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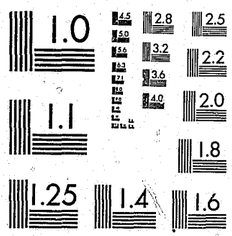

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NEGOTIATED AND ADVERSARIAL RESOLUTION OF CRIMINAL CASES: A CONTINGENCY APPROACH TO COMPARATIVE ANALYSIS

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FINAL REPORT

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PART I

CASE PROCESSING MODELS:
AN EMPIRICAL ASSESSMENT

Introduction

Until the mid-1960's, the study of case processing in the criminal justice system proceeded along rather narrow lines of inquiry. Most authors stressed either the "inefficiency" of criminal case dispositions (e.g., Moley, 1929), or the ways in which such dispositions violated minimal standards of due process (e.g., Dash, 1951). Relatively little attention was paid to the social rather than the strictly legal or administrative aspects of case processing until Sudnow's 1965 article on the prosecution of normal crimes. In subsequent years, authors examined patterns in case disposition in terms of caseload pressures (James, 1971; Downie, 1972), alternate forms of counsel (Sudnow, 1965; Casper, 1972), the social organization of the criminal court (Blumberg, 1967), and participants' incentives to plea bargain a case (Feeley; 1973; Cole, 1970). Often these studies interpreted plea bargaining as something of a con-game (Blumberg, 1967) that victimized the defendant while helping processors manage ever-lengthening criminal dockets (Alschuler, 1968).

Research on case processing, particularly on plea bargaining, continued into the 1970's, and many initial assumptions about plea bargaining were empirically tested. The results led to important reconceptualizations of plea bargaining models. For example, Heumann (1975) and Feeley (1975) challenged the accuracy of the simple case pressure explanation for plea bargaining. Dahlin (1974), Levine (1975), and Battle (1973) questioned the

alleged differences between public vs. private counsel's defense strategies. A series of studies (e.g. Shin, 1973; Uhlman and Walker, 1977; Rhodes, 1978) debunked the notion that defendants who plead guilty for considerations actually receive what they bargained for. Other studies examined the relative weighting of legal and extra-legal variables in case processing decisions (e.g., Hagan, 1974; Bernstein et al., 1977, Hagan and Bernstein, 1979; Eisenstein and Jacob, 1977). Although their results were far from conclusive, they suggested that extra-legal factors (e.g. race, sex, SES, employment status, etc.) played a minor role in processing decisions.

As the number of available case studies and historical analyses increased, it became ever more apparent that case processing was a complex affair that could not simply be labeled a "con-game" nor adequately characterized by a single processing metaphor (Carter, 1974; Utz, 1978; Buckle and Buckle, 1977). Overall, recent research has forced authors both to reexamine early theoretical models for explaining negotiated pleas and to reevaluate conclusions about the practical or political implications of plea bargaining. For example, Rosett and Cressey (1976) have suggested that plea bargaining may actually provide the individualization of treatment necessary for "doing justice" in American criminal courts. Church (1979) has argued that, given certain minimal guarantees, pleas may be negotiated in a substantively fair and non-coercive fashion. Feeley (1979a, 1979b) has challenged the commonplace that plea bargaining is a non-adversarial mode of case disposition. While obviously avoiding the formally adversary trial process, Feeley points out that plea bargaining may yet be adversary in substance. But much of the research relied upon by these authors has taken

the form of case studies of single jurisdictions, and there has been no overall synthesis of the variety of new perspectives that have been generated. In addition, some authors have typically taken models developed in non-court contexts and applied them, without much modification, to criminal courts (e.g., Nagel and Neef, 1976a; 1976b). Such models frequently fail to deal adequately with the complexity of and diversity within case processing. In this report we identify the underlying models which researchers have used to examine case processing empirically. We then reexamine case disposition data already collected in order to assess the adequacy of these basic models and to suggest alternative strategies for case processing analysis.

Current Models of Case Processing

After examining empirical research into case processing, it is apparent that two competing approaches exist. We label one approach the "micro-economic model" and the other the "organizational model."

The Micro-Economic Model. This approach to case processing focuses on the criteria processors consider in deciding whether to negotiate or go to trial. For example, Landes (1971) relies upon explicit micro-economic assumptions to model case processing decisions. Prosecutors and defense attorneys are considered "rational actors" who "maximize their utilities within resource constraints," choosing strategies based upon the probability of conviction at trial, the severity of the crime, the availability and productivity of respective resources, trial vs. settlement costs, and participants' attitude toward risk. Case and defendant characteristics are used to estimate these decision-variables. Landes then constructs a formal model to predict dispositional choice and case outcome in selected federal and state courts.

Empirically, then, the micro-economic model assumes that the characteristics of defendants or their cases will determine how cases are handled. For example, Mather (1974) implicitly uses a micro-economic approach in arguing that case processors follow "rules of thumb" which are cues presented by the cases. Processors use these to route cases to one disposition mode or another. Mather identifies information like the strength of the state's evidence, the seriousness of the charge, and the defendant's past record as indicators that could explain aggregate guilty plea, bench trial, and jury trial rates in Los Angeles Superior (felony) Court.

The Organizational Model. Rather than emphasizing the effects of case and defendant characteristics *per se* on mode of disposition and case outcome, the organization of approach stresses the context and structure within which processing decisions take place. Earlier bureaucratic research and the work of Cole (1970), Feeley (1973), and Carter (1974) laid the groundwork for this approach, and the model is perhaps best represented by Eisenstein and Jacob's (1977) comparative analysis of three urban felony jurisdictions. Their study suggests that the organization of the disposition process and the political environment surrounding the courthouse shape the goals of the "courtroom workgroup" primarily composed of prosecutor, defense attorney and judge. These goals, in turn, affect the workgroup's approach to the disposition and outcome of cases. They found that patterns of dispositional choice and case outcome varied significantly from jurisdiction to jurisdiction in relation to variation in the organizational structures of jurisdictions.

In sum, there are differences in the predicted determinants of case processing between micro-economic and organizational models. The micro-economic model suggests that there is a coherent set of case and defendant characteristics

which determines choice of disposition mode and case outcome, but it does not explicitly consider whether these characteristics will be the same across jurisdictions. This model does not deny, for instance, that strength of the state's evidence might be more or less important within any particular jurisdiction, but it does not tell us to expect such variation. In contrast, the organizational model explicitly hypothesizes that the composition and explanatory power of the combined case and defendant characteristics will vary in relation to the different organizational and environmental features of different jurisdictions. The organizational model, however, fails to specify how the relative importance of individual characteristics will be affected by particular organizational features. It does not consider the relationship between individual characteristics and mode of disposition or case outcome. Eisenstein and Jacob's study demonstrated interjurisdictional variation in case processing, but their empirical analyses lumped case and defendant characteristics together and thus revealed only differences in the combined explanatory power of these characteristics.

Considering the strengths and weaknesses of these two models, it might be valuable to combine them. The resulting model would predict that case processing is a function of defendant and case characteristics, but that the relative importance of particular characteristics is determined by the organizational and environmental structure of a jurisdiction. This model is concerned, therefore, with determining the relationship between particular environmental and organizational features and the importance of various defendant and case characteristics in explaining case processing.

Empirical Examination of the Models

In order to test the adequacy of the two models of case processing discussed above, it is helpful to have a comparative data base drawn from jurisdictions which vary in the structure of their court organizations and environments. Further, the differences in court organization and environment should be reflected in structural variables that can be used in quantitative analysis along with individual-level case file data.

Available comparative data bases contain generally comparable case and defendant data, but lack potentially useful measures of structural variables. This poses no methodological problem for testing the micro-economic model, since it requires only the consistently comparable case file data be available across jurisdictions. But without quantitative structural variables, a direct test of the organizational model is impossible, since it postulates that structural variables systematically affect the combination and relative power of individual characteristics influencing case disposition and outcome. Nonetheless, a qualitative comparison of jurisdictional structure in combination with analysis of case file data might provide impressionistic evidence upon which to judge the adequacy of the organizational model. Fortunately, available qualitative structural data and quantitative case file data enabled us to conduct limited testing of two models.

Our analysis is based on case file data from two existing studies: Eisenstein and Jacob's (1977) three-jurisdiction survey conducted in 1972, and the Georgetown University Law Center's six-jurisdiction "Phase II" study (Miller, McDonald, and Cramer, 1980) conducted in 1977. The former provided extensive description of the organizational and environmental

structure of each of its three jurisdictions, but the latter did not. Fortunately, there is a third study (Jacoby and Mellon, 1979) of presecutorial offices that covered several of the same jurisdictions as the Georgetown study. This provides structural descriptions that can be combined with the Georgetown case level data for two jurisdictions. As a result we have usable case level data and structural descriptions for five different jurisdictions.

Eisenstein and Jacob gathered case file data from samples of all felony defendants processed in three jurisdictions (Baltimore, Chicago, and Detroit) during the first nine months of 1972. In each jurisdiction the sample size was targeted at 1500 defendants, but because of problems with court records and observational techniques the actual samples varied both in size and structure (see Eisenstein and Jacob, 1977: 175-180, for details on sampling procedures). Because preliminary hearing data in two of the three jurisdictions were sampled separately, preliminary hearing cases had to be excluded from our analysis. Extensive and generally comparable information was collected on each defendant in the three jurisdictions. These included standard case processing variables such as defendant's age, race, sex, employment status, charge seriousness, prior record, relation to victim, pretrial release status, prosecutor's evidence, number of witnesses, and type of defense counsel. In addition, the number of defense motions, disposition mode, type of sentence, and trial judge were recorded.

The Georgetown study contains comparable data on most of these variables, although the population of defendants in each jurisdiction was restricted to those with either robbery or burglary as the most

serious charge against them. In each jurisdiction, data were collected on all of those cases closed within 18 months to two years prior to the summer of 1977, or a random sample of cases in those jurisdictions with a large defendant population.

As noted earlier, Eisenstein and Jacob provide elaborate descriptions of the organizational and political environments surrounding each of the three jurisdictions in their study. The Georgetown research included little descriptive material, so we have relied on organizational and environmental information provided by Jacoby and Mellon (1979). Although their information was gathered in 1978, it is generally an accurate description of the court contexts operating from 1975 to 1977. By combining the Georgetown and Jacoby and Mellon studies we were able to develop case file, organizational and environmental information for two jurisdictions (Norfolk and Seattle) roughly comparable to the type provided by Eisenstein and Jacob's material.

We did encounter some limitations in making these two data sets comparable. First, analysis had to be limited to those defendants whose most serious charge was either burglary or robbery. This excluded a good portion of the Eisenstein and Jacob case files, since they collected data from a wider range of initial charges. Second, Eisenstein and Jacob's differential sampling of preliminary hearings made it impossible for us to analyze dismissals since most are likely to take place at or before that point in case processing. As a result, we analyze only quilty pleas, bench trials, and jury trials. Finally, sentencing data were essentially non-comparable across the two studies, and so we have limited our analysis of case outcomes to the gross measure of prison/non-prison sentence.

Testing the Micro-Economic Model. Table I provides the basic distribution of disposition modes and outcomes for a combined sample of burglary and robbery cases surviving dismissal[1] in each of the five jurisdictions. These cases were first analyzed using statistical techniques commonly encountered in micro-economic studies of case processing (Landes, 1971; Bernstein et al., 1977). The results of this analysis with interpretive commentary are detailed in the appendix to this report. Only a summary of those results will appear in the text.

Table I. Disposition patterns and case outcomes for five jurisdictions[a]

	Jurisdiction				
	Baltimore	Chicago	Detroit	Norfolk	Seattle
Guilty pleas	30.7%	77.5%	81.3%	80.0%	87.7%
Bench trials	56.0	16.4	7.3	14.7	4.5
Jury trials	13.2	6.1	11.4	5.3	7.8
(n)	(257)	(213)	(273)	(580)	(666)
No prison	22.7%	28.6%	41.0%	26.7%	26.4%
Prison	77.3	71.4	59.0	73.3	73.6
(n)	(255)	(213)	(268)	(580)	(666)

[a]Dismissals and unresolved cases are excluded.

The logic of the micro-economic model suggests that certain indicators of crime seriousness, defendant status, strength of evidence, and/or probability of conviction are used by case processors to make "rational" decisions about whether to negotiate a defendant's case or take it to trial.

If these factors were, in fact, important components of "rational" decision-making in the five jurisdictions, we might expect their indicators to predict consistently dispositional choice and case outcome across all five jurisdictions.

In order to test the micro-economic model, we chose independent variables from two groups: (1) sociodemographic indicators--sex, race, age, and employment status--and (2) sociolegal indicators--prior arrests, pretrial release status, value of goods taken, amount of evidence, number of witnesses, type of counsel, etc. The dependent variables were case disposition--dichotomized as guilty pleas[2] vs. bench and jury trials--and sentencing outcome--dichotomized as prison and non-prison sentences. As indicated in the appendix, correlations between individual independent variables were found to be consistently low, averaging between -.15 and .15 for Baltimore, Chicago, and Detroit and between -.20 and .20 for Norfolk and Seattle.

