism as a Feedback Process: Analytical Model and Empirical Validation,* 1 J. CRIM. JUSTICE 7 (1973); Blumstein, *Management Science to Aid the Manager: An Example from the Criminal Justice System,* 15 SLOAN MANAGEMENT REV. 35, 44-47 (1973).

Long-run impacts of programs aimed at reducing recidivism are of fundamental concern for future planning.[181] The addition of feedback capability to the basic linear JUSSIM model was intended to enable criminal justice planners to assess the impact of proposed policies on future patterns of recidivism.

It should be remembered that the results of the simulation do not *prove* that system dysfunctions identified in the model (or other changes generated in the course of modelling) reflect the actual workings of the criminal justice processes. The simulator can only suggest that certain areas should be more closely examined as possible sources of delay, etc. Nor does the simulation mandate remedies if a problem is identified. The simulation can only increase the amount of information available to the decision-maker responsible for dealing with systemic problems.[182]

VI. Critique of JUSSIM

A critique of JUSSIM's contributions to decision-making should address two premises underlying this formal model. First, as with PROMIS and computerized judicial administration, JUSSIM is primarily concerned with gauging the performance of the criminal justice system in terms of optimal resource allocation. Second, the model endeavors to adhere to standards of scientific objectivity in its quantitative descriptions of relationships within the criminal justice system. This section will consider whether efficiency and a formal model's "objectivity" should be the dominant criteria structuring the choices available to criminal justice planners and policy-makers.

As in related systems approaches to dealing with social phenomena,[183] JUSSIM operates on the assumption that social rationality can

181. This problem of future planning is addressed in Sigurdson, Carter & McEachern, *Methodological Impediments to Comprehensive Criminal Justice Planning*, 9 Criminology 248 (1971). The Social Science Research Institute at the University of Southern California has been involved in efforts closely parallel to Professor Blumstein's which are designated as the "systems rate approach." *See also* Carter, Dightman & Klein, *The System Rate Approach to Description and Evaluation of Criminal Justice Systems*, 11 Criminology 462 (1974); Klein, Kobrin, McEachern & Sigurdson, *System Rates: An Approach to Comprehensive Criminal Justice Planning*, 17 Crime and Delin. 355 (1971).

182. *But see* Professor Laurence Tribe's discussion of the phenomenon that quantitative decision-making techniques are likely to bias conclusions toward considerations they are most capable of incorporating. Tribe, *Trial By Mathematics: Precision and Ritual in the Legal Process*, 84 Harv. L. Rev. 1329, 1361-65 (1971).

The controversy of whether computer models should serve in an objective or adversarial capacity is treated at McCarty, Book Review, 7 Stan. J. Int'l Studies 154, 160 n.35 & accompanying text (1973).

183. These approaches are often classified under the general heading of "policy science."

be reduced "to the managerial goal of efficient resource deployment."[184] While it may be both a rational and socially desirable goal to use computers to allocate resources, the allocation criteria may not be free from prejudice and may be detrimental to society in the long run. Given a narrow view of social rationality, the "correct" decision or response becomes essentially a question of efficient administration. The criminal justice system is seen as merely a processing machine that is generating outcomes.[185] As Professor Lawrence Tribe has recognized, "[s]uch 'end-result' theories have great appeal, for the notion of maximizing some desired end may seem the very essence of rationality."[186] But in the course of focusing on ends, the significance of *procedure as such* becomes denigrated. The problem becomes that of *"reducing entire problems to terms that misstate their underlying structure,* typically collapsing into the task of maximizing some simple quantity, an

184. Tribe, *Policy Science: Analysis or Ideology?,* 2 PHILOSOPHY & PUB. AFFAIRS 66, 69 n.5 (1972).

185. This aspect of JUSSIM, as well as its other features, has been more extensively critiqued at Reich, *Operations Research and Criminal Justice,* 22 J. PUB. L. 357 (1973). Mr. Reich's critique focuses on two basic aspects of JUSSIM. First, he objects to JUSSIM's incorporation of past patterns into its mathematical formulas that are to serve as a guide to the future:

> [A] system that turns to OR is probably already deeply in trouble, and its branching ratios and work loads are likely to be a source of a great deal of discontent. Rather than the past supplying a norm of what it means to "handle" the case flow, the past is probably a better guide for what it means *not* to handle the case flow.

