Sentencing Recommendations and Women Offenders: The Biopsychological Model and the Treatment of Female Offenders*

Candace Kruttschnitt**
Cheryl Johnson***

Deviant individual characteristics such as retarded emotional development or premenstrual syndrome have traditionally been used to explain criminality in women. By contrast, social structural factors, such as an impoverished environment, are more often linked to the incidences of crime among men. This paper examines the degree to which probation officers' sentencing recommendations have been influenced by these gender-related explanations for criminal activity. Part I of the article argues that crime causation theory has developed in a sex-specific fashion such that criminality is seen as the result of the individual pathologies of female offenders rather than as a result of their social conditions. Part II presents a study designed to examine whether this bifurcation of crime causation theory has affected the respective sentencing recommendations women and men receive in criminal court. Part III presents the study's findings, revealing that, generally, the

* This research was supported by grant no. SES-8107095 from the National Sciences Foundation, of which Kruttschnitt was the principal investigator. All correspondence concerning this paper should be sent to Candace Kruttschnitt, Department of Sociology, 1114 Social Sciences, 267—19th Avenue South, Minneapolis, MN 55455.

** Candace Kruttschnitt received her Ph.D. in Sociology from Yale University in 1979. Her doctoral dissertation examined the criminal sentences accorded women offenders in one county in Northern California. Since 1979, Professor Kruttschnitt has published numerous articles on women offenders. She is currently involved in a study of violent male offenders sentenced from Hennepin County to Minnesota State Correctional Facilities. Professor Kruttschnitt is an Assistant Professor of Sociology at the University of Minnesota, Twin Cities, a position she has held since 1980.

*** Cheryl D. Johnson is a doctoral candidate in applied sociology at the University of Minnesota, and is also a Research Coordinator for Program Evaluation Resource Center. She is currently involved in research with Rita Simon on a transracial adoption study. Her substantive areas of interest include criminal justice, juvenile justice and women offenders.

sentences recommended for female offenders are more likely to be influenced by indications of psychological and physical pathology than are the sentences recommended for male offenders. The impact of these variables on sentencing recommendations appears to have diminished somewhat over the past sixteen years. Finally, we suggest interpretations of findings regarding the influx of female probation officers over the assessed sixteen year period.

I. Trends in Crime Causation Theory

Speculation on the causes of crime can be found in the most ancient of human writings. The following discussion does not review the breath of this subject matter. Instead, it attempts to provide a historical framework for evaluating current explanations of female crime.[1] Perhaps because both the volume and nature of female crime have been less problematic than male crime, the development of criminological theory represents the criminology of men.[2] Theoretically, remnants from the debate about whether genetics or the environment is the locus of male criminality laid the foundation for most of what has been written about female offenders.

In the late nineteenth century the general growth of natural sciences influenced the study of crime. The classical school of criminology, predominant in the eighteenth century, assumed people were rational actors capable of exercising free will. By contrast, the natural science or biological approach to the study of crime emphasized the determinism of conduct. Cesare Lombroso and other late nineteenth and early twentieth century criminologists ascribed crime to "atavism," that is, they saw criminal activity as a "throwback," or reversion, to prehuman physical characteristics and conduct.[3] Examining the physical characteristics and body types of prisoners, scholars hypothesized that criminals, like their primitive ancestors, were either incapable of reason or unable to control their animal impulses.[4]

---

1. For a historical overview of crime causation theories, *see* Richard Quinney, The Problem of Crime, 43-100 (1970); and Daniel Glaser, *A Review of Crime-Causation Theory and Its Application* in 1 Crime and Justice: An Annual Review 203 (Norval Morris and Michael Tonry eds. 1979).

2. Susan Datesman & Frank Scarpitti, *The Extent and Nature of Female Crime*, in Women, Crime, and Justice 3, 4-5 (Susan Datesman & Frank Scarpitti eds. 1980).

3. Cesare Lombroso, Crime: Its Causes and Remedies 365-69 (1911).

4. Glaser, *supra* note 1, at 206.

A strong deterministic belief in the "born criminal" gave way to an examination of other causal factors in the twentieth century. Following in the footsteps of Sigmund Freud, psychologists and psychiatrists called attention to faulty child development. These commentators related criminality to such concepts as innate impulse, mental conflict and repression. Simply put, criminal behavior was viewed as a way of acting out normal urges and desires that had been obstructed.[5] While this neo-Freudian approach to the study of crime proved to be useful in individual cases, the formulations made on the basis of each case study provided little ground for generalizing about the experiences of other offenders.[6]

A distinctly sociological orientation to crime, which developed at the University of Chicago in the 1920s and 1930s, focused attention on the influence of social structural factors on the genesis of crime. Urbanization, immigration, social mobility and value conflict, were some of the more prominent factors which scholars began to examine in relation to criminal behavior. In so doing, the onus for crime, by and large, shifted from the offender to society. For example, social disorganization in the country's urban areas and, in particular, the "interstitial areas" of the city was viewed as a causal factor in transforming slum groups into delinquent gangs.[7] Subsequent theoretical developments have consisted primarily of extending this social structural view of crime causation to the point that crime is seen as merely a legal construct imposed by some persons on others.[8]

Over the past century, then, theoretical explanations for criminality have progressed from models explicating individual biological and psychological determinism to models exploring social determinants of crime. However, as previously noted,[9] explanations for female criminality have been, and continue to

5. *E.g.*, August Aichorn, Wayward Youth (1935); Ben Karpman, The Individual Criminal (1935); William Healy & Augusta Bronner, New Light on Delinquency and Its Treatment (1936).