Disposition mode and sentencing outcome were then regressed on the independent variables that had the strongest correlations with the dependent variables across the five jurisdictions.[3] In contrast to the implications of the micro-economic model, Table II reveals very little stability across jurisdictions in the composition of independent variables predicting dispositional choice and case outcome.

Table II, here

With regard to dispositional choice, presence of a confession (CONFESSION) and physical evidence (EVIDENCE) were the only indicators included in a majority of the five jurisdictions' regression equations. And one of these (CONFESSION) has a somewhat tautological relationship with guilty

Table II. Dispositional choice and case outcome[a] regressed on best predictors

Independent Variables[b]	Jurisdiction: Baltimore b	Baltimore β	Baltimore se	Chicago b	Chicago β	Chicago se	Detroit b	Detroit β	Detroit se	Norfolk b	Norfolk β	Norfolk se	Seattle b	Seattle β	Seattle se
A. Dispositional Choice															
Age		–[c]			–			–			–		.01	.11	.00
Confession		–			–		-.10	-.11	.06	-.29	-.36	.03	-.14	-.21	.03
Crime		–		.20	.24	.05		–			–			–	
Evidence		–			–		-.12	-.14	.05	-.11	-.11	.04	-.16	-.13	.04
Motions		–		.07	.33	.01		–							
Race		–			–		.16	.15	.07	–				–	
Weapon										.11	.12	.03	.12	.14	.03
Witnesses		–			–			–		.03	.13	.01		–	
R^2		na			.21			.05			.21			.11	
Intercept		na			1.00			1.12			1.26			1.23	
B. Case Outcome															
Arrests		–			–		.05	.28	.01	.02	.11	.01		–	
Bail	.18	.20	.06	.15	.17	.06		–		.19	.21	.04	.20	.21	.04
Confession		–			–			–		-.11	-.12	.04		–	
Crime		–		.19	.21	.06	.17	.17	.07		–		.20	.19	.05
Education											–		-.05	-.10	.02
Employment		–			–			–		.13	.14	.04		–	
Evidence	.10	.12	.06		–			–			–			–	
Weapon		–			–			–		.18	.19	.04		–	
Witnesses	.03	.11	.02		–			–		-.03	-.11	.01		–	
R^2		.06			.07			.08			.19			.10	
Intercept		.50			.53			.40			.34			.75	

[a]Description and coding for the dependent variables are as follows: Dispositional choice: 1 = guilty plea, 2 = bench or jury trial; Case outcome: 0 = no prison, 1 = prison.

[b]Description and coding for the independent variables are as follows: Age: 18 years - high; Arrests: # of prior arrests; Bail: 0 = pretrial release, 1 = no pretrial release; Confession: 0 = no, 1 = yes; Crime: 0 = burglary and lesser robbery, 1 = armed robbery for Baltimore, Chicago, and Detroit, 0 = minor burglary, 1 = major burglary, robbery, and armed robbery for Norfolk and Seattle; Education (for Norfolk and Seattle only): 0 = 1-4 years, 1 = 5-8 years, 2 = 9-11 years, 3 = 12 years, 4 = 12+ years; Employment: 0 = full-time, 1 = part-time or unemployed; Evidence (was their physical evidence?): 0 = no, 1 = yes; Motions: # of defense motions for Baltimore, Chicago, and Detroit only; Race: 0 = white, 1 = nonwhite; Weapon (was there a weapon used in the crime?): 0 = no, 1 = yes for Norfolk and Seattle only; Witnesses: 0-6 = actual #, 7 = seven or more.

[c]There was no significant regression equation for dispositional choice in Baltimore. A dash (-) means that the variable indicated did not merit inclusion in that equation. A blank space means that the variable indicated did not exist for that jurisdiction.

plea dispositions. The use of a weapon (WEAPON) in the crime was a significant predictor of dispositional choice in Norfolk and Seattle, but weapons data were either not comparable or unavailable for Baltimore, Chicago, and Detroit, making it difficult to assess predictive stability across a broader range of jurisdictions.

The only consistent predictors of case outcome were pretrial release status (BAIL) and seriousness of the crime committed (CRIME). While the relationship between crime seriousness and prison sentence is not unexpected, the effect of pretrial status on sentence is problematic. One of two interpretations is possible, both consistent with the micro-economic model. First, it may be that case processors' criteria for determining pretrial release standards are related to their criteria for determining whether or not a criminal should be sentenced to prison. Second, it may be that the ability to gain pretrial release is a good indicator of the defendant's social status and resources, thus affecting his/her chances at trial and the subsequent probability of receiving a prison sentence. Either of these explanations, and particularly the latter, has disturbing implications for due process and equality before the law in the four jurisdictions where BAIL is a significant predictor of case outcome.

On the whole, the limited support for the micro-economic model suggests the need for a supplemental explanation of dispositional choice and case outcome, an explanation that can account for the variation in composition and explanatory power of the independent variables across jurisdictions. The organizational model provides a potentially useful alternative explanation.

Testing the Organizational Model. Our reading of the organizational literature on case processing indicates at least four themes central to determining patterns of case processing in felony jurisdictions (Eisenstein and Jacob, 1977; Carter, 1974; Neubauer, 1974; Nardulli, 1978, etc.). These themes may be thought of as dimensions for comparing the organizational and environmental structures of several disparate jurisdictions. Control over case work is one of these dimensions. Control refers to: (1) a jurisdiction's freedom from external pressures in case processing, and (2) its internal structures for screening and managing case input. Some jurisdictions are vulnerable to influences from their political environments, while others are more or less able to insulate their work from environmental factors. Jurisdictions may effect internal control over their case work through specialized "boundary-spanning" units (Thompson, 1967) that screen and manage cases while others are variously dependent upon outside agencies (i.e., the police) for initial ordering of their work.

Orientation of sponsoring groups (e.g., the prosecutor's office, the public defender's office, or the felony bench and its impact on incentives to cooperate) is a second dimension. In some jurisdictions, processors are sponsor oriented, that is, their decision-making is primarily influenced by explicit policies of their sponsoring group or by informal pressure from other members of that group. Other jurisdictions are more workgroup oriented. Here processors are primarily incluenced by the responses and expectations of their working partners (the workgroup).

Familiarity among processors and the stability of their interactions provides the third dimension. Familiarity and interaction stability are directly affected by case assignment procedures. Where processors are assigned

on a process (or "zone") basis, they hold a position in a single courtroom with fixed responsibilities for handling a certain phase of processing for all cases. This system is likely to enhance both stability and familiarity. In contrast, where cases are assigned on an integrated (or "one-on-one") basis, processors are responsible for a single case from initial appearance to sentencing, and thus are likely to work with a different set of counterparts on every case. This is likely to decrease the stability of interactions with other processors and perhaps familiarity as well. In some instances, assessment of stability and familiarity is complicated by the fact that different sponsoring groups use different case assignment systems within the same jurisdiction, for example, process assignment for prosecution but integrated assignment for defense. While familiarity among processors is likely to vary directly with the stability of their interactions, familiarity is also influenced by size of the jurisdiction, organization and proximity of office space and the turnover rate among processors. All these factors define the degree of workgroup consensus achieved within individual courtrooms and more broadly, within jurisdictions.

Finally, prosecutorial policies typically exert an impact on the development of consensus. Policies may specify the content of pre-trial negotiations for some crimes, or may isolate certain non-routine, important cases, such as, those involving repeat offenders or white-collar crimes, by assigning them to appropriately experienced divisions in the prosecutor's office. Of course, prosecutorial policy may either reinforce or discourage workgroup consensus, depending upon the content of that policy and competing policies from the other sponsoring organizations. Thus, policy consensus must be considered along with workgroup consensus in assessing the overall potential for consensus within a jurisdiction.

The following are brief, thumbnail sketches of the five jurisdictions studied. They are inserted here to elaborate upon the typology presented below (see Figure I). For more detailed descriptions of the Baltimore, Chicago, and Detroit jurisdictions, see Eisenstein and Jacob (1977), and for the Norfolk and Seattle jurisdictions, see Jacoby and Mellon (1979).

In general, organizational factors contributed to a rather loose structure of case processing in Baltimore. There were no strong incentives for processors to identify with their sponsoring organizations since the structures of the bench, the State's Attorney's office, and the defense bar were highly decentralized. Neither was there much reason for processors to identify with the work of their processing unit, since membership changed frequently and unpredictably. The political climate added an element of instability through politicized elections and staff appointments, and made organizational control of casework quite difficult. The structural factors of case processing seem to have retarded the development of consensus among processors at almost every turn.

Unlike Baltimore's felony courts, the Chicago jurisdiction could be characterized as informally cooperative. Its political environment was relatively controlled and stable, and the courtroom workgroups served to process cases efficiently despite a heavy caseload. Staff assignment to the courtrooms rather than to individual cases seems to have created the processing coherence absent in Baltimore, since it facilitated the development of informal work norms in the absence of centralized policy directives and supervision from sponsoring organizations.

The structural influences on processors in Detroit seem to have reinforced their orientation to sponsoring rather than processing units. Sponsoring organizations were strong, supervision was close, and adversariness was an accepted

practice. But the design of Detroit's criminal process also had an integrating effect on processors' behavior. Cases were well screened, assistant prosecutors and judges worked together for long periods in the same courtrooms, and judges often appointed groups of defense attorneys familiar with court personnel and sympathetic to the judicial philosophies of the appointing judges. Formal policies issued by the monthly judges' conferences and by the prosecuting attorney's office lent consistency to case processing. Overall, case processing in Detroit seems to have been explicitly designed to encourage guided negotiation despite the general tenor of adversariness which characterized processors' interactions.

On the surface, certain structural factors affecting case processing in Norfolk would seem to have created obstacles to consensus over case disposition among processors. But the court handled an enormous caseload (given the small number of personnel involved) primarily through quick and early disposition of cases by informal case screening, the absence of a central defense organization, and the integrated assignment of cases. This was accomplished through a combination of informal policy accommodations, the low visibility of criminal justice decision-making, and the small scale of operations in Norfolk's felony courts.

Negotiated pleas were heavily relied upon to dispose case work in Seattle. The prosecution employed a special charging unit to screen cases entering the system and developed strict sentence reduction policies to limit the negotiative discretion of assistants. Public defense was arranged through an umbrella organization that contracted with private defense counsel and closely monitored their effectiveness in representing indigent defendants. The criminal court bench, responding to the electoral defeat of two judges in 1974 for being

"too lenient" in sentencing convicted felony, reorganized their docketing procedures so that cases were not assigned to trial judges until the day of trial. This eliminated "judge-shopping," and also limited the negotiative alternatives open to prosecution and defense. As a result, negotiation occurred very late in the process (almost always on the day of trial), even though it was officially encouraged by the prosecutor's office. Thus, while policy consensus within components of Seattle's workgroups appears to have been high, their combined effect produced considerable strain on case processing. That bargaining continued with such frequency was primarily the result of the judges' reluctance to sentence felons to extensive prison terms.

Figure I displays how each of the five jurisdictions varied according to the four dimensions outlined above. These dimensions and their various components are likely to have had overlapping effects upon case processing, and some were perhaps more influential than others in different jurisdictions. But their cumulative effect of overall consensus, should indicate several things about case processing.

FIGURE I, here

First, higher overall consensus should have led to a greater reliance on plea bargaining than lower overall consensus, since plea bargaining is a product of the propensity to negotiate, and negotiation is an outgrowth of consensus (Eisenstein and Jacob, 1977). Second, higher overall consensus should have contributed greater predictability to case processing than lower overall consensus, both in terms of dispositional choice and in terms of case outcome. Adversay proceedings contributes considerable uncertainty to case processing, and consensus enables processors to avoid much of this uncertainty (Carter, 1974; Matheny, 1980).

FIGURE I

CLASSIFICATION OF JURISDICTIONS

STRUCTURAL FACTORS	JURISDICTIONS				
	Baltimore	Chicago	Detroit	Norfolk	Seattle
External Influence	vulnerable	insulated	vulnerable	insulated	vulnerable
Internal Control	dependent	dependent	specialized	dependent	specialized
Processor Orientation	neither[a]	workgroup	sponsor	workgroup	sponsor
Case Assignment					
--Judge	process	process	process	process	process
--Prosec.	process	process	process	integrated	process
--Defense	process	process	integrated	integrated	integrated
Workgroup Consensus	low	high	moderate	moderate	low
Policy Consensus	low	low	moderate	high	high
Overall Consensus	very low	high	moderate	high	moderate

[a]Sponsoring organizations were very decentralized in Baltimore, and workgroups were also very unstable. As a result, processors were oriented neither toward their respective sponsoring organizations nor toward their courtroom workgroups. This figure is based upon Matheny, Richards, and Houlden (1981).