Id. at 375. Second, Mr. Reich finds that JUSSIM fails to model reality accurately. In fact, Mr. Reich claims that JUSSIM offers such a distorted view of reality as to be of little value to the actors in the criminal justice system. For example, since the model assumes a single direction of causation, a "downstream flow," it cannot make such predictions as the impact that an increased number of jury trials might have on the propensity of prosecutors to engage in plea-bargaining. In addition, the model draws artificial boundaries around the criminal justice system, limiting its focus to the administrative costs incurred by the most formal institutions in the criminal justice area. *Id.* at 378-80. According to Mr. Reich, JUSSIM can thus be of little practical value since it fails to reflect the dynamism and inherent instability of the real world system. *Id.* at 375-78.

Professor Blumstein has acknowledged some of these limitations. He has observed that at present it is technically unfeasible to build in such capabilities as predicting the upstream effect of downstream changes. He has suggested that the model's limitations be recognized and that JUSSIM be applied simply to pinpoint *possible* problem areas. These areas can then be more carefully scrutinzed to determine if in fact they are the source of systemic dysfunction. Interview with Professor Alfred Blumstein, S.U.N.Y. at Buffalo, April 9, 1975.

Perhaps the real danger is not that JUSSIM over-simplifies reality, but rather that the model does *in fact,* if not in conception, mirror reality: that our criminal justice institutions have become mere processing machines into which defendants are fed and from which dispositions are generated. *See* notes 1-9 *supra. See generally* D. HOLT, THE JUSTICE MACHINE (1972); MASS PRODUCTION JUSTICE AND THE CONSTITUTIONAL IDEAL (C. Whitebread ed. 1970).

186. Tribe, *Policy Science, supra* note 184, at 79.

enterprise whose ordering principle is not one of maximization at all."[187] This form of reduction is particularly attractive to the program planner since it is likely to streamline the simulation model, to give greater elegance to its formal structure.

While management information systems such as PROMIS enable an administrator to regulate individual or even a series of operations of a process, the use of a formal model such as JUSSIM allows an administrator and his/her planning staff to extend their control, theoretically, over the *entire* process. At least modelling may create the impression that a decision-maker can exercise control over an entire process from a single vantage point. Constructing a formal model of an entire process or system thus becomes a logical extension for planners who wish to rationally manipulate all the elements of an environment.[188]

A thorough treatment of the social and philosophical implications of the use of formal, scientific models to structure decision-making is not within the scope of this comment.[189] However, these concerns must be addressed at least briefly since formal modelling represents one of the most important aspects of the systems approach.

Formal computer models such as JUSSIM attempt to put social and administrative activities on a scientific basis. The model's claims to "objectivity" are derived from its rigorous descriptions of the criminal justice system. However, there is a tendency to proceed from these descriptions to an evaluation of the JUSSIM-generated data which bases its claims to objectivity on the precision of the descriptions. This approach is appealing, since it establishes a definite evaluative method based on whatever relationships are found among gathered data. The

187. *Id.* at 97 (emphasis in original).

188. *See, e.g.,* BRIEFING SERIES No. 10, *supra* note 84, at 6, where the benefits of modeling are extolled:

> [R]esearchers will be able to construct a "model" of the prosecutorial process; that is, through studying PROMIS data, they will express in mathematical and logical terms the operations and various "cause-and-effect" relationships within the prosecutor's office. With such a mathematical model, research personnel simulate real-life conditions and, through computer analysis, investigate the effect of certain policy changes on overall office effectiveness.

189. Essential elements of this problem have been treated thoroughly by Professor Laurence Tribe in his stimulating critique of the tendency of economic and policy science models and analyses to emphasize end results to the exclusion of process. In a progression of articles, Professor Tribe reflects on the implications of concepts of "instrumental (means-end) rationality" for decision-making in a technological context. *See* Tribe, *Trial by Mathematics: Precision and Ritual in the Legal Process,* 84 HARV. L. REV. 1329 (1971); Tribe, *Policy Science: Analysis or Ideology?,* 2 PHILOSOPHY & PUB. AFFAIRS 66 (1972); Tribe, *Technology Assessment and the Fourth Discontinuity: The Limits of Instrumental Rationality,* 46 S. CAL. L. REV. 617 (1974). *See generally* L. TRIBE, CHANNELING TECHNOLOGY THROUGH LAW (1972).

model can assign numerical or other rating values to categories in the criminal justice process which would lack this stability in a real-life situation. By fixing the criminal justice process momentarily in a steady-state simulation model, the management scientist provides each component with a statistical value and ensures its theoretical manipulatability.