6. Glaser, *supra* note 1, at 207-08.

7. *See* William Thomas & Florian Znaniecki, The Polish Peasant in Europe and America (2d ed. 1927); Frederic Thrasher, The Gang: A Study of 1,313 Gangs in Chicago (1927).

8. Howard Becker, Outsiders (1963).

9. *See* Dorie Klein, *The Etiology of Female Crime: A Review of the Literature*, in Women, Crime and Justice 70-105 (Susan Datesman & Frank Scarpitti eds. 1980); Carol Smart, Women, Crime and Criminology: A Feminist Critique (1976).

be, derived almost exclusively from an examination of biological and psychological factors.

A. The Grounding of Biological Approaches to the Study of Female Crime

Not only is Lombroso[10] credited with inaugurating the study of the criminal as a physical organism, but he, and a colleague, are also accorded the dubious distinction of having written the foremost example of the biological explanation of female crime. In their book, *The Female Offender*,[11] Lombroso and his colleague William Ferrero used the concept of biological determinism to explain (1) how the female offender can be identified, (2) the relatively low female crime rate, and (3) the narrow range of offenses women commit. With regard to identifying female offenders, Lombroso believed that, by comparison to a "normal woman," the female offender has decidedly masculine characteristics; she has a "virile cranium," considerable body hair and, in many respects, resembles the savage woman.[12] He attributed the infrequence of female criminality to the fact that women display fewer physical anomalies than men which, in turn, is indicative of their closeness to lower, less differentiated forms of life.[13] Similarly, he postulated that women have fewer variations in their mental capacities and that this limited range of cognitive faculties could explain their respective concentration in only certain offense categories.[14]

While Lombroso's explanations for the etiology of crime have been discredited,[15] the connection he drew between a woman's physiology and her propensity to commit a crime has become an ever recurring theme in crime causation literature. For example, in what is now considered one of the classic studies of women offenders, Otto Pollak argued that social scientists should question sex-based differences in crime statistics rather than simply assuming that women are more law-abiding than men.[16] Arguing a theory of "hidden deviance," Pollak hypothesized that women commit as many crimes as men but because of the masked nature of female crime and the paternalistic nature of law enforcement officials, they rarely

10. Lombroso, *supra* note 3.
11. Cesare Lombroso & William Ferrero, The Female Offender (1920).
12. *Id.* at 103-14.
13. *See* Klein, *supra* note 9, at 78.
14. Lombroso & Ferrero, *supra* note 11, at 122.
15. *See* Charles Goring, The English Convict (1913).
16. Otto Pollak, The Criminality of Women (1950).

end up in criminal court or even in arrest statistics. Specifically, Pollak contended that women's crimes are seldom detected because women are the motivators and instigators of crime, but not active participants in it. Further, if women are detected, Pollak believed that they are less likely to be reported or prosecuted because of the greater leniency extended to women by the police and courts. These assumptions were based on Pollak's perceptions of the nature of women and the socio-sexual relations in society. His belief that women mastermind crimes, rather than perpetrate them, was based on the notion that the female sex is deceitful. For him, the origin of this deceitfulness lay in the physiology of women.

> Man must achieve an erection in order to perform the sex act and will not be able to hide his failure. His lack of positive emotion in the sexual sphere must become overt to the partner and pretense of sexual response is impossible for him, if it is lacking. Woman's body, however, permits such pretense to a certain degree and lack of orgasm does not prevent her ability to participate in the sex act.[17]

Pollak's fundamental reliance on male physiology factors, in association with social factors, as a basis for an explanation of female criminality is matched by other equally speculative and misogynist theories.

B. Adding a Psychological Dimension to the Study of Female Crime

W.I. Thomas was the first theorist to argue that female criminality was caused not only by biological factors but also by psychological ones.[18] Specifically, Thomas believed that human behavior was influenced by four biological instincts or "wishes": the desire for new experience, security, response, and recognition. The prevention of antisocial attitudes resulted from channeling these instincts toward appropriate goals through institutions like the family. Thus, for Thomas, unsublimated desires "to get amusement, adventure, pretty clothes . . . and freedom in the larger world"[19] were the genesis of delinquency in girls. Society expects and permits different behavior from boys and girls. Conventional sex roles treat a boy's desire for adventure and freedom as an appropriate part of his development. On the other hand, society does not treat such desires as appropriate in girls. Thomas explained adjustment

17. *Id.* at 10.
18. W. Thomas, The Unadjusted Girl (1923).
19. *Id.* at 109.

to social norms as the cause of antisocial behavior in girls. Uncontrolled desires for the "allurements" of the world caused girls to use their bodies as a means of wish fulfillment.

> The beginning of delinquency in girls is usually an impulse to get amusement, adventure, pretty clothes, favorable notice, distinction, freedom in the larger world. . . . The girls have usually become "wild" before the development of sexual desire, and their casual sex relations do not usually awaken sex feeling. Their sex is used as a condition of the realization of other wishes. It is their capital.[20]

Thomas believed that women's criminality was more than biologically driven. Female criminality resulted from both instinctual drives, which he assumed to be universal but which he, in fact, treated in a sex-specific fashion, and also from faulty socialization of those drives.