Empirically, then, our interpretation of the organizational model indicates that the jurisdictions with higher overall consensus should have relied more heavily on guilty pleas, and vice versa. In addition, greater predictability in case processing should have been revealed in regression equations (assuming they were properly specified) explaining larger amounts of variance (R^2) in dispositional choice and case outcome.

Referring to Table I and Figure I, our first assertaion about the organizational model receives some empirical support. Baltimore, with the lowest overall consensus rating, had by far the fewest guilty pleas. But both Detroit and Seattle (with "moderate" ratings) relied more heavily on guilty pleas than Chicago or Norfolk (with "high" scores). The link between consensus and predictability also deserves only qualified support based upon our analysis in Table II. Baltimore's disposition regression provided no significant equation, and its outcome regression yielded the lowest R^2 among the five jurisdictions analyzed. The Chicago and Norfolk equations registered the highest R^2s (.21) for disposition regressions, but, with regard to outcome regressions, only Norfolk maintained relatively high explanatory power (R^2 = .19). Chicago's outcome equation (R^2 = .07) actually fell below both Detroit (R^2 = .08) and Seattle (R^2 = .10) in explanatory power. Of course, the general impression of the entire analysis is that variation in dispositional choice and case outcome remains rather poorly explained in all the jurisdictions analyzed.

An intriguing empirical question left unasked by the micro-economic model and unaswered by existing organzational analyses is precisely how the composition of case and defendant characteristics changes in relation to variation in the organizational and environmental structures of different jurisdictions. Our analysis, which isolated individual characteristics rather than assessing

only their combined effects (cf., Eisenstein and Jacob, 1977), should have provided an empirical basis for answering this question. However, the weak patterns of individual characteristics and their inconsistent variation across jurisdictions could in no way be related systematically to the structural variation described in Figure I.

Comments and Conclusions

The impasse in our assessment of case processing models points to several important conclusions about continuing research in this area. Our assessment clearly reinforces Eisenstein and Jacob's (1977) observation that the structure and context of case processing influence decisions about dispositional choice and case outcome. While this obviously calls for refinements in the micro-economic approach, the latter's empirical focus on individual predictors requires that such refinements address specifically the ways in which particular structural factors influence the variables determining dispositional choice and case outcome. Put simply, we now know that structural factors influence consensus, and consensus, in turn, influences to some extent the frequency of plea bargaining and the predictability of case processing. In order to answer the "next generation" of questions posed by a combined model of case processing, we need more specific information. For example, does the establishment of case-screening units affect the importance of the defendant's pretrial release status in determining case outcome? Or how do case assignment procedures affect the way a defendant's prior record and/or the strength of evidence in a case influence dispositional choice?

Our inability to answer such questions suggests additional, related points about case processing research to date. First, available case file data suit-

able for comparative analysis does not adequately operationalize structural variables (e.g., workgroup stability) so that they can be statistically related to individual case and defendant variables. We are constrained to assess structural effects on case processing only at the aggregate, jurisdiction-wide level of analysis, even though the relevant variation in processing decisions occurs within jurisdictions at the courtroom level of analysis, a point acknowledged by Eisenstein and Jacob (1977).

Second, the organizational approach is unclear as to what the crucial concept of consensus is really about, and this has methodological implications for the empirical yield of our analysis. Consensus is apparently reflected in agreement about the appropriate disposition of cases. Yet, how is this consensus revealed empirically in the composition of case and defendant characteristics? Part II of this report speculates upon an answer to this question. Our suggestions are intended to reorient both the theory and methodology of case processing research.

PART I

FOOTNOTES

1. Of course, in many criminal jurisdictions, a substantial proportion of cases processed are disposed of by dismissal (or sometimes nolle prosequi) prior to indictment or the filing of an information. Such early dismissal decisions usually remove the least serious or otherwise faulty criminal cases from court dockets. The cases studied here are not to be considered representative of all such cases, but only those surviving early dismissal or guilty plea at preliminary hearing. In many jurisdictions, such as Chicago, for example, a large number of cases are resolved at preliminary hearing. However, the cases studied here still provide an opportunity to examine the decisions of the courtroom workgroup about the cases that remain in the system.

2. We will assume that the bulk of guilty pleas are obtained by plea bargains, although it is impossible to know precisely how many because of variation in record keeping between the two data sets and between jurisdictions within each data set. For example, researchers recorded that 81% of all Seattle cases had a "record of a plea agreement," indicating that a high proportion of the guilty pleas were obtained through an agreement. However, only 46% of the cases in Norfolk had a record of an agreement. It is difficult to know whether the rest were not in response to an agreement (which is highly doubtful), or whether record keepers were lax in recording this particular information. In general it seems reasonable to assume that the bulk

of guilty pleas come from plea agreements (President's Commission on Law Enforcement and Administration of Justice, 1967:9).

3. Multiple regression is often used in analysis of binary dependent variables (Kmenta, 1971). Binary dependent variables can be predicted by (1) other dichotomous independent variables or (2) polytomous independent variables (either ratio or interval). These predictors can be given a substantive interpretation whose logic is identical to that of contingency table analysis. The intercept of the equation is the probability of scoring "1" on the dependent variable (i.e., of going to trial for example) while scoring "0" on all the other predictors. Regression coefficients for each predictor reflect the change in probability of trial expected for each unit change in the value of the predictor, holding constant all other variables in the equation.

PART II

A CONTINGENCY THEORY OF CASE PROCESSING

Introduction

The analysis presented in Part I indicates that the organizational model advances our understanding of case processing beyond that provided by the micro-economic model, but that formidable conceptual and methodological obstacles limit how far either model can go in establishing an empirically-based theory of case processing. Here, we introduce some conceptual refinements to the organizational model through the use of contingency theory (Thompson, 1967). Further, we stress the importance of understanding "normal crimes" (Sudnow, 1965) as a basis for developing new empirical approaches to the study of case processing. Finally, we suggest several ways to modify existing methodologies so that future case processing research can overcome the obstacles currently barring its advance.

Contingency Theory and the Criminal Process

In contingency theory terms, an organization is a structure designed around a "technology" which transforms the organization's input into output in a predictable fashion.[2] As a process for transforming the accused into the acquitted or convicted (and punished) criminal, the adversary process may be considered the formally prescribed "technology" of the criminal courts. As other authors have noted, (Carter, 1974; Dill, 1973; and Nardulli, 1979), it is what Thompson calls an "intensive" technology. An intensive technology is the customized treatment of (typically human) input through a progressive "feedback-and-adjustment" process in which initial

treatment must await expert diagnosis of the input's condition, and subsequent treatments depend on the perceived successes of preceding treatments. Transformation can proceed only on the basis of interchange between the organizational decisionmakers and the input object.

The intensive technology of case processing is complicated by the fact that several organizational decisionmakers with presumably different interests are involved in the defendant's transformation. Most obvious are the roles played by the prosecution and defense. The prosecutor first files charges against the defendant (the initial treatment) that the defense reviews while making a decision about how to respond. The prosecutor assembles evidence in light of the charges and anticipated defense responses, and if this step is successfully completed, proceeds to subsequent processing. The defense also gathers information about the evidence and the likelihood of conviction on stated charges, and devises defense strategies on the basis of this information (e.g., filing pretrial motions). Prosecution and defense monitor both the defendant's case and each other's strategies to determine the appropriateness of their treatment decisions. Thus, criminal cases move through a complex feedback process that ideally culminates in a determination of guilt or innocence at trial, followed by the selection of a form of "appropriate" punishment for those convicted.

Uncertainty in Case Processing

Contingency theory maintains that an organization's viability depends upon its ability to maintain and enhance the predictability of its technology by insulating it from uncertainty.[2] Thompson argues that organizations are designed to perform as "closed systems," and that they are evaluated according to their ability to accomplish the tasks or produce the outcomes specified by the closed system design. However, organizational design frequently

fails to provide for all the external contingencies that can affect organizational operations. These contingencies introduce uncertainty into the organization's work and make it difficult to meet closed-system expectations. When such unforeseen contingencies arise, organizations are forced to operate as "open systems" in their efforts to adapt to these conditions and still perform according to closed-system criteria.

As noted earlier, criminal courts are organizations designed to produce outcomes (an acquitted or convicted defendant and proper sentences for the latter) according to the formally prescribed technology of the adversary process. Yet this closed-system design cannot deal effectively with the uncertainties commonly encountered in case processing. In the following sections, we discuss three types of uncertainty--formal uncertainty, scheduling uncertainty, and evaluative uncertainty--all of which courts are likely to confront in transforming criminal defendants.

Formal Uncertainty in Case Processing. The adversarial trial, although prescribed as the formal "technology" of criminal courts, is a source of considerable uncertainty in case processing. The skepticism built into due process rules and procedures (e.g., the presumption of innocence, restrictive rules of evidence, use of the lay jury, etc.) is intended to make case processing unpredictable (Packer, 1968), thus limiting the ability of processors to anticipate the ultimate outcome of any given criminal case. In addition, the formally combative roles of these processors contradicts the intensive nature of their work. Generally, decisionmaking in intensive technologies requires expert participation, and when that participation involves more than one expert, they must work in close cooperation to make effective decisions. But adversarial relations between case processing

"experts" (i.e., prosecution and defense) inhibit cooperation because such relations imply that processors have mutually exclusive interests and therefore nothing to gain from cooperation.

Scheduling Uncertainty in Case Processing. For an organization to produce a predictable output, it must maintain some control over the nature of the input it processes and the pace at which processing proceeds. This is often problematic for criminal courts, since their initial work depends on variable input from the police over which they may have little control. This makes it difficult for organizational actors to anticipate the range of criminal cases they confront, or the number of cases processed. These uncertainties are exacerbated by requirements of adversarial decisionmaking (e.g., trial), since adversarial case resolution is time-consuming, expensive in terms of organizational resources, and relatively inflexible because it requires strict adherence to well-specified procedures.

Evaluative Uncertainty in Case Processing. In order for organizations to demonstrate success, their output must meet the demands of the environments they serve as well as the criteria specified in their designs. This is especially difficult for criminal courts, since these demands are abstract and often contradictory. Local governments budget most criminal courts and generally expect consistent and efficient aggregate case flows in return. In contrast, appellate review pressures local courts to adhere to procedural standards on a case-by-case basis without regard for aggregate case flows. This creates uncertainty about which of these demands criminal courts should pursue. The formally prescribed technology of

adversarial trial increases the evaluative uncertainty in case processing. It is time-consuming and "inefficient"; at the same time, it exposes court work to appellate review and the possibility of reversal.

Reducing Uncertainty in Case Processing

Contingency theory suggests that organizations respond to uncertainties by making structural changes. If a given structure is unadaptive, the organization typically modifies or replaces it with a more responsive one. The adversary process is a particularly awkward technology for processing court work, because it exacerbates rather than reduces uncertainties. Thus, we would expect courts to develop alternate means for reducing their uncertainties. The fact that guilty pleas are more common than trials in most U.S. jurisdictions (Miller, McDonald, and Cramer, 1978) suggests that case processors may be substituting an informal technology (negotiation) for the prescribed adversary process, resulting in high rates of non-trial disposition.

Negotiative processing reduces many of the common uncertainties in criminal processing, and thus is an attractive alternative to adversarial strategies. Clearly, a negotiated guilty plea reduces the formal uncertainty of adversarial disposition by avoiding the unpredictability of trial. Through negotiation, processors can control case outcome without having to resort to the unreliable performance of witnesses in open court or the vagaries of jury deliberation. Because negotiation is more flexible and adaptable than adversary processing, it can also reduce scheduling uncertainties. Negotiation can occur at virtually any point in the criminal process, and, over time, settlements may become routinized, thus simplifying the response of case processors to the variety of cases and case flows they encounter.

Finally, negotiated cases solve the evaluative dilemma facing criminal courts by facilitating efficient case processing in accord with the demands of local government, while simultaneously limiting the scope of appellate review.

Negotiative case processing grows out of cooperative pressures in the structure of court work. Processors must make joint decisions, because several processors are involved in each case. Discretionary acts by the prosecution affect the defense's decisions, and vice versa, and both influence and are influenced by subsequent judicial decisions. A decision structure so complex easily overwhelms formal adversary norms, particularly among processors who continue to interact over extended time periods (Eisenstein and Jacob, 1977). These processors establish informal decision-making units within which decision-making roles are cooperative rather than combative. In these units processors can negotiate case outcomes without resorting to trial.

The Role of Normal Crimes

Negotiative processing operates successfully when decision-making among processors produces shared understandings about their case work. These are the basis for what Sudnow (1965) calls "normal crimes," and they guide the discretion exercised by processors when "typical offenses" with "typical features" are encountered. By developing "plea recipes" for normal cases,[3] processors can routinely establish charge and/or sentence adjustments that are calculated to encourage guilty pleas, while satisfying demands that defendants "get their due."