Yet there is an important gap between the descriptive model and the way that the decision-makers (prosecutors, judges and planners) evaluate and interpret the model's data. One must always ask whether a formal model provides the basis for its own data interpretation or whether the conclusions are being superimposed on the model. That is, one should seek to determine whether the formal model is predisposed through its categories to structure the situation presented to it for the sake of a previously determined desirable outcome. For JUSSIM the desirable outcome is defined as efficient resource allocation, which is seen as the equivalent of improving the quality of justice. But in its operation JUSSIM has suppressed, or at the least designated as "constraints on the model," less easily defined considerations such as due process and the nature of the substantive law, which are of even greater importance to an appreciation of the quality of justice. Thus, even if the interpretations of the data are all closely related to the model's descriptions, it is still likely that the choices the model suggests are influenced by widely accepted (and consequently, inobtrusive) social, economic or political judgments (such as efficiency as a positive value) that have been incorporated into the model's mathematical formulas.

The model does not exist in a judgmental vacuum, untainted by the attitudes which exist outside it. A truly useful model must do more than provide labels for a circular system of categories within it. Originators and implementors of a useful model must also anticipate the way in which its data will be read and construct a model that will acknowledge responsibility for those interpretations. If the categories are to mean anything to us, they must be related to something other than statistical patterns. In the end, they must be returned to the intangible processes of *human* decision-making which guide the administration of our criminal justice institutions. It is true that the intuitive processes of human decision-making are difficult to define in mathematical terms. Still, this does not relieve the management scientist of the responsibility of attempting to deal with these intuitive processes in the formal model. If a mathematical model is unable to incorporate these considerations, then the model must acknowledge its limitations,

and, if possible, *that acknowledgement should be built into the model.*

It is particularly important that JUSSIM acknowledge its limitations since it has been undertaken with the expectation of changing the criminal justice system.[190] To date, it has been applied in a very limited context, primarily by criminal justice planners in some of the LEAA funded State Planning Agencies.[191] Its relevance is currently limited to a mathematical exploration of categories within the criminal justice system. In order to be formulated at all, it has had to suppress the activating force behind the entire system—the human decision-making of police, prosecutors, judges and penal officers.

Moreover, when users approach JUSSIM as a scientific-objective tool they fail to relate the model directly to its real goal, to the changing of the criminal justice system. A model that is implemented for the purpose of suggesting change can no longer be classified as neutral or objective. Since JUSSIM is essentially an efficiency model, the range of available options that it presents to a decision-maker must necessarily be limited to the categories that it can generate. Such contributions can hardly be termed "objective" or neutral. JUSSIM's users should recognize the tension that exists between the claim that JUSSIM is scientific-

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190. Recent literature has been more candid about some of the limitations of JUSSIM and the systems approach:

> The danger with this approach is that analysts, as well as users of these analyses, may refuse to acknowledge, or overlook, the assumptions and caveats and examine only the conclusions of such an approach. The result will probably be either blind acceptance of the conclusions or total rejection, for reasons irrelevant to the original assumptions.

BLUMSTEIN, CASSIDY & HOPKINSON, SYSTEMS ANALYSIS AND THE CANADIAN CRIMINAL JUSTICE SYSTEM 2 (CANJUS Project Report No. 14, 1974) (CANJUS is the acronym for a project undertaken by the Ministry of the Solicitor General of Canada in which a variation of JUSSIM is being used to develop a comprehensive model of the Canadian criminal justice system). *See generally* CASSIDY, A SYSTEMS APPROACH TO PLANNING AND EVALUATION IN CRIMINAL JUSTICE SYSTEMS (CANJUS Project Report No. 18, 1974); CASSIDY, SIMULATION OF SOCIAL SYSTEMS: PRODUCT OR PROCESS (Statistics Division Report No. 12, 1974), Ministry of the Solicitor General, Gov't of Canada.