The importance Thomas gave to the psychological determinants of female delinquency was further bolstered by the writings of Freud.[21] Although Freud was not especially concerned with crime, he addressed various forms of social maladjustment and neurosis among women. The root of neurosis in women was the inferiority of the sex organs or the castration complex.

> Feminine traits can be traced to the inferior genitals themselves, or to women's inferiority complex arising from their response to them: women are exhibitionistic, narcissistic and attempt to compensate for their lack of a penis by being well dressed and physically beautiful. Women become mothers trying to replace the lost penis with a baby.[22]

Clearly, Freud's notion of anatomy as destiny set the stage for labeling women who stepped out of traditional sex roles as deviants.

The influence of Freud's work has been most evident in analyses of prostitution. Several studies of prostitutes interpreted personality traits such as the desire to dominate men, contempt for the male sex, and the existence of homosexual relationships as signs of sex role confusion. The wide-spread assumption that these characteristics were symptoms of a maladjustment to the "natural" female traits of masochism and passivity is indicative of the extent to which scholars embraced Freudian notions.[23] Further, almost all scholarship which assumes that female criminality represents a departure from pre-

---

20. *Id.*
21. Sigmund Freud, New Introductory Lectures on Psychoanalysis (1933).
22. *See* Klein, *supra* note 9, at 87.
23. Smart, *supra* note 9, at 84-86.

scribed sex role behavior is based, at least in part, on Freudian notions.[24]

C. *Continuing the Myths About Women Offenders*

Assumptions about the physical and psychological nature of women and their criminality are not simply historical characterizations. These old assumptions have appeared recently in research on youthful female criminality and on hormonal antecedents to adult female criminality. With regard to juveniles, Gisela Konopka, for instance, posits that girls are driven to delinquency by inherent emotional problems, loneliness and dependency.[25] Similarly, the work of John Cowie, Valerie Cowie, and Eliot Slater suggests that biological differences between the sexes account for discrepancies in the nature and frequency of crimes committed by girls and boys.

> Markedly masculine traits in girl delinquents have been commented on . . . [as well as] the frequency of homosexual tendencies. . . . Energy, aggressiveness, enterprise and the rebelliousness that drives the individual to break through conformist habits are thought of as being masculine. . . . We can be sure that they have some physical basis.[26]

With regard to adult female offenders, over the past three decades scholars in various fields have given special attention to the relationship between women's menstrual cycles and their anti-social behavior.[27] Proponents of the causal relationship between premenstrual syndrome (PMS) and female crime argue that many episodes of female criminality are uncontrolled outbursts of tension that result from stages in the menstrual cycle. At any one time, roughly a quarter of the women

---

24. *See, e.g.*, Kingsley Davis, *The Sociology of Prostitution*, 2 Am. Soc. Rev. 744 (1937); Ruth Morris, *Female Delinquency and Relational Problems*, 43 Soc. Forces 82 (1964); Clyde Vedder & Dora Somerville, The Delinquent Girl (1970).

25. Gisela Konopka, The Adolescent Girl in Conflict (1966).

26. John Cowie, Valerie Cowie & Eliot Slater, Delinquency in Girls 172 (1968).

27. *See, e.g.*, J.H. Morton, H. Additon, R.G. Addison, L. Hunt & J.J. Sullivan, *A Clinical Study of Premenstrual Tension*, 65 Am. J. Obstetrics and Gynecology 1182-91 (1953); Kathrina Dalton, *Menstruation and Crime*, 2 British Med. J. 1752 (1961); P.T. d'Orban, *Social and Psychiatric Aspects of Female Crime*, 11 Medicine, Science and the Law 104-16 (1971); Desmond Ellis & Penelope Austin, *Menstruation and Aggressive Behavior in a Correctional Center for Women*, 62 J. Crim. Law, Criminology and Police Sci. 388 (1971).

Attempts to demonstrate this assumption are not, however, new. They date back to the late nineteenth century when Lombroso and Ferrero found that 71 of 80 women were menstruating when arrested for resistance against public officials. Datesman & Scarpitti, *supra* note 2, at 66, (citing Julie Henry, Menstrual Cycles and Criminal Responsibility 5-6 (paper read at the annual meeting of the American Society of Criminology, Dallas, Texas, Nov. 1978)).

between twelve and fifty years of age are likely to be in the paramenstrual week of their cycle but only a tiny fraction of these women commit violent crimes. Despite this fact, considerable publicity is being given to the notion that women are more likely to endanger themselves and others during their paramenstruum time. For example, a recent *New York Times* article[28] stated that women in the paramenstruum are vastly overrepresented among women involved in car accidents (53%), newly admitted women prisoners (49%), emergency hospital admissions (53%), and attempted suicides (more than 50%). Such data neglect the fact that the hormonal changes involved in the menstrual cycle can be set off by emotional crises, as well as precipitating them. Nevertheless, the medicalization of menstrual distress is being taken seriously by some legal communities: courts in France and Britain recently accepted premenstrual syndrome as a "mitigating circumstance" in violent crimes.[29]

To summarize, instead of challenging the old assumptions about the inherent nature of women, social scientists are content to employ them to explain the noted discrepancies in the types and rates of crime committed by women and men. This theoretical bias sensitizes us to the importance of examining whether the bio-psychological theory of female criminality has affected criminal court sentences. We are concerned, therefore, with the degree to which sex-based differences in criminal court sanctions[30] are related to sex-based assumptions regarding the etiology of criminal behavior.