By processing cases as normal crimes, courts partake in "organizational learning" (Cyert and March, 1963). Plea recipes are standard operating

procedures invoked when processors encounter regularities (normal cases) in case input. As a result, case processing becomes more predictable. Essentially, normal cases and plea recipes are the mechanisms of the intensive technology of negotiation, just as pretrial challenges and trial procedures are the mechanisms of adversarial processing. If normal crimes can be reliably identified, the ability to use a more predictable negotiative processing technology increases.

If we combine our understanding of contingency theory and normal crimes with the "four themes" underlying the organizational model discussed in Part I (control over case work, orientation to sponsoring groups, workgroup consensus, and policy consensus), we begin to develop a contextual explanation of why some jurisdictions are more likely to rely on plea bargaining than others. Our theory goes beyond the conventional organizational model by focusing upon the empirical nature of the normal crime. Most organizational researchers follow the micro-economic model's lead in their understanding of the empirical nature of criminal cases. They simply place the micro-economic model within a structural-organizational framework when they analyze case file data quantitatively.

Empirically, this means that organizational and micro-economic researchers assume a linear relationship between individual independent variables (i.e., case and defendant characteristics) and the dependent variables of dispositional choice and case outcome. Organizational and micro-economic researchers usually attempt to validate their models by focusing on the size and significance of regression coefficients and/or the amount of variance in dispositional choice explained by a set of case and defendant characteristics in a regression equation. This assumes, for example, that the more serious a burglary, the more likely a trial disposition, other things being equal.

But the characteristics of a normal crime may not be linearly related to dispositional choice or case outcome. Instead, case normality is a socially defined combination of characterisatics about which processors reach sufficient agreement (consensus) to invoke a standard plea recipe and to dispose of the case short of trial. This means that case and defendant characteristics should distinguish normal from non-normal cases, but, to the extent that normality affects choice of disposition mode, case and defendant characteristics should become predictors of dispositional choice only when mediated by the consensus among processors making that choice. In other words, case normality depends upon joint perceptions of the overall meaning of different composites of characteristics. Single characteristics have no intrinsic meaning outside the context of complementary characteristics forming the composite.

An extremely serious burglary might be considered "normal" (and thus suitable for negotiated disposition) when the burglary's seriousness occurs with other complementary characteristics commonly encountered by processors deciding cases of this type. Here, the entire set of characteristics, including extreme seriousness, fits a profile over which processors have established agreement concerning disposition. By the same token, a relatively minor burglary might present processors with a profile composed of other characteristics "inconsistent" with the case's nonserious quality. Here, processors might find it difficult to achieve consensus on the case and its disposition, thus increasing the likelihood of trial. From a contingency perspective, then, case seriousness, in itself, explains little about dispositional choice. Instead, the internal consistency of case

characteristics--socially defined by processor consensus--explains choice between negotiation and trial.

The internal consistency of characteristics is socially defined, and existing multivariate statistical techniques simply do not capture the notion of the normal case when they "control" for the overlapping effects of several predictor characteristics. If our contingency argument is correct, it should be no surprise that cybernetic analyses typically explain so little variance in dispositional choice and/or fail to identify consistently those characteristics important to determining dispositional choice. Their focus on the independent effects of single characteristics ignores the context of the entire case and its normal or non-normal composition.

If one assumes that normal cases are socially defined by the processors themselves, there is no need to propose a single type of "normal" case consistent across jurisdictions. What qualifies as a "normal" burglary in one jurisdiction may be non-normal in another, even though the discrete characteristics drawn from case file data may seem identical to the outside observer. In fact, the predictors of disposition mode should vary, across jurisdictions, since both the definition of a "normal burglary," and the possibility of processors reaching consensus differs from one jurisdication to another.

From a contingency perspective, the analytical task is to specify empirically the ways in which structural variations affect the probability of achieving consensus in any jurisdiction (linking the organizational model with the establishment of a reliable range of normal crimes), and the ways in which different case and defendant characteristics are sociologically combined to define the content of those normal crimes (linking the micro-

economic model with the content of consensus about normal crimes). This task requires a new methodology for case processing research.

Methodological Suggestions for Future Research

As a basis for making recommendations for future research into case processing, the methodological limitations of conventions research should be catalogued. We have already discussed the fact that analysis under the organizational model is hindered by the lack of quantitatively operationalized organizational environmental variables compatible with case file data. Qualitative descriptions of different jurisdictions' structures can provide insight into case processing, but as our analysis has shown, the complexity of the effects of structure on dispositional choice and case outcome makes it difficult to discern the causal connection between variation in the former and changes in the components of the latter.

Even though a jurisdiction as a whole has a type of structure that is likely to facilitate cooperation (and thus negotiation), there are still likely to be differences in the degree of cooperative relations or level of consensus about a range of normal cases among processing units (e.g., courtrooms) within that jurisdiction. In effect, the range and content of normal cases within a jurisdiction is likely to vary by courtroom. Information about structural variations within as well as between jurisdictions is critical for a contingency analysis (as well as for other organizational perspectives). Unfortunately, analysis of jurisdiction-wide dispositional patterns is likely to obscure important variation in those patterns by overlooking a level of analysis where significant variation occurs.

A second major difficulty involves developing analytic techniques that

will allow analysts to identify normal vs. non-normal cases empirically. We have already noted that conventional multivariate techniques pose problems for anyone interested in the influence of normal cases rather than discrete case or defendant characteristics. The obvious alternative when multivariate methods fail is to respecify the model. This may mean returning to crosstabular analysis, a tedious, time-consuming process which uses data very inefficiently and requires an enormous number of cases not available in existing data sets. Essentially, the substantive problem of "too few trials" becomes a statistical one. In most existing data sets, case samples generate so few dispositions in the trial category that cell totals for case and defendant characteristics are too small for statistical analysis. The analyst is caught between the failure of specification when applying multivariate techniques and shortcomings in the data when using a crosstabular strategy.

Finally, there is the problem of defining empirically what we mean by adversary and negotiative decision-making. Plea bargaining, bench trial, and jury trial may be plausibly arranged on a single dimension of adversariness; with bargaining at the lower limit, jury trial at the upper limit and bench trial somewhere in between. But permitting the formal adversariness of the disposition mode to define its place on the dimension ignores the possibility that one mode may be only ostensibly "adversary," while another may be adversary in substance, if not in form. Particularly illustrative here is the variable interpretation of the bench trial. In some jurisdictions, bench trials are conducted with all the "adversariness" of a jury trial, while in others, they are little more than "slow pleas" (Mather, 1974;

Eisenstein and Jacob, 1977). Further, plea bargaining does not necessarily imply "collusive" dealing. Carter (1974: 20) suggests that ongoing negotiations often engender "bonds of reciprocity" among case processors sufficient to approximate the kind of results adversary proceedings are designed to produce (cf., Rosett and Cressey, 1976). At any rate, the adversarial ranking of disposition mode should be left open to question; subject to empirical examination rather than a priori assumption.

One striking aspect of our findings is that for every jurisdiction except Baltimore, guilty plea rates were consistently high (ranging between 77% and 88% of defendants processed after preliminary hearings).[4] If we can assume that most of these pleas were the result of negotiation, then negotiation is clearly the central feature of decisionmaking in the criminal process. Yet the type of negotiation that occurs there may not be adequately captured in conventional micro-economic models. Negotiation in the micro-economic sense is usually conceptualized as the sort of "strategic negotiation" found in the international relations literature (e.g., Schelling, 1966), or in the literature on labor-management relations (e.g., Perry and Levine, 1976). Strategic negotiation occurs in situations where actors can make predictions about probabilities of outcome, the nature of risks, the nature of utilities, etc., and where the actors share a common definition of these considerations and understand what the other side is taking into account in their deliberations. In other words, negotiation is conceived of as a well articulated mixed strategy game between prosecution and defense (Kapsch, 1971).

But this is not the sort of "negotiation" that contingency theory posits for the criminal process. Case processing is an intensive technology fraught with uncertainties, and these may make it impossible to

play a mixed strategy game. Uncertainties obscure the assessment of outcome and make it difficult to assess risks and to articulate the utilities used to guide choice. The negotiation that takes place between processors is not strategic negotiation over outcomes. Instead, it is negotiation about how processing should proceed in a way that will enable processors on all sides to reduce the uncertainties that they face. Phrased another way, contingency theory posits negotiation as a means of processing that gives processors a viable alternative when rational decisionmaking is impossible (Matheny, 1980).

This approach is similar to the arguments found in the literature on incrementalism in the policy process, where policy makers "muddle through" their agendas because they have no explicit value calculi (Lindblom, 1959; 1965; Widalvsky, 1970). "Muddling through" is another way of describing how decisions come to be made in situations of considerable ambiguity and uncertainty. The basic assertion of the incremental approach is that current decisions are made on the basis of past decisions. The findings of many case studies on plea bargaining suggest that dispositions are guided by the outcome of past negotiations. One often finds reference to the "going rates" for different types of case dispositions. Dispositions are not justified by reference to rational calculation but rather by invoking traditions established through the extended interaction of case processors. Perhaps this is why Heumann (1978) found the socialization of prosecutors, defense attorneys, and judges to be a suitable explanation for the existence of plea bargaining in his research.

Contingency theory redirects theoretical and empirical attention from case outcome and choice of disposition mode per se to the nature of the process by which these decisions are reached. Unlike most existing

analyses that rely on quantitative data, it does not assume a decisionmaking model a priori (i.e., strategic negotiation), but makes the nature of processing itself a critical empirical quesiton. This means that different operationalizations of dependent variables are required if contingency theory is to be adequately researched.

These problems underscore the need for better data on the nature of processing itself (new dependent variables) and for adequate measures of the structural dimensions that affect the character of case processing. Because most available quantitative data are limited to characteristics of individual cases they afford few opportunities for operationalizing and assessing contingency theory concerns. In order to do justice to a contingency approach, different types of data are required: data that are better reflections of the organizational dimensions that should affect processing strategies and that capture relevant variation along these dimensions both within and across criminal jurisdictions.

Dependent Variables. There are several ways of strengthening measures of case processing, even while maintaining analysis at the level of the individual case. At the very least, analysts must be able to differentiate between dispositions obtained through negotiation and those that are not. The current tendency to use guilty pleas as a measure of plea bargains introduces potentially confounding effects into any analysis. Not all guilty pleas are the result of negotiation, and not all trials are evidence of non-negotiated settlements. There are some "on the nose" pleas that are made without bargaining, and there may very well be substantial negotiation underlying trial dispositions (i.e., the "slow plea" nature of bench trials in some jurisdictions; see Mather, 1974).

Researchers also need to develop more sensitive measures of types of negotiation or bargaining. At times, bargains are struck in terms of charge reductions, while at other times bargains are made on the basis of sentence recommendations. This means that strategies for tracing charging patterns through the life of a case need to be developed, and accurate and reliable data on length of sentence is necessary in order to study sentence negotiation. Researchers have begun to gather data on types of plea negotiation, but their efforts are often hampered by the vagaries of official record keeping. For example, the Georgetown study (Miller, McDonald, and Cramer, 1980) attempted to code the type of plea bargaining used to settle cases in the jurisdictions they surveyed (see Appendix). Unfortunately, the amount of missing data for Norfolk made it virtually impossible to use this measure in a meaningful way.

If contingency theory is to be employed in the analysis of case level data, accurate measures of charge reduction from arrest to indictment to disposition are also required in order to identify the "standard" patterns putatively associated with normal crimes. By examining changes in charges during charge bargaining, researchers may be able to gather information about the stage in the criminal process where negotiation is most likely to occur and then relate this information to organizational variation thought to affect the pace and form of negotiation.

Because not all negotiation involves charge bargaining, researchers must also develop strategies for relating sentence agreements to the phenomenon of negotiation. This is especially difficult given the nature of most available case level data. Sentences are recorded at only one point in time (at the end of processing) and provide information about minimum

of days or months of sentence given. This information hides within it an enormous amount of ambiguity about the actual prison time to be served (i.e., is it a split incarceration/probation sentence or straight incarceration; is it for time already served while awaiting trial; is it for all charges or for additional charges not indicated in the conviction). It is almost impossible to identify standard sentences that might represent plea recipes, or to know whether the sentence reflects a prior agreement established through negotiation .

Independent Variables. Obviously, research on case processing needs to move beyond the familiar sociodemographic and sociolegal variables used to predict case disposition or case outcome. Yet it is difficult to do so with available data, even if one wishes to maintain a research focus at the level of the individual case. Research under the micro-economic model could profit from the formulation of variables more directly related to the considerations involved in strategic negotiation (e.g., processor's estimates of the probability of success at trial, measures of opportunity costs, etc.).