At the same time that management scientists are acknowledging the limits of this approach, there is a danger that lawyers may leap into the field with enthusiasm that is not tempered by the lawyer's normally critical eye. The contributions to policy-making that a lawyer can make, in contrast to those of the engineer or management scientist, have been discussed at Ackerman & Sawyer, *The Uncertain Search for Environmental Policy: Scientific Factfinding and Rational Decisionmaking Along the Delaware River,* 120 U. PA. L. REV. 419, 496-97 (1972). In particular, the lawyer is well-trained to assess the policy implications of the expert information generated by the management scientist's model. The lawyer is in a position to expose the uncertainties impinging on the accuracy of the model's predictions, an obligation which the management scientist, who has a vested interest in the model's prediction capabilities, may ignore or avoid in emphasizing the model's successes.

191. Lecture by Professor Alfred Blumstein, State University of New York at Buffalo, April 9, 1975.

objective in nature, thus implying some sort of value-free status, and the adoption of this efficiency model as an instrument of change. It simply cannot be maintained with consistency that JUSSIM's "scientifically-generated" data are "objective" inputs to policy formulation and, at the same time, be claimed that subsequent decisions to implement changes are wholly external to the model.

A formal model is designed to eliminate evaluations based on impressions, hasty judgments and biased thinking. But in order to keep its formalism secure from subjectivism, it must also maintain a distance from both its origin (human decision) and its end (changing the system). We seriously misjudge the role of the formal model when we choose to ignore what it has necessarily suppressed. We ought to be wary of claims that meaning can arise independently of a mind that imposes it and of claims that meaning is located in a nexus of relationships which can be abstracted outside of a human context. We cannot expect that algorithms and flow charts can or should release us from the responsibility of social and legal interpretation.

CONCLUSION

The press, popular magazines and television have shown how the average citizen, whether s/he lives in a metropolitan area or not, is terrified by grisly reports of street crimes.[192] Crime is more than a national crisis; it is quickly becoming a psychological obsession for many people.[193] The very urgency of this fear predisposes legislators, administrators and government leaders to seek out comprehensive solutions. Since anti-crime programs sponsored by state and federal governments have generally failed to produce the results expected of them, it is likely that more governmental leaders will turn to science as a more promising originator of new programs. Management and computer science may be able to offer the analytic and predictive capabilities needed to probe the weaknesses in current programs. However, as Aldous Huxley has noted, scientific theories are at best a representation of reality, "for the simple reason that science does not even profess to deal with experience as a whole, but only with certain aspects of it in certain contexts."[194] However much we might wish for a causal explanation of crime or recidivism, or a definitive rating system which

192. *See, e.g., The Crime Wave,* TIME, June 30, 1975, at 10-24.
193. *Id.* at 12-13.
194. A. HUXLEY, SCIENCE, LIBERTY AND PEACE 28 (1950). *See generally* R. BOGUSLAW, THE NEW UTOPIANS (1965); J. ELLUL, THE TECHNOLOGICAL SOCIETY (1964).

could point out the individuals most likely to harm the community, we must recall that human behavior has always exceeded any conceptual or empirical framework devised to contain it.

The courts' principal role has always been to administer justice, to oversee *individual* adjudications of guilt or innocence, not to deter crime. The philosophic focus of our principles of criminal justice administration has been on the individual defendant rather than on court machinery or limited state budgets. The constitutional core of these principles is that a person may not be punished, or otherwise deprived of his/her liberty by the Government until it has been proved by an *impartial and deliberate process* that s/he has violated a specific law.[195] As an eminent jurist, from a time less obsessed with speed and efficiency as panaceas for social ills, has warned:[196]

> We secure greater speed, economy and convenience in the administration of the law at the price of fundamental principles of constitutional liberty. That price is too high.
>
> JOHN HARTJE

195. CHALLENGE OF CRIME IN A FREE SOCIETY, *supra* note 1, at 70.

196. People v. Fisher, 249 N.Y. 419, 432, 164 N.E. 336, 341 (1928) (Lehman, J., dissenting).