II. Study Design

A. An Empirical Test of the Bio-Psychological Model

In order to operationalize the above-noted inquiry, we used quantitative data to test three interrelated propositions. First, from information provided in presentence investigations, we considered whether probation officers are more likely to identify biological and psychological factors in the backgrounds of their female clients than their male clients. Second, having established some evidence of bias in the depictions of an of-

28. Robin Henig, *Dispelling Menstrual Myths*, N.Y. Times, March 7, 1982, section 6 (magazine), at 64, 68.

29. *Id.* at 78.

30. Ilene Nagel & John Hagan, *Gender and Crime: Offense Patterns and Criminal Court Sanctions* in 4 Crime and Justice: An Annual Review of Research 91 (Michael Tonry & Norval Morris eds. 1983).

fender population, we then assessed whether and how these depictions influenced sentencing recommendations. Based on the idea that men may be more likely to attribute crime in women to stereotypes about the "inherent nature" of women, we propose that the influx of female probation officers might diminish previously noted findings of gender-based leniency in sentencing.

B. Data

The data consist of 1,558 male and 1,365 female defendants who were processed in the adult probation department of Hennepin County (Minneapolis) Minnesota between the years 1965 and 1980. The sample population was convicted of the crimes of theft, forgery and drug law violations. We obtained information on these defendants by coding the available material in the probation files: a state criminal record, letters of reference, court records and a presentence investigative report.

C. Methods and Measurement

Table I presents the variables used in this analysis, the manner in which they were coded and their distribution within sex categories. The first variable in this table—the probation officer's sentencing recommendation—is our *dependent variable*, or the outcome we are interested in predicting. Our decision to examine the probation officer's recommended disposition, rather than either actual judicial disposition or an earlier phase of the adjudication process, is based on two factors. First, the majority of the empirical research assessing the relationship between gender and criminal court sanctions suggests that when differential treatment on the basis of sex occurs, it is most likely to occur in the decision as to pretrial release status and the decision as to sentence severity.[31] The latter decision, which almost always includes a presentence investigation, involves the kind of data which is particularly relevant to the present inquiry. The presentence investigation is designed to give the court additional information on an offender in order to arrive at the appropriate case disposition. Charged with the responsibility of assessing offenders' legal and social biographies, probation officers determine what factors in an individual's life will come to the court's attention. Probation officers, then, are instrumental in identifying what

31. *Id.* at 135.

can be considered various aspects of the biopsychological model. Second, previous research has demonstrated that a strong association exists between the probation officer's sentencing recommendation and the ultimate court sentence.[32] In fact, it has been estimated that recommended disposition and judicial disposition concur in about 90% of the cases.[33] Accordingly, the probation officer's recommended sentence is essentially equivalent to sentence severity.

The *independent variables* were selected for the analysis primarily on the basis of our theoretical concerns. Probation officers gather information on all aspects of an offender's life from family members, friends, previous employers and, if they feel it warranted, medical professionals. From this information, we were particularly concerned with garnering data on the physical and mental histories of the offender population. We were able to do this in two ways. First, in the capsule summaries under the headings of family history, employment record and offense history, we found data on the following variables: drug (x_4) or alcohol (x_5) abuse, either of which can be related to physical or emotional problems; the number of times the defendant had seen a psychiatrist for mental health care (x_7); and physical health record (x_6). Additionally, the relationships in which women are involved,[34] or in which they fail to be involved,[35] have been linked to their emotional stability and, hence, their criminality. Accordingly, we thought total number of marriages (x_8) might also be a characteristic worth examining. Each of these variables is considered to be indicative of the biopsychological model.

Second, in a summary evaluation of the offender's case, the probation officer usually notes what she or he considers to be the source of the offender's problems. This information also allowed us to ascertain to what extent probation officers use biological and psychological data in a sex-specific manner. As shown in Table II, the set of variables (x_3) which operationalized the various rationales probation officers had for an of-

32. *See* John Hagen, *The Social and Legal Construction of Criminal Justice: A Study of the Presentencing Process*, 22 Social Problems 620, 628 (1975); Martha Myers, *Offended Parties and Official Reactions: Victims and Sentencing of Criminal Defendants*, 20 Soc. Q. 529, 534 (1979); James Unnever, Charles Frazier & John Henretta, *Race Differences in Criminal Sentencing*, 21 Soc. Q. 197, 202 (1980).

33. Robert Carter & Leslie Wilkins, *Some Factors in Sentencing Policy*, 58 J. Crim. Law, Criminology, & Police Sci. 503 (1967).

34. Thomas, *supra* note 18.

35. Konopka, *supra* note 25.

fender's criminality include both biopsychological and environmental data. Specifically, where the probation officers viewed the source of the problem as either family disorganization, health problems or substance abuse (drugs/alcohol), we assume a psychological or biological causal model is operating. Where a poor upbringing, deviant peer group influence, or criminal orientation is cited, we assume that the criminality is being attributed to environmental factors. The reader should note that "criminal orientation/crime prone" is our own notation for a variety of explanations, all of which suggested that the individual had spent his or her life involved in criminal activity.