Contingency theory concerns would be enhanced by the operationalization of other variables not generally available. One of these is the stability of interactions among case processors. Such information would help in assessing the importance of case assignment procedures in the types and outcomes of negotiations that occur within jurisdictions. Researchers have used the courtroom through which a case is processed as a proxy for a measure of stability (Eisenstein and Jacob, 1977), but this is not an adequate measure. Too often, personnel within a given courtroom change, even when they are ostensibly assigned to that courtroom.

Contingency research also requires an indicator of the impact of prosecutorial policies on plea negotiation that can operate independent of the effects of workgroup stability. This would require developing a measure of deviation from such policies that could be attached to each case in order to determine whether policy prescriptions encourage the development of normal cases (as seems likely in Detroit's use of pretrial conferences) or inhibit their development (as seems likely with Seattle's restrictions on sentence bargaining).

Still, the fact that contingency theory focuses primarily on organizational level variables means that strategies for assessing contingency theory with case level data are quite difficult to devise. There are some alternative methodologies that may avoid some of the limitations necessarily imposed by case file data.

Alternative Strategies for Studying Contingency Perspectives

Case Vignettes. Because the notion of normal cases and plea recipes is central to contingency theory, it is important to devise a research strategy that will allow researchers to see whether they exist, and if so, what form they may take both within and between jurisdictions. A vignette rating methodology may provide this sort of information. Short vignettes of cases with varying characteristics could be generated and processors from different jurisdicitons asked to discuss (1) how they would handle such a case and (2) what they expect their fellow processors to do. Intra-jurisdiction agreement about ratings and strategies could then be used to establish the parameters of normal cases and attendant plea recipes. Inter-jurisdictional comparisons could be related to structural character-

istics, and contrasts made between different organizational contexts in light of contingency theory predictions. Useful initial attempts in this direction have appeared in the literature and seem worth pursuing (Littrell, 1979).

Comparative Observational Research. Although there are an enormous number of case studies of negotiation, the majority are limited to a single jurisdiction and are not guided by an explicit theoretical framework. One way of assessing the value of a contingency perspective would be to observe and interview in several jurisdictions selected on the basis of their structural characteristics discussed in Part I. Such an approach would provide data directly relevant to contingency theory predictions and would offer a better test of that theory than do the case file data analyzed in this report. Also, data drawn from interviews and observation seem particularly well suited to developing typologies of negotiation that can occur within different organizational structures and may shed more light on the processual nature of negotiation than can conventional quantitative data. Comparative work of this sort is already underway in a project being executed by James Eisenstein, Roy Flemming, and Peter Nardulli.

Analysis of Aggregate Data. While most research focuses at the level of the individual case, there are alternative ways of assessing the impact of the structural factors emphasized by contingency theory. The independent variables of greatest interest in contingency theory vary across jurisdiction. This suggests that the jurisdiction rather than the individual case could be useful as the relevant level of analysis in a study of how structural factors are related to rates of disposition or types of outcome.

A large number of criminal jurisdictions across the United States could be sampled, and information gathered about their guilty plea rates, sentencing patterns, case loads, and organizational characteristics. Kathleen Brosi (1979) has conducted preliminary research of this sort, and her lead should be followed as case file data from jurisdictions nationwide become more available.

Conclusion

Our goals in this report have been: (1) to make sense out of existing empirical research on case processing, (2) to diagnose the methodological and conceptual problems of that research, and (3) to suggest methodological improvements which will advance case processing research.

In Part I, we divided existing empirical research into two categories defined, respectively by the micro-economic model and the organizational model of case processing. Using case file and organizational data from five jurisdictions, we assessed the adequacy of the two models through multi-variate analysis. While the two models contribute to our understanding of case processing, we felt that conceptual and methodological limitations of the two models made further understanding impossible.

Part II of this report has attempted to break through those limitations by refining the organizational model through the use of contingency theory. As developed in this report, a contingency theory of case processing focuses on the uncertainty confronting case processors in their decisions about proper disposition and sentencing in criminal cases. The emphasis on uncertainty led us to stress the importance of the development of "normal crimes" as a way of enhancing the consistency and predictability of case processing.

If normal crimes are in fact crucial to understanding case processing, then conventional methodologies are simply inadequate. The remainder of Part II has been devoted to defining the problems of and suggesting alternatives to conventional methodologies. In one form or another, researchers have recently begun to employ each of the alternatives we have suggested, so we can close this report on an optimistic note. We eagerly await a new generation of case processing research.

PART II

FOOTNOTES

1. There are three basic varieties of technology: the long-linked technology used in assembly-line mass production processes; the mediating technology used in organizations which "pool" resources for the purpose of connecting suppliers and consumers; and the intensive technology. In general, organizations employing an intensive technology determine "the selection, combination, and order of application" of elements in the process of transforming input into output on the basis of "feedback" from the input object itself. It is a customized technology (Thompson, 1967: 17).

2. As defined in contingency theory, organizational uncertainty is an organization's inability to bring "system-closure" to its operations and is the product of the following conditions:

(a) inadequate linkage in causal sequence of all variables relevant to the processing of input through the organization;

(b) unpredictable behavior of elements within the organization's environment--elements which vitally affect the organization's operation;

(c) ambiguous standards of evaluation for judging the "quality" of the organization's operations and output vis-a-vis some stated abstract objective; and

(d) incomplete decision-premises surrounding the roles of individual decisionmakers within the organization, such that organizational incentives are incompatible with individual rationality in decisionmaking.

3. Sudnow's "normal crime" concept refers to the sociological (as opposed to legal) process by which cases are identified as typical or atypical and then are disposed of accordingly. By extension, the "normal case" refers to the case input itself and the typicality of a given case's and defendant's characteristics vis-a-vis other case input. A "normal case" has the potential for being processed as a "normal crime."

4. According to Eisenstein and Jacob (1977: 250), bench trials were often "slow pleas" of guilt, arranged before trial. Combining the percentage of bench trials with the percentage of guilty pleas for Baltimore produces a negotiated settlement rate of 87%, comparable to those found in the other jurisdictions.

APPENDIX

This appendix was originally Chapter III, "Data Analysis," of the preliminary draft of this report. It is a step-by-step account of the empirical analysis conducted for this project and is reproduced here for those readers who wish a more detailed treatment of that analysis. Note that tables and figures referred to in this appendix are located at the end of the appendix text and before the footnotes. Arabic numerals are used for appendix tables and figures in order to distinguish them from the Roman-numeral designated tables and figures in the main text of this report.

Patterns in Case Disposition and Outcome: Dependent Variables

Case Disposition. Our initial measure of case disposition patterns is the proportion of cases that are resolved through guilty pleas, bench trials, and jury trials. Tables 1 and 2 present marginal distributions of this variable for the five jurisdictions under study. There is variation in the extent to which cases are routed to these three modes of disposition. Seattle has the highest rate of guilty pleas (88%) followed by Norfolk, Detroit, and Chicago (averaging around 80%). Baltimore's guilty plea rate is substantially lower (31%).[2] Baltimore has the highest proportion of bench trials (56%), followed by Chicago and Norfolk (15-16%), Detroit (7.3%), and Seattle (4.5%). Norfolk, Seattle, and Chicago have the lowest proportions of jury trials (5-8%), while Baltimore and Detroit have slightly more (11-13%). In subsequent multiple regression analyses, we dichotomize this variable as guilty pleas vs. all trials in order to conform with the statistical assumptions of that technique.

Tables 1 and 2, here

Case Outcome. Contingency theory emphasizes the importance of predictable case processing (i.e., certainty of outcome) and suggests that the sentence imposed is part of the plea recipe that develops in order to routinize the processing of normal cases. For this reason, we have included a sentencing measure in this analysis. It is a dichotomous variable referring to whether or not the defendant received a prison sentence. While the nature and length of the sentence might provide more detailed information about case outome, sentencing practices and their coding were widely divergent in the five jurisdictions, leaving the presence or absence of a prison sentence as the only comparable outcome indicator.

It is interesting to note that, despite different patterns of case dispositions across these jurisdictions, approximately the same proportion of defendants received a prison sentence in each. Roughly three quarters of the defendants in all but Detroit (59%) were sentenced to at least some prison time.

Patterns in Case Disposition and Outcome: Independent Variables

For clarity in presentation, we have divided our independent variables into two groups: the sociodemographic characteristics of individual defendants, and the sociolegal characteristics of defendants' cases. The sociolegal variables have been further divided into four clusters: 1) legal status of the defendant, 2) offense characteristics, 3) evidence variables, and 4) case processing variables. This is a common, although somewhat permeable, distinction in the literature (e.g., Bernstein, et.al., 1977),

and makes it easier to compare our analysis to those of others.

Sociodemographic Characteristics of Defendants

The Eisenstein and Jacob study contains four sociodemographic variables which we examined for relationships with case disposition and outcome: sex, race, age, and employment status at time of arrest. In addition to these, education (years completed) was available in the Georgetown data.

The defendants included in this analysis were overwhelmingly male, with women comprising less than 5% of the defendants in every jurisdiction. Their ages averaged between 23 and 24 years. In Norfolk, only 21% of the defendants had managed to graduate from high school, and 28% had never made it past the 8th grade.[3] Defendants were also predominantly nonwhite in every jurisdiction but Seattle. Chicago, Detroit, and Baltimore list 80-90% of their cases as non-white, Norfolk showed 60%, while Seattle had only 29%. Given these sociodemographic characteristics, it is not surprising that most defendants were unemployed at the time of their arrest. At least two-thirds of the defendants in the jurisdictions did not even have part-time jobs.[4]

Sociodemographic Correlates of Case Disposition and Case Outcome

Tables 3 and 4 present the zero-order associations between these sociodemographic variables and case disposition.[5] Case disposition has been dichotomized (0=plea bargaining; 1=jury or bench trials), and negative coefficients indicate characteristics that are associated with guilty pleas. Correlations in the Eisenstein and Jacob data set are consistently small. Those in the Georgetown data are somewhat larger, but still modest. In Norfolk, non-white defendants were somewhat more likely to have their cases disposed of through trial rather than guilty plea, as were those who were slightly older. Older Seattle defendants were also more likely to

to go to trial, as were those with higher levels of educational achievement.

Tables 3 and 4, here

Correlations between sociodemographic variables and case outcome are presented in Tables 5 and 6. Case outcome is a dichotomous variable reflecting whether or not the defendant received a prison sentence (0=no prison sentence; 1=prison sentence). Positive correlation coefficients indicate a higher probability of receiving a prison sentence. Correlations in the Eisenstein and Jacob data set are again small. In Chicago, men seem to have been more likely to receive prison sentences than women, but this single coefficient does not suggest a general pattern. Coefficients are somewhat higher in the Georgetown data. The probability of a prison sentence in Norfolk was somewhat greater for defendants who were male, nonwhite, and/or unemployed. Age increased the probability of receiving a prison sentence in Seattle.

Tables 5 and 6, here

In general, there are few sociodemographic patterns in either case disposition or outcome in these two data sets. Correlations are small, and suggest that sociodemographic variables are not likely to play much of role in multivariate analysis of case processing. This is an important theoretical issue to which we will turn in our discussion in Part II.

Sociolegal Characteristics of Cases

Typically, researchers have examined relationships between case disposition or outcome and a wide variety of sociolegal case characteristics

We have been able to include some of the most common of these in our analysis. Table 1 provides variable names, coding schemes, and marginal response distributions for the sociolegal variables in the Eisenstein and Jacob study. Table 2 provides similar information from the Georgetown data.

Legal Status of the Defendant. The mean number of prior arrests (all arrests for the Eisenstein and Jacob data, only felony arrests for the Georgetown study) for these defendants varied across jurisdictions. Seattle ($\overline{X}$=1.8 arrests) and Norfolk ($\overline{X}$=2.8) differed, and the other jurisdictions ranged from 3 to 4 prior arrests (reflecting the more inclusive measure). These arrest data may be affected by the high proportion of missing cases in Baltimore and Detroit. A defendant's ability to make bail also varied widely. Only 27% of the Baltimore defendants were out on bail prior to disposition of their cases, compared to 37% in Norfolk, 43% in Chicago, and 65% in Seattle.[6]

Offense Characteristics. Nonequivalent questions and coding strategies are something of a problem in the available data on offense characteristics. Tables 1 and 2 present variables that assess: 1) the type of crime represented by the most serious charge in a case, 2) the degree of harm to the victim of the crime, and 3) financial loss as a result of the offense. Since charging categories varied by jurisdiction, our type of crime variable is only roughly equivalent both within and across data sets.[7]

In general, the bulk of these offenses caused relatively minor physical or monetary harm to victims. Forty to forty-five percent resulted in less than a $100 monetary loss, and only a few cases required hospitalization of the victim. The vagaries of these sorts of estimates

need to be borne in mind, since they are notoriously vunerable to inflation and misrepresentation (due to their importance in insurance claims). That makes the apparently minor nature of these offenses all the more striking.

Evidence Variables. The quality of our evidence variables differs considerably from jurisdiction to jurisdiction, as inspection of Tables 1 and 2 indicates. Coding procedures in the original data sets confound the presence or absence of evidence with categorizations of missing data, and the number of missing cases is particularly high in Chicago. Still, there was jurisdictional variation in the number of confessions reported, and whether physical evidence in the case was available. The mean number of recorded witnesses ranged from 1.3 in Chicago to 5.9 in Seattle, and jurisdictions seem also to have relied upon line-up or direct witness identification in different ways.

Case Processing Variables. The Georgetown study provides a greater number of case processing variables than does the Eisenstein and Jacob data set. The only overlapping variable is type of defense at trial. In the Eisenstein and Jacob data we have also included the number of defense motions made in a case in an effort to tap the potentially adversarial nature of the case processing. There was some cross-jurisdictional variation in the type of defense counsel representing clients. Approximately 38-40% of all defendants in Baltimore and Chicago were represented by a privately retained attorney. Eighty-two percent of the defendants in Detroit were represented by public defenders or assigned counsel. Norfolk resembles Chicago and Baltimore in its representation pattern, while Seattle is more like Detroit. As one might expect, given the relatively adversarial nature of the defense bar in Detroit (see Part I),

Detroit showed the highest mean number of defense motions per case (5.7). Chicago had a mean of only 1.7, and Baltimore of 0.9.

The Georgetown study includes a number of other variables that reflect the character of case processing. The data includes information on the nature of the first plea entered by a defendant, and whether or not there was a change of plea in the case. Researchers also noted whether there was a presentence investigation, and whether case files contained a record of a plea agreement. If there was such a record, they classified the plea agreement according to type. Table 2 compares the distributions of these variables in Norfolk and Seattle.

Sociolegal Correlates of Case Disposition and Case Outcome

Case Disposition. Tables 3 and 4 summarize the zero-order correlations between case disposition and the sociolegal variables outlined above. There are relatively few meaningful correlations in the Eisenstein and Jacob data, and there are none that operate systematically across all jurisdictions. Evidence variables (PHYSEV, NWIT) were modestly related to guilty pleas in Baltimore and Detroit, but worked in the opposite direction in Chicago. The number of defense motions was positively related to a trial disposition in Chicago, but not in the other two jurisdictions. Correlations are slightly higher and more systematic in the Georgetown data. Defendants with prior felony arrest were somewhat more likely to go to trial, and cases with recorded evidence (CONFESS, PHYSEV) were more likely to end in guilty pleas. The type of crime also shows a slight association with disposition mode. Minor burglary cases were more likely to be settled through guilty pleas than were others.

Case Outcome. The sociolegal correlates of case outcome (prison sentence) are rather modest and mixed in the Eisenstein and Jacob data. As one might expect, defendants who could not make bail were somewhat more likely to receive prison sentences than those who could. Evidence variables were positively associated with prison sentences in Baltimore and Chicago, but not Detroit (PHYSEV, NWIT). There are somewhat higher correlations in the Georgetown data. Defendants with prior felony arrests were somewhat more likely to receive a prison sentence, as were those who were not able to make bail. A number of evidence variables are associated with case outcome, and in Norfolk, defendants with an appointed counsel were somewhat more likely to receive a prison sentence than those with privately retained defense counsel.

Multivariate Patterns in Case Disposition and Outcome

The data presented in Tables 3 through 6 indicate that correlates of case disposition and outcome vary across jurisdictions. In order to present a more parsimonious total picture of disposition and outcome patterns, we have employed multiple regression with dichotomous dependent variables[8] and discriminant function analysis. This will allow us to comment on the way in which these data appear when used in traditional cybernetic methods of analysis and serve as a basis for our discussion of their relevance within a contingency framework on case processing in Part II.

Case Disposition: Regression Models

Table 7 presents "best" regression models for four of the five jurisdictions. Disposition was dichotomized (1=guilty plea; 2=bench and jury trials) and regressed on the variables that were its major correlates in each city. These equations contain all sociodemographic and sociolegal variables that were statistically significant predictors of disposition mode

under conditions of statistical control, and which had an apparently substantive impact on whether defendants' cases were routed to some form of trial.

Table 7, here

The equations for Norfolk and Seattle contain four predictors and confession, weapon, and physical evidence appear in each. The presence of a confession is the best predictor in these equations and increase the probability that a case will be settled through the use of a guilty plea--hardly a surprising finding. Confession and physical evidence also appear as meaningful predictors in the Detroit data, while type of crime and number of defense motions increase the apparent probability of trial in Chicago. This defense motions variable must be interpreted cautiously, however, because it is not always clear from the data whether these defense motions occur prior to or during trial. There was only one meaningful predictor of disposition in Baltimore (NWIT), so there is no regression model for Baltimore in Table 7.

Overall, it seems that the variables available in this analysis do relatively little to predict mode of disposition in these five jurisdictions. When disposition is dichotomized, it is impossible to predict patterns in Baltimore, and the presence of a confession (likely to produce an "automatic" guilty plea, and therefore somewhat tautological) is a predictor in three of the four remaining equations. The presence of physical evidence does reduce the probability of a trial in three jurisdictions, and use of a weapon increases the probability of trial in two. Still, their effects are modest and should be interpreted conservatively.

Case Disposition: Discriminant Function Analysis

The preceding regression analyses of case dispositions offer a straight-forward multivariate extension of the bivariate correlation analyses presented earlier. But statistical assumptions limited our analysis of dispositional choice to a dichotomized dependent variable--guilty pleas vs. all trials. Since the data contain three disposition categories (guilty pleas, bench trials, and jury trials), it is useful to explore factors that can differentiate these modes simultaneously. Discriminant function analysis enables us to examine each disposition mode in relation to the others by locating all three in a discriminant space whose dimensions are defined by a variety of independent variables. These independent (discriminating) variables are used to develop one or more discriminant functions which differentiate categories of the discriminant (dependent) variable (see Nunnally, 1967, for details about the suitability and requirements of discriminant function analysis). The functions are linear combinations of the discriminating variables and have coefficients that are analogous to factor loadings in a factor analysis. Coefficients are obtained through a process of maximizing differences among discriminant scores (produced by the functions) for groups of cases in each category of the discriminant variable (in this case, disposition modes).

Our analysis concentrates on the functions that are statistically significant discriminators among pleas, bench trials, and jury trials in each of the five jurisdictions.[9] Each discriminating variable's contribution to the overall function is reflected in the change it produces in Rao's V; variables with high positive or negative standardized discriminant coefficients define the substantive nature of the functions

in question. The group centroids locate the categories of the discriminant variable in discriminant space.

Table 8, here

Some interesting observations can be made about the substantive nature of these functions in the four jurisdictions included in this stage of our analysis. In order to interpret these functions, a varimax rotation procedure (Nie, et.al., 1975) was used so that the discriminating variables loaded primarily on one function or the other when two significant functions occurred. These functions define two dimensions in discriminant space which are orthogonal to one another and against which the group centroids can be plotted. Figure 1 displays the plots of the group centroids for each of the four jurisdictions with significant discriminant functions. The horizontal axes represent Function 1 for each jurisdiction, and the vertical axes (where present) represent the second function, controlling for the effects of the variables that define Function 1.

Figure 1, here

The first significant function in Baltimore is dominated by the CRIME variable--armed robberies vs. lesser robberies and burglaries. The plot of the group centroids indicates that this dimension clearly distinguishes jury trials from bench trials and guilty pleas, and that jury trials are associated with armed robberies. But guilty pleas are also associated with armed robberies, while bench trials are associated with the lesser crimes. Function 2 in Baltimore is defined by the number of witnesses variable (NWIT). Here, bench trials are associated with cases

having fewer witnesses than those going to jury trial and particularly those that end in guilty pleas. On both dimensions, disposition modes are arrayed in an order contrary to that suggested by the conventional wisdom. In Baltimore, our analysis indicates that guilty pleas are not necessarily used for the least serious cases nor are bench trials or jury trials necessarily chosen when the prosecution has assembled a long line of witnesses (cf., Landes, 1971).

In Chicago, the first function is defined by the number of motions in a case. This clearly separates jury trials from bench trials and both types of trial from guilty pleas, as might be expected. But the second function, composed primarily of the CRIME and LINEUP variables, separates bench trials from both guilty pleas and jury trials. The absence of a lineup identification and the presence of an armed robbery charge are associated with bench trials in this jurisdiction. Neither guilty pleas nor jury trials are much affected by these two factors.

The single function for Norfolk contains the presence or absence of a confession (CONFESS) and weapon (WEAPON) and the number of witnesses (NWIT). This dimension separates guilty pleas, bench trials, and jury trials roughly in accordance with the conventional wisdom. Cases without a confession, and cases involving a weapon, and those with a relatively large number of witnesses are associated with bench trials and particularly with jury trials, while the opposite sorts of cases are associated with guilty pleas.

Seattle presents the most complex pattern of dispositional choice. Sociolegal characteristics define the first dimension, with cases charging other than minor burglaries (CRIME) and with little physical evidence (PHYSEV) associated with bench and jury trials. Sociodemographic

characteristics define the second dimension. Jury trial dispositions are associated with younger defendants (AGE) and those with a relatively high number of prior arrests (FARRESTS), while older defendants and those with fewer prior felony arrests are associated with bench trial dispositions. Guilty pleas are relatively unaffected by either dimension.

In summary, the centroids plotted in Figure 1 and the discriminant functions presented in Table 8 point to a great deal of variation in patterns of dispositional choice among the four jurisdictions included in our discriminant function analysis. No one group of variables nor any implicit ordering of disposition modes can be said to prevail across jurisdictions. The implications of these disparities will be discussed in Part II. It is also clear that discriminant function analysis of a trichotomized disposition variable produces somewhat different results from a regression analysis using dichotomized disposition modes. The nature of these differences will be discussed in detail in Part II.

Case Outcome: Regression Analysis

Case outcome was dichotomized to reflect whether or not a defendant received a prison sentence (0=no prison time; 1=some prison time). Outcome was then regressed on its best sociolegal and sociodemographic correlates in each jurisdiction, and Table 9 presents the resulting "best" prediction equations that are composed of statistically significant and substantively meaningful predictors (p=.05).

Table 9, here

Norfolk has the largest number of significant predictors. Defendants who were unemployed were more likely to receive a prison sentence than those

who were employed. Those who were unable to make bail were also more likely to receive a prison sentence, as were those with a prior record of felony arrests. A higher probability of a prison sentence is also associated with the evidence variables of confession and number of witnesses, and those crimes committed with a weapon were more likely to produce a prison sentence.

The probability of a prison sentence in Seattle is affected by whether or not the defendant could make bail, the educational background of the defendant, and whether or not the crime was serious (i.e. an armed robbery vs. all other crimes). Much the same seems true for Chicago. Bail and evidence variables are significant predictors of a prison sentence in Baltimore, and crime seriousness or a prior arrest record are related to prison sentences in Detroit.

There are some general patterns worth noting here. Bail status is a significant predictor of probability of prison sentence in four of the five jurisdictions (there is no bail variable for Detroit), and measures that reflect crime seriousness (type of crime; whether or not a weapon was used) appear in four of the five equations. Thus, bail seems to have an impact on the probability of a prison sentence somewhat independent of its relationship to the relative seriousness of the crime for which the defendant is charged. Prior arrest record seems to have an independent impact on sentencing in Detroit and Norfolk. Beyond these similarities, however, other variables exert a scattered and unsystematic affect across jurisdiction.