Third, the analysis also included the probation officer's sex (x_9). This reflected our concern with whether the biopsychological model is associated with the traditionally male-dominated courtroom. For example, if we found that physical and psychological problems were more apt to influence the dispositions recommended for female offenders, we wanted to know if this association existed regardless of the probation officer's sex. If this relationship did not exist when the officer's sex was factored out, the biopsychological model has implications for issues of discrimination on the part of male probation officers in the processing of female offenders.

Finally, our decision to include the number of prior arrests (x_1) and offense severity (x_2) is based on prior sentencing research.[36]

The analysis primarily uses conventional multiple regression procedures.[37] Multiple regression allows us to specify which variables have a significant impact on the dependent va-

36. Ilene Bernstein, William Kelly & Patricia Doyle, *Societal Reaction to Deviants: The Case of Criminal Defendants*, 42 Am. Soc. Rev. 743 (1977) (hereinafter Bernstein I); Ilene Bernstein, Edward Kick, Jan Leung & Barbara Schulz, *Charge Reduction: An Intermediary State in the Process of Labelling Criminal Defendants*, 56 Soc. Forces 362 (1977) (hereinafter Bernstein II); Martha Myers & John Hagan, *Private and Public Troubles: Prosecutors and the Allocation of Court Resources*, 26 Soc. Problems 439 (1979); John Hagan & Kristin Bumiller, *Making Sense of Sentencing: A Review and Critique of Sentencing Research* in Sentencing Research (Alfred Blumstein ed. 1983). We do not control for offense type but, rather, offense severity. Controlling for offense type necessitates the inclusion of numerous variables to accurately capture the variety of crimes encompassed by the generic categories of drug law violations, theft and forgery.

37. For excellent examples of the use of multiple regression in legal research, see Michael Finkelstein, *The Judicial Reception of Multiple Regression Studies in Race and Sex Discrimination Cases*, 80 Colum. L. Rev. 737 (1980); Franklin Fisher, *Multiple Regression in Legal Proceedings*, 80 Colum. L. Rev. 702 (1980); Ilene Nagel & John Hagan, *The Sentencing of White-Collar Criminals in Federal Courts: A Socio-Legal Exploration of Disparity*, 80 Mich. L. Rev. 1427 (1982).

riable. More specifically, the regression coefficients for each independent variable (noted as "b" and "beta" in Tables II and III) express the relationship between the variable of concern and the dependent variable, once the effects of the other variables have been taken into account. In effect, then, we are simulating a controlled experiment where values of one independent variable are manipulated in order to observe their influence on the dependent variable. Utilizing this kind of statistical technique is particularly important when discriminatory treatment is the issue. Before we can conclude that biological and/or psychological factors have the greater influence than do social factors on dispositions recommended for females, we must be sure that other factors, which are known to influence the sentencing process, are held constant. For example, if we failed to control for the severity of the offense and subsequently found that the biopsychological variables have no influence on sentencing recommendations, we might erroneously conclude that the traditional theoretical assumptions about female criminality have had no impact on the criminal court. However, since offense seriousness is usually the main predictor of case disposition,[38] one cannot ascertain if or how other factors influence sentencing decisions until this variable has been held constant. Thus, multiple regression estimates the relationships between the dependent variable and the independent variables by extracting from each variable the effects of the others.[39] Additionally, tests of significance on the coefficients for each independent variable allow us to assess the probability that any effect we observe is a chance occurrence.

---

38. Herbert Jacob & James Eisenstein, *Sentences and Other Sanctions in the Criminal Courts of Baltimore, Chicago and Detroit*, 90 Pol. Sci. Q. 617 (1975-76); Lawrence Tiffany, Yacob Arichai & Geoffrey Peters, *A Statistical Analysis of Sentencing in Federal Courts: Defendants Convicted After Trial, 1967-1968*, 4 J. Legal Studies 369 (1975); Michael Gottfredson & Michael Hindelang, *A Study of the Behavior of Law*, 44 Am. Soc. Rev. 3 (1979).

39. While the dependent variable is an ordinal level measure, there are strong arguments for assuming that the use of parametric statistics (*i.e.*, statistics designed for continuous-interval level data) with this variable will not confound the analysis. *See, e.g.*, Sanford Labovitz, *Some Observations on Measurement and Statistics*, 46 Soc. Forces 151 (1967); Sanford Labovitz, *The Assignment of Numbers to Rank Order Categories*, 35 Am. Soc. Rev. 515 (1970); Sanford Labovitz, *In Defense of Assigning Numbers to Ranks*, 36 Am. Soc. Rev. 521 (1971). R.P. Boyle, *Path Analysis and Ordinal Data*, 75 Am. J. Soc. 461 (1970); George Bohrnstedt & T. Michael Carter, *Robustness in Regression Analysis* in Sociological Methodology (Herbert Costner ed. 1971).

III. Findings

In presenting findings from the empirical test of the biopsychological model, we focused on the three interrelated inquiries separately.

A. Establishing Sex-Based Differences

Tests of significance calculated for the distributions of our independent variables within categories of sex appear in Table I. These statistics address the question whether biopsychological factors are more likely to appear in the presentence investigations completed on women than in the ones completed on men. We find that almost uniformly our measures of the offender's psychological and biological characteristics vary significantly between the sex categories.