TABLE 1. EISENSTEIN AND JACOB STUDY: Selected variables--description, coding, and frequency distributions

VARIABLE		CODING	MARGINAL DISTRIBUTIONS BALTIMORE (N=257)	CHICAGO (N=213)	DETROIT (N=273)
DEPENDENT VARIABLES					
DISPO	Mode of case disposition (dismissals, unresolved cases excluded)	1 = guilty plea	30.7	77.5	81.3
		2 = bench trial	56.0	16.4	7.3
		3 = jury trial	13.2	6.1	11.4
		(n)	(257)	(213)	(273)
SENTENCE	Sentence imposed	0 = no prison	22.7	28.6	41.0
		1 = prison	77.3	71.4	59.0
		(n)	(255)	(213)	(268)
INDEPENDENT VARIABLES					
SOCIODEMOGRAPHIC CHARACTERISTICS					
SEX	Sex of defendant	0 = female	3.5	4.7	3.3
		1 = male	96.5	95.3	96.7
		(n)	(255)	(213)	(271)
RACE	Race of defendant	0 = white	10.2	20.3	14.1
		1 = nonwhite	89.8	79.7	85.9
		(n)	(254)	(212)	(270)
AGE	Age of defendant	yrs of age, 18 - high	$\bar{X}$=24.2 SD=6.9	$\bar{X}$=24.5 SD=6.9	$\bar{X}$=22.6 SD=6.0
		(n)	(240)	(210)	(271)
EMPLOY	Employment status	0 = full time	41.2	24.4	21.7
		1 = part time, unemployed	58.8	75.6	78.3
		(n)	(187)*	(201)	(240)*
SOCIOLEGAL CHARACTERISTICS					
-LEGAL STATUS OF DEFENDANT					
ARRESTS	# of prior arrests	0-7 (7 includes 7 or more)	$\bar{X}$=3.2 SD=2.7	$\bar{X}$=4.1 SD=3.1	$\bar{X}$=2.7 SD=2.9
		(n)	(222)*	(212)	(224)*
BAIL	Pretrial release status	0 = bail	26.5	42.6	variable not available
		1 = no bail	73.5	57.4	
		(n)	(249)	(202)	

Table 1 (continued)

		Baltimore		Chicago		Detroit	
-OFFENSE CHARACTERISTICS							
CRIME	Type of crime						
	1.	LARCTHFT	32.3	THEFT	9.4	LARCENY	22.3
	2.	NITEBURG	10.9	BURGLARY	25.8	B and E	37.7
	3.	ROBBERY	8.9	ROBBERY	14.1	RBPERLRC**	6.6
	4.	ARMDROB	47.9	ARMDROB	50.7	ARMDROB	33.3
	(n)		(257)		(213)		(273)
HARM	Degree of harm to victim						
	0 = none		28.3		0.5		97.1
	1 = minor		68.5		91.3		2.6
	2 = treated		3.2		2.4		0.4
	3 = hospitalized		0.0		1.0		0.0
	4 = raped		0.0		0.0		0.0
	5 = killed		0.0		4.8		0.0
	(n)		(251)		(207)		(273)
CVALUE	Value of goods stolen						
	0 = none		8.8		0.0		variable not equivalent
	1 = $1-100		34.9		44.4		
	2 = $101-250		19.3		20.6		
	3 = $251-500		9.6		8.1		
	4 = $501-1,000		10.8		7.5		
	5 = $1001-5000		15.3		5.0		
	6 = 5001-10,000		0.8		0.6		
	7 = $10,000+		0.4		13.7		
	(n)		(249)		(160)*		
-EVIDENCE VARIABLES							
CONFESS	Was a confession obtained?						
	0 = not marked		84.1		66.4		80.1
	1 = marked		15.9		33.6		19.9
	(n)		(233)		(113)*		(256)

Table 1 (continued)

		Baltimore	Chicago	Detroit
PHTOID	Was photo ID made?			
	0 = not marked	86.7	89.5	88.5
	1 = marked	13.3	10.5	11.5
	(n)	(233)	(171)*	(253)
PHYSEV	Was physical evidence obtained?			
	0 = nor marked	32.3	17.7	25.4
	1 = marked	67.7	82.3	74.6
	(n)	(232)	(175)*	(256)
NWIT	No. of witnesses			
	0 - 7	$\overline{X}$=3.7	$\overline{X}$=1.3	$\overline{X}$=2.2
	(7 includes 7 or more)	SD=1.6	SD=1.0	SD=1.5
	(n)	(251)	(194)	(268)
LINEUP	ID through lineup?			
	0 = not marked	97.9	74.9	76.8
	1 = marked	2.1	29.1	23.2
	(n)	(233)	(171)*	(263)
CASE PROCESSING VARIABLES				
TPCNSL	Type of defense			
	0 = private	38.2	40.4	17.6
	1 = public defender, app't.	61.8	59.6	82.4
	(n)	(249)	(203)	(273)
CMOTIONS	# of defense motions			
	1-6	$\overline{X}$=.9	$\overline{X}$=1.7	$\overline{X}$=5.7
	(6 includes 6 or more)	SD=1.1	SD=1.9	SD=3.2
	(n)	(251)	(209)	(273)

*Missing data > 10% of the total N.

**Robbery or Larceny of person (i.e., virtually equivalent)

Table 2. GEORGETOWN STUDY: Selected variables--description, coding, and frequency distributions

VARIABLE	CODING	MARGINAL DISTRIBUTION NORFOLK (N = 580)	MARGINAL DISTRIBUTION SEATTLE (N = 666)
DEPENDENT VARIABLES			
DISPO Mode of case disposition			
	0 = guilty plea	80.0	87.7
	1 = bench trial	14.7	4.5
	2 = jury trial	5.3	7.8
	(n)	(580)	(666)
SENTENCE Sentence imposed			
	0 = no prison	26.7	26.4
	1 = prison	73.3	73.6
	(n)	(580)	(666)
INDEPENDENT VARIABLES			
SOCIODEMOGRAPHIC CHARACTERISTICS			
SEX Sex of defendant	0 = female	4.1	3.5
	1 = male	95.9	96.5
	(n)	(580)	(664)
RACE Race of defendant	0 = white	40.0	70.9
	1 = nonwhite	60.0	29.1
	(n)	(580)	(666)
AGE Age of defendant	16 yrs thru hi	$\bar{X}$=23.1	$\bar{X}$=23.3
		SD=6.1	SD=6.6
	(n)	(565)	(656)
EMPLOY Employment status	0 = full time	28.3	26.7
	1 = part time or unemployed	71.7	73.3
	(n)	(580)	(666)
EDUC Educational attainment			
	0 = 1-4 yr	1.9	0.6
	1 = 5-8 yr	26.3	6.3
	2 = 9-11 yr	50.8	54.0
	3 = 12 yr	15.8	28.0
	4 = more than 12	5.3	11.1
	(n)	(533)	(504)*

Table 2 (continued)

		Norfolk		Seattle
SOCIOLEGAL CHARACTERISTICS				
-LEGAL STATUS OF DEFENDANT				
FARRESTS # prior felony arrests	1-7 (7 includes 7 or more)	$\bar{X}$=2.9		$\bar{X}$=1.8
		SD=2.8		SD=2.2
	(n)	(580)		(666)
BAIL pretrial release status	0 = bail	37.1		64.6
	1 = no bail	62.9		35.4
	(n)	(523)*		(661)
-OFFENSE CHARACTERISTICS				
CRIME type of crime	0=B&E, larceny	50.9	0=burglary II	75.4
	1=B&E, murder	3.3	1=robbery II	1.7
	2=robbery	39.0	2=robbery I	12.8
	3=burglary	6.9	3=armed rob	10.2
	(n)	(580)		(666)
HARM degree of harm to victim	0 = none	62.6		80.1
	1 = minor	26.1		11.0
	2 = hospital	9.9		8.9
	3 = death	1.5		0.0
	(n)	(203)*		(236)*
MLOSS amt. of monetary loss	0 = none	12.8		17.7
	1 = $1-100	28.3		25.3
	2 = $101-250	15.7		11.9
	3 = $251-500	13.0		11.9
	4 = $501-1000	9.8		12.1
	5 = $1001-5000	16.2		17.5
	6 = $5001-10,000	3.2		2.1
	7 = $10,000+	0.9		1.4
	(n)	(561)		(628)
-EVIDENCE VARIABLES				
WEAPON was there a weapon?	0 = no	67.1		80.5
	1 = yes	32.9		19.5
	(n)	(566)		(666)
ID Eyewitness ID?	0 = no	33.3		28.2
	1 = yes	66.7		71.8
	(n)	(543)		(660)

Table 2 (continued)

			Norfolk	Seattle
CONFESS	was a confession obtained?	0 = no	41.9	33.8
		1 = yes	58.1	66.2
		(n)	(573)	(651)
PHYSEV	was there physical evidence?	0 = no	23.1	7.9
		1 = yes	76.9	92.1
		(n)	(559)	(659)
NWIT	no. of witnesses	1 thru 7 (7 inc. 7 or more)	$\bar{X}$=4.9	$\bar{X}$=5.9
			50=1.8	SD=1.4
		(n)	(580)	(666)
CASE PROCESSING VARIABLES				
TPCNSL	type of counsel	0 = private	46.6	16.2
		1 = public defender, app't.	53.4	83.8
		(n)	(562)	(568)*
FRSTPLEA	1st plea entered	0 = guilty	79.8	0.8
		1 = not guilty	20.2	99.2
		(n)	(578)	(664)
CHNGPLEA	record of change of plea	0 = no	98.1	12.8
		1 = yes	1.9	87.2
		(n)	(580)	(666)
PSI	presentence investigation?	0 = no	44.3	24.0
		1 = yes	55.7	76.0
			(567)	(624)
PB	record of plea agreement?	0 = no	39.3	10.4
		1 = yes	60.7	89.6
		(n)	(341)*	(597)*
TYPPB	type plea agreement	0 = chg. reduced	6.1	2.7
		1 = chg. dismissed	6.7	6.2
		2 = sent. rec'd.	15.3	37.9
		3 = 0 + 1	1.1	0.2
		4 = 0 + 2	7.6	8.9
		5 = 1 + 2	9.0	23.3
		6 = 0 + 1 + 2	0.0	1.8
		NA	54.2	19.0
		(n)	(445)*	(662)

*Missing data > 10% of the total N.

TABLE 3. EISENSTEIN AND JACOB STUDY: Pearson Product-Moment correlations for dichotomized disposition variable with selected sociodemographic and sociolegal variables (disposition: 0 = guilty plea; 1 = bench and jury trials)

	Baltimore (N)	Chicago (N)	Detroit (N)
SOCIODEMOGRAPHIC VARIABLES			
SEX	.01 (255)	.07 (213)	-.07 (271)
RACE	-.05 (254)	.08 (212)	.11* (270)
AGE	.00 (240)	-.07 (210)	.04 (271)
EMPLOY	-.10 (187)	.01 (201)	.02 (240)
SOCIOLEGAL VARIABLES			
ARRESTS	.05 (222)	.01 (212)	.05 (224)
BAIL	.00 (249)	.01 (202)	NA
HARM	.04 (251)	.18* (207)	-.03 (273)
CVALUE	.02 (249)	-.08 (160)	NA
CONFESS	-.06 (233)	.03 (113)	-.13* (256)
LINEUP	.04 (233)	-.06 (171)	.12* (263)
PHTOID	.10 (233)	-.02 (171)	-.01 (253)
EVIDENT	.03 (233)	-.06 (201)	-.01 (268)
PHYSEV	-.07 (232)	.13* (175)	-.16* (256)
NWIT	-.20* (251)	.08 (194)	-.13* (268)
CRIME	.00 (257)	.33* (213)	.08 (273)
TPCNSL	.01 (249)	.05 (203)	.10 (272)
CMOTIONS	-.01 (251)	.41* (209)	-.08 (273)

*Significant at p = .05 or better.

TABLE 4. GEORGETOWN STUDY: Pearson Product-Moment correlations for dichotomized disposition variables (0 = guilty plea; 1 = bench and jury trial) with selected sociolegal and sociodemographic variables

	Norfolk (N)	Seattle (N)
SOCIODEMOGRAPHIC VARIABLES		
SEX	.02 (580)	.00 (664)
RACE	.16* (580)	.07* (666)
EMPLOY	.03 (580)	.05 (666)
AGE	.12* (565)	.17* (656)
EDUC	.01 (533)	.02 (504)
SOCIOLEGAL VARIABLES		
FARRESTS	.09* (580)	.18* (666)
BAIL	-.00 (523)	.12* (661)
MLOSS	-.05 (561)	-.12* (628)
CRIME	.16* (580)	.18* (666)
WEAPON	.18* (566)	.16* (666)
CONFESS	-.40* (573)	-.28* (651)
PHYSEV	-.20* (559)	-.15* (659)
NWIT	.16* (580)	.02 (666)
ID	.11* (543)	.05 (660)
TPCNSL	.00 (562)	.09* (568)
FRSTPLEA	.96* (578)	.03 (664)
CHNGPLEA	-.07* (580)	-.91* (666)
PSI	.13* (567)	-.11* (624)
PB	-.18* (341)	-.39* (597)

*Significant at p = .05 or better.

TABLE 5. EISENSTEIN AND JACOB STUDY: Pearson product-moment correlations for dichotomized case outcome variables with selected sociodemographic and sociological variables (sentence: 0 = no prison sentence; 1 = prison sentence)

	Baltimore (N)	Chicago (N)	Detroit (N)
SOCIODEMOGRAPHIC VARIABLES			
SEX	.05 (255)	.15* (213)	.08 (266)
RACE	-.03 (254)	.04 (212)	-.06 (265)
AGE	-.04 (240)	.08 (210)	.06 (266)
EMPLOY	.07 (187)	-.06 (201)	.02 (238)
SOCIOLEGAL VARIABLES			
ARRESTS	.01 (220)	.05 (212)	.23* (221)
BAIL	.17* (249)	.18* (202)	NA
HARM	-.14* (251)	.11 (207)	.03 (268)
CVALUE	.07 (249)	-.09 (160)	NA
CONFESS	-.08 (233)	-.14 (113)	-.06 (251)
LINEUP	-.08 (233)	.06 (171)	.08 (258)
PHTOID	-.03 (233)	.02 (171)	.13* (248)
EVIDENT	-.10 (233)	-.03 (201)	.08 (263)
PHYSEV	.12* (232)	.18* (175)	-.04 (252)
NWIT	.17* (251)	.14* (194)	-.03 (263)
CRIME	.01 (257)	.21* (213)	.14* (268)
TPCNSL	.00 (249)	.11 (203)	-.07 (268)
CMOTIONS	.07 (251)	.10 (209)	.07 (268)

*Significant at p = .05 or better.

TABLE 6. GEORGETOWN STUDY: Pearson product-moment correlations for dichotomized case outcome variables with selected sociodemographic and sociolegal variables (sentence: 0 = no prison sentence; 1 = prison sentence)

	Norfolk	Seattle
SOCIODEMOGRAPHIC VARIABLES		
SEX	.11* (580)	.07* (664)
RACE	.20* (580)	.08* (666)
EMPLOY	.17* (580)	.08* (666)
AGE	.05 (565)	-.02 (656)
EDUC	-.04 (533)	-.09* (504)
SOCIOLEGAL VARIABLES		
FARRESTS	.20* (580)	.14* (666)
BAIL	.28* (523)	.28* (661)
MLOSS	-.01 (561)	.05 (628)
CRIME	.15* (580)	.24* (666)
WEAPON	.22* (566)	.23* (666)
CONFESS	-.19* (573)	-.06 (651)
PHYSEV	.03 (559)	-.10* (659)
NWIT	.22* (580)	.14* (666)
ID	.19* (543)	.05 (660)
TPCNSL	.21* (562)	.00 (568)
FRSTPLEA	.21* (578)	.03 (664)
CHNGPLEA	-.06 (580)	-.08* (666)
PSI	.03 (567)	.07* (624)
PB	-.16* (341)	-.12* (597)

*Significant at p = .05 or better

TABLE 7. Disposition Regressed on Best Predictors: Four Jurisdictions (disposition: 1 = guilty plea; 2=bench and jury trial)

Chicago (N = 209)

	b	β	SE
CMOTIONS	.07	.33	.01
CRIME	.20	.24	.05

R^2 = .21
int = 1.00

Norfolk (N = 548)

	b	β	SE
CONFESS	-.29	-.36	.03
WEAPON	.11	.12	.03
NWIT	.03	.13	.01
PHYSEV	-.11	-.11	.04

R^2 = .21
int = 1.26

Detroit (N = 231)

	b	β	SE
RACE	.16	.15	.07
PHYSEV	-.12	-.14	.05
CONFESS	-.10	-.11	.06

R^2 = .05
int = 1.12

Seattle (N = 636)

	b	β	SE
CONFESS	-.14	-.21	.03
WEAPON	.12	.14	.03
PHYSEV	-.16	-.13	.04
AGE	.01	.11	.00

R^2 = .11
int = 1.23

TABLE 8. Discriminant Functions for Comparative Disposition Patterns: Pleas vs. Bench Trials vs. Jury Trials

BALTIMORE (N = 251)	Rao's V=22.11	cc^2=.10 Wilks' L=.89 X^2(df)=31.1(4) α=.000	cc^2=.02 Wilks' L=.98 X^2(df)=5.0(1) α=.026
Discriminating Variables	Contribution to Rao's V (%)	Function* 1	Function* 2
CRIME	57.7	1.02	-.11
NWIT	42.3	- .11	1.02
	Group Centroids		
	PLEAS	.05	.31
	BENCH TRIALS	-.17	-.23
	JURY TRIALS	.60	.23

CHICAGO (N = 170)	Rao's V=99.80	cc^2=.35 Wilks' L=.62 X^2(df)=80.7(6) α=.000	cc^2=.05 Wilks' L=.95 X^2(df)=8.3(2) α=.016
Discriminating Variables	Contribution to Rao's V	Function* 1	Function* 2
CMOTIONS	71.1	.90	.07
CRIME	19.2	.20	-.76
LINEUP	9.8	.16	.85
	Group Centroids		
	PLEAS	-.33	.21
	BENCH TRIALS	.51	-.72
	JURY TRIALS	2.06	-.46

(continued)

Table 8 (continued)

NORFOLK (N = 562)	Rao's V=157.35	cc^2=.22 Wilks' L=.779 X^2(df)=139.3(6) α=.000
Discriminating Variables	Contribution to Rao's V (%)	Function 1
CONFESS	72.1	.86
WEAPON	19.8	-.39
NWIT	8.1	-.29
	Group Centroids	
	PLEAS	.25
	BENCH TRIALS	-.80
	JURY TRIALS	-1.54

SEATTLE (N = 649)	Rao's V=91.84	cc^2=.09 Wilks' L=.872 X^2(df)=88.2(8) α=.000	cc^2=.05 Wilks' L=.954 X^2(df)=30.1(3) α=.000
Discriminating Variables	Contribution to Rao's V	Function* 1	Function* 2
AGE	32.6	.22	1.09
FARRESTS	28.3	.45	-.70
CRIME	23.7	.55	-.21
PHYSEV	15.5	-.49	-.03
	Group Centroids		
	PLEAS	-.11	-.01
	BENCH TRIALS	.52	.91
	JURY TRIALS	.98	-.39

*Varimax rotation of standardized discriminant coefficients; Norfolk's single function is unrotated.

TABLE 9. Case Outcome Regressed on Best Predictors: Five Jurisdictions (outcome: 0 = no prison sentence; 1 = prison)

BALTIMORE (N = 220)

	b	β	SE
BAIL	.18	.20	.06
PHYSEV	.10	.12	.06
NWIT	.03	.11	.02

R^2 = .06

int = .50

CHICAGO (N = 202)

	b	β	SE
CRIME	.19	.21	.06
BAIL	.15	.17	.06

R^2 = .07

int = .53

DETROIT (N = 209)

	b	β	SE
ARRESTS	.05	.28	.01
CRIME	.17	.17	.07

R^2 = .08

int = .40

NORFOLK (N = 478)

	b	β	SE
BAIL	.19	.21	.04
WEAPON	.18	.19	.04
FARRESTS	.02	.11	.01
EMPLOY	.13	.14	.04
CONFESS	-.11	-.12	.04
NWIT	-.03	.11	.01

R^2 = .19

int = .34

SEATTLE (N = 496)

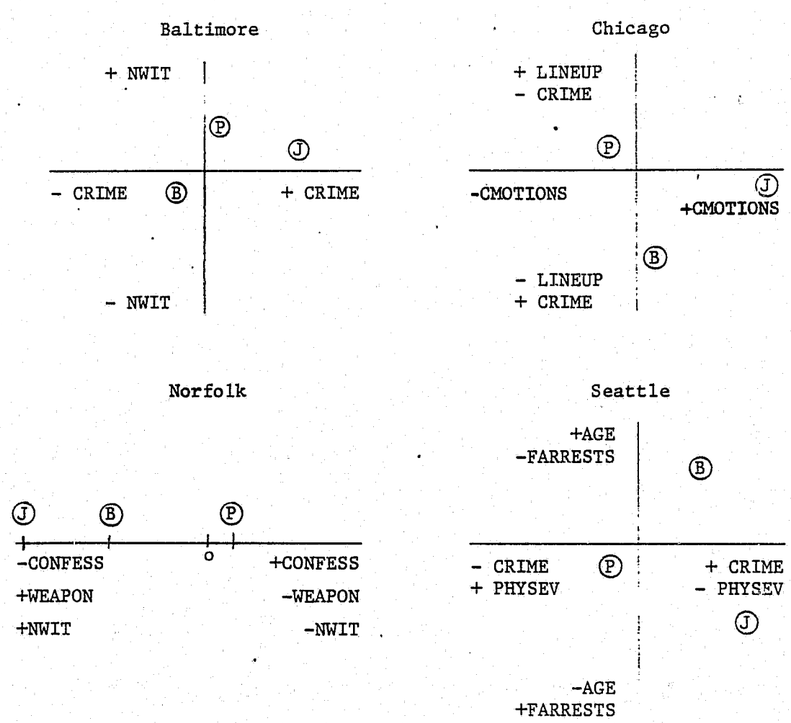
	b	β	SE
BAIL	.20	.21	.04
CRIME	.20	.19	.05
EDUC	-.05	-.10	.02

R^2 = .10

int = .75

FIGURE 1

DISPOSITION MODE CENTROID PLOT IN DISCRIMINANT SPACE FOR FOUR JURISDICTIONS



P = guilty plea centroid

B = bench trial centroid

J = jury trial centroid

APPENDIX FOOTNOTES

1. Of course, in many criminal jurisdictions, a substantial proportion of cases processed are disposed of by dismissal (or sometimes nolle prosequi) prior to indictment. Such early dismissal decisions usually remove the least serious or otherwise faulty criminal cases from court dockets. The burglary and robbery cases studied here are not to be considered representative of all such cases, but only those surviving early dismissal. These cases may, for example, involve fewer evidentiary problems or more "serious" incidents than the total population of burglaries and robberies processed by the jurisdictions.

2. We will assume that the bulk of guilty pleas are obtained by plea bargins, although it is impossible to know precisely how many because of variation in record keeping between the two data sets and between jurisdictions within each data set. For example, researchers recorded that 81% of all Seattle cases had a "record of a plea agreement," indicating that a high proportion of the guilty pleas were obtained through an agreement. However, only 46% of the cases in Norfolk had a record of an agreement. It is difficult to know whether the rest were not in response to an agreement (which is highly doubtful), or whether record keepers were lax in recording this particular information. In general it seems reasonable to assume that the bulk of guilty pleas come from plea agreements (President's Commission on Law Enforcement and Administration of Justice, 1967:9).

3. Data for defendant's level of education were not available in the Eisenstein and Jacob study.

4. Baltimore shows fewer unemployed, but the employment variable in Baltimore contains 27% missing data. Detroit employment data are not much better (14% missing). We have used the employment variable in zero-order correlations with case disposition and outcome, but because these correlations are low for each of the three Eisenstein and Jacob jurisdictions, the employment variable was not included in regression analyses for those jurisdictions.

5. The correlation coefficients in Tables 3 through 6 appear statistically significant, but we would urge readers to evaluate their importance on the basis of criteria of substantive meaning rather than sampling error. First, significance tests evaluate the impact of sampling error on findings, but the majority of these jurisdictions were not sampled according to systematic probability procedures. Therefore, tests of statistical significance have no immediate intuitive meaning. Second, sample sizes this large produce significant correlation coefficients that are substantively unimportant (i.e., less than .10). We have choosen to limit our discussion to coefficients greater than this, knowing full well that even coefficients of .20 or .30 are usually considered quite modest. Third, we are examining a large number of associations in these two data sets in an admittedly exploratory fashion. Under these conditions, some coefficients are bound to appear to be statistically significant purely by chance. By imposing substantive criteria in our interpretation of coefficients, we hope to avoid these chance

occurrences as much as possible, thus, we limit our discussion to large correlations that seem less vulnerable to chance factors.

6. In Detroit there was no record of whether defendants made bail (as opposed to whether bail was set) we cannot include this information in our analysis of patterns in Detroit; for a general description of Detroit defendants' bail experiences, see pp. 196-201, in Eisenstein and Jacob (1977).

7. Dichotomizing the type of crime variable proved to be problematic. We chose to separate the least serious burglaries from the more serious burglaries and robberies in the Georgetown data and armed robberies from lesser robberies and burglaries in the Eisenstein and Jacob data. In both data sets the isolated crimes were comparable across jurisdictions within the two studeis and proved to be the modal categories in every jurisdiction except Detroit where aremd robberies were 33.3% of the crime types studied. Becasue of the very low intercorrelations among crime types and other independent variables and because of the small n's for some of the other crime categories, we chose not to develop separate multivariate analyses for each crime type.

8. Multiple regression is often used in analysis of binary dependent variables (Kmenta, 1971). Binary dependent variables can be predicted by (1) other dichotomous independent variables or (2) polytomous independent variables (either ratio or interval). These predictors can be given a substantive interpretation whose logic is identical to that of contingency table analysis. The intercept of the equation is the probability of scoring "1" on the dependent variable (i.e. of going to trial) while scoring

"0" on all the other predictors. Regression coefficients for each predictor reflect the change in probability of trial expected for each unit change in the value of the predictor, holding constant all other variables in the equation.

9. Wilks' Lambda (Wilks' L) with a X^2 test of significance was used to indicated the significance of each function. We have included information on canonical correlation squared (CC^2) to indicate the strength of the overall relationships between the discriminant scores and the discriminating variables. We also compare standerdized discriminant coefficients for each variable in a function and evaluate their contribution to the function through the change that they produce in Rao's V. Rao's V is a measure of how well each discriminating variable separates the discriminant scores of cases in different categories of the discriminant variable. The group centroids are simply the average discriminant scores for all cases within each category of the discriminant variable.

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