Beginning with the evaluations made by probation officers as to the source of the offender's problem, we find that for men, 28% are seen as having a criminal orientation, 33% as having a drug or alcohol problem and 8% a poor upbringing. At least two of these factors are not attributed as frequently as causes of female criminality: only 17% of the women are viewed as being crime prone and only 21% as having a drug or alcohol problem. Female criminality, by contrast, appears to be attributed to the affective areas of a woman's life: for example, by comparison to men, crime in women is more often viewed as due to family problems (17% of the women vs. 5% of the men) and peer group influence (17% of the women and 9% of the men).

Turning to other indicators, we continue to find significant sex-based differences. These differences do not, however, always reflect what probation officers commonly see as the problem(s) pertaining to each gender's criminality. For example, the presentence investigations indicated that women (34%) had more health problems than men (25%) and reported more instances of psychiatric care than men ($\bar{x}$ = .713 and .387, respectively). Nevertheless, probation officers are no more likely to point out health problems as the source of a female offender's problems than they are a male offender's problems. The sentencing reports also recorded more excessive drug use among women (32%) than men (26%) and, conversely, more alcohol abuse among men (29%) than women (17%). Since the variable measuring chemical abuse as the source of the offender's problems does not distinguish between alcohol and drugs, probation officers' more frequent association of drug or alcohol use with male criminality than female criminality may

be due to the way the data was coded. Finally, consistent with the probation evaluation that a woman's problems are more likely to be family-related than a man's, women reportedly have had more marital disorganization than men.

TABLE I. Variables, Scale, Notation and Adjusted Frequencies (percent)

Notation	Variable	Scale	Adjusted Frequencies Males (N=1558)	Females (N=1365)	x^2 or Difference of Means
y	Probation Officer's Sentencing Recommendation	0. Suspended/Fined	3.3	4.4	122.095
		1. Probation	48.4	68.9	p=.001
		2. Workhouse	29.8	18.3	
		3. Prison	18.5	8.4	
x_1	Number of Prior Arrests	Interval	$\bar{x}$ = 3.744 (s.d.= 5.318)	$\bar{x}$ = 1.917 (s.d.= 3.395)	115.402 p=.001
x_2	Offense Severity (max. statutory penalty)	Interval	$\bar{x}$ = 8.031 (s.d.= 6.251)	$\bar{x}$ = 7.589 (s.d.= 4.357)	4.763 p=.05
x_3	Source of Defendant's Problems				
	a. Family	0=No	94.8	82.9	69.711
		1=Yes	5.2	17.1	p=.001
	b. Health	0=No	91.3	90.1	.641
		1=Yes	8.7	9.9	NS
	c. Crime Prone	0=No	71.8	82.9	33.677
		1=Yes	28.2	17.1	p=.001
	d. Drugs/Alcohol	0=No	68.7	78.9	25.545
		1=Yes	31.3	21.1	p=.001
	e. Poor Upbringing	0=No	91.6	94.0	3.863
		1=Yes	8.4	6.0	p=.05
	f. Peer Group	0=No	90.7	82.5	27.759
		1=Yes	9.3	17.5	p=.001
	g. Fiscal	Excluded	91.2	88.6	3.255
			8.8	11.4	

x_4	Drug Use	0. Never	42.8	39.8	11.551
		1. Minimal	14.3	14.5	p=.05
		2. Moderate	16.9	13.9	
		3. Excessive	26.0	31.7	
x_5	Alcohol Use	0. Never	45.0	61.1	65.449
		1. Minimal	13.5	11.9	p=.001
		2. Moderate	12.0	10.4	
		3. Excessive	29.4	16.5	
x_6	Physical Health	0. No problems	73.0	64.9	35.239
		1. Past problems	2.4	1.1	p=.001
		2. Current problems	24.5	34.1	
x_7	Incidents of Psychiatric Care	Interval	$\bar{x}$ = .387 (s.d.= 1.479)	$\bar{x}$ = .713 (s.d.=2.022)	22.890 p=.001
x_8	Total Number of Marriages	Interval	$\bar{x}$ = .506 (s.d.= .755)	$\bar{x}$ = .610 (s.d.= .799)	12.894 p=.001
x_9	Probation Officer's Sex	0. Female	17.5	59.3	541.996
		1. Male	82.5	40.7	p=.05

In summary, the data presented in Table I indicate sex-based differences in these offenders' biopsychological histories. Health, psychiatric, and family problems and marital disorganization are all reported more frequently in the female offenders' files than in male offenders' files. Whether and how these differences affect the sentencing recommendations for male and female offenders, respectively, is our next question.

B. Explaining Sentencing Recommendations with the Biopsychological Model

Table II presents only the statistically significant results from regressing the probation officer's recommended disposition on all of our independent variables.[40] Our primary interest in the results of these regressions was to see whether and how the biopsychological variables affected the respective sentences recommended for male and female offenders. We find that there are in fact significant differences in how these variables are used in female and male offenders' cases.

First, Table II reveals that of the six variables which have a significant effect on sentencing recommendations, four are derived from the probation officer's opinion as to the source of the offender's problems. Within these variables, the most important factor for both sexes in the determination of recommended disposition is whether the probation officer views the offender as "crime prone."[41] Since criminal courts are particularly sensitive to indications of prior criminality, this finding is not especially surprising. That is, we would expect a variable which reflects prior criminal activity and the offender's general deviant life style to be a strong indicator of criminal court disposition. Second, having taken this information into account, probation officers use the remaining data they have on these women and men quite differently. Specifically, the beta coefficients indicate that the male offender's upbringing and

40. The multiple regression analyses initially consisted of regressing probation officers' sentencing recommendation for all independent variables. An examination of the zero-order correlations revealed no evidence of multicollinearity. (Multicollinearity refers to the situation in which some or all of the independent variables are highly intercorrelated, thereby making an assessment of the relative importance of the independent variables impossible.) The non-significant variables ($p > .05$) were then removed from the models and each regression equation was re-estimated.

41. The relative importance of each variable in predicting the sentencing recommendation is determined by the size of the beta, or standardized regression, coefficient.

TABLE II. Zero order correlations and significant regression coefficients in models explaining probation officers' sentencing recommendations for males and females.

VARIABLES		MALES			FEMALES		
		r	b(std. error)	beta	r	b(std. error)	beta
x_1	Prior Arrests	.18	.011(.003)	.107	.13	.006(.003)	.055
x_3	Defendant's Problem						
	b. health	−.03	.264(.109)	.091	.01	.251(.075)	.104
	c. crime prone	.30	.732(.079)	.399	.41	.872(.061)	.457
	d. drugs/alcohol	−.07	.220(.078)	.126	.06	.311(.056)	.177
	e. upbringing	.07	.569(.112)	.190			
x_5	Alcohol Use	.13	.070(.022)	.112			
			R^2 = .15			R^2 = .20	
			N = 760			N = 871	

the extent of his chemical abuse are judged to be the next most important variables in determining the type of disposition he will receive. For a woman, the environment in which she was raised has no effect on her sentence. Furthermore, a record of substance abuse predicts less severe recommended dispositions for men, but more severe ones for women. A similar finding emerges for the health coefficient: for men a history of health problems points to a less severe recommended disposition and for women a more severe one.

Third, not only do the same variables predict disparate outcomes depending upon the offender's sex, but we were also able to account for more of the factors that influence the recommended dispositions for women than men and we were able to do so with fewer variables. Specifically, the four significant variables for women account for 20% of the variation in probation officers' recommended dispositions. By contrast, for men, only 15% of the variation is explained by six significant variables.

In summary, the results from the second portion of our analysis indicate that sex-based discrepancies do, in fact, exist in the degree to which biopsychological data influence sentencing recommendations. We found that probation officers (1) take account of an environmental factor ("poor upbringing") only in men's cases and (2) allow health and substance abuse (alcohol and/or drug) problems to mitigate the sentences they recommend for men but not women. Accordingly, we turn to our final inquiry: whether changes in the sex ratio of the probation staff over the past sixteen years have affected the use of these biopsychological variables in determining sentencing recommendations.

C. *The Effect of Time and Changes in the Probation Staff*

Table III presents the regressions for male and female offenders across four time spans, including the probation officer's sex. The most striking feature of this table is that, overall, the four separate models appear significantly different from the model with all years combined (*i.e.*, Table II).[42] Although the direction of the coefficients predicting more or less severe

42. Prior research has also shown that aggregating data can obscure sentencing disparities based on extra-legal characteristics. Randall Thomson & Matthew Zingraff, *Detecting Sentencing Disparity: Some Problems and Evidence*, 86 Am. J. Soc. 869, 877-78 (1981).

sentences differed in some important ways in Table II, we found considerable overlap in the variables which predicted recommended dispositions for women and men. In Table III, however, we find almost none. In fact, the only variable which does not interact with the offender's sex is "crime-prone." Across the sixteen years and regardless of the offender's sex, a probation officer's view of an offender as being crime-prone is the most important predictor of the officer's subsequent recommendation.

Limiting our discussion to those findings upon which we have not previously commented, we can make three observations. We find, first, during the entire sixteen years that only two variables associated with the biopsychological paradigm have a significant influence on the sentences recommended for male offenders: number of marriages and drug use. However, for the female offenders, in three of the four time periods we find psychiatric and health coefficients emerging as significant predictors of recommended dispositions. While the relative importance of these variables appears to be declining, women with histories of mental health problems are significantly more likely to receive the more severe sentencing recommendation in both 1969 and 1980.

Second, and more generally, we find that the use of biopsychological data becomes notably less applicable to female offenders over the sixteen year time span. Specifically, in 1965, we are able to account for roughly one-half of the variation in recommended dispositions with the biopsychological model; by 1980, this model accounts for only one-tenth of the variation in these recommendations. Close examination reveals, at least in the earlier time span, a significant proportion of this explained variation is due to our including the probation officer's gender in the equation. In the 1965-1968 model, only three variables emerge as significant predictors of recommended disposition: criminal orientation, probation officer's gender and family problems. The latter, taken as an indicator of the biopsychological model, is the least important. As such, we cannot conclude that the biopsychological model itself explains 49% of the variation in sentencing recommendations for women. Instead, it appears that the probation officer's sex has a substantial influence on this model.

TABLE III. Significant regression coefficients in models explaining probation officers' sentencing recommendations for males and females within four 4-year intervals.

	1965 - 1968				1969 - 1972				1973 - 1976				1977 - 1980			
	MALES		FEMALES		MALES		FEMALES		MALES		FEMALES		MALES		FEMALES	
Variables	b (std. error)	beta	b (std. error)	beta	b (std. error)	beta	b (std. error)	beta	b (std. error)	beta	b (std. error)	beta	b (std. error)	beta	b (std. error)	beta
x_1 Prior Arrests	.050 (.013)	.292					.037 (.014)	.149	.004 (.004)	.063						
x_2 Offense Severity							−.012 (.006)	−.106			.031 (.012)	.156	.046 (.013)	.206		
x_3 Defendant's Problem																
a. family			−.321 (.187)	−.140												
b. health											.378 (.142)	.158				
c. crime prone	.398 (.137)	.206	1.359 (.162)	.681	.747 (.140)	.370	1.061 (.148)	.420	.723 (.119)	.364	.510 (.119)	.258	.432 (.096)	.271	.572 (.099)	.346
d. drugs/alcohol							.290 (.094)	.179								
e. upbringing									.379 (.147)	.153						
f. peer group													.461 (.167)	.165		
x_4 Drug Use													.146 (.034)	.250		
x_7 Psychiatric Care							.081 (.025)	.190							.002 (.002)	.061
x_8 Number of Marriages	−.118 (.067)	−.132														
x_9 Probation Officer's Sex			−.346 (.135)	−.208			−.140 (.079)	−.102	.150 (.103)	.086						
Adjusted R^2	.12		.49		.13		.26		.15		.11		.19		.11	
N	180		83		182		227		251		257		235		251	

Third, the result of including the probation officer's sex in these equations reveals not only the relative importance of our indicators of the biopsychological model but also whether the biopsychological model is spurious. Recall that our concern was to be sure that any evidence of the sex-specific application of the biopsychological model was not due merely to paternalism toward female offenders on the part of male probation officers. Since the indicators of the biopsychological model consistently emerge as significant predictors of sentencing recommendations regardless of the probation officer's sex, we find no evidence of a supurious model. Again, however, we note that in the initial time span of 1965-1968, our findings clearly indicate that the probation officer's sex is more important in determining a woman criminal's recommended disposition than the woman's physical or emotional characteristics. In particular, we find there, as we do in the 1969-1972 time span, that male officers are significantly more likely than female officers to recommend that the light dispositions go to women. By 1972, the relative importance of the probation officer's sex is considerably less than in 1968; by 1973 we find it has no impact whatsoever.

In summary, affective and health related problems are used in a sex-specific manner when sentencing recommendations are made to the court. However, we also find that changes in the probation staff, or perhaps the social values of the existing staff, may have diminished this sex-based pattern. Specifically, the biopsychological model accounts for less variation in the sentencing of women in 1980 than in 1965. While some of this variation is due to including the probation officer's sex, we nevertheless observe some changes in the individual coefficients represented in this model. Additionally, by 1973, we have no evidence that the sex of a probation officer influences the recommended disposition.

Conclusion

The primary purpose of this research was to examine the implications of the biopsychological model on the criminal sentences women and men incur. Specifically, we asked: (1) whether the biopsychological data is more likely to appear in the presentence investigations completed on women than in those completed on men, (2) whether and how such data influence sentencing recommendations, and (3) whether changes in the sex-ratio of the probation staff have diminished any effect

the biopsychological model has had on sentencing recommendations.

We found, first, that health and psychiatric problems were reported more frequently in the probation files of female offenders. Second, this sex-based difference influenced the sentencing recommendations probation officers proposed to judges: an offender's childhood environment influenced the sentencing recommendations of male offenders only, and chemical dependency and health problems mitigated a man's recommended disposition but not a woman's. Additionally, by disaggregating the data into four-year intervals, and by including the probation officer's sex, we attempted to assess the influence that changes in probation staff may have had on the previously noted findings. This portion of the analyses is perhaps the most complex and warrants further investigation. Nevertheless, we offer the following information as tentative conclusions.

The source of a male offender's problems was rarely attributed to his emotional or physical make-up. Over the sixteen year period we examined, the only variables related to the biopsychological model and which influence the dispositions male offenders received were total number of marriages and drug use. By contrast, health problems, chemical dependency, family problems and prior psychiatric care were all used to justify the dispositions probation officers recommended for women. The relative importance of these indicators has also varied considerably over time, such that they exhibit less of an influence on sentencing recommendations in 1980 than they did in 1965. Nevertheless, regardless of the probation officer's sex, one or more of the biopsychological variables still emerges as significant. This is an important finding because it suggests that the attribution of female criminality to abnormalities in some aspect of a woman's biopsychological profile is not merely a function of men's sexist assumptions in a male-dominated criminal justice system. Thus, although the influx of women into legal professions may reduce gender-based leniency in criminal sanctions,[43] we find no evidence of this occurring in the area of probation.[44]

---

43. Elizabeth Moulds, *Chivalry and Paternalism: Disparities of Treatment in the Criminal Justice System* in Women, Crime and Justice (Susan Datesman & Frank Scarpitti eds. 1980).

44. Further evidence of this can be found in an analysis of the relationship between recommended dispositions and sex dyads which are composed of the sex of the probation officer and the sex of the client. Specifically, the findings sug-

What, then, can we conclude from these findings? First, we would suggest that social scientists question why different factors influence the recommended dispositions accorded women and men. While our data indicate that there are significant gender-related differences in biopsychological profiles, we need to know whether these differences are, in fact, related to the types and rates of offenses committed by women and men. In other words, a greater incidence of psychiatric care and health problems among female offenders may reflect the fact that women generally use health facilities more than men,[45] and not that ill health is causally related to their criminality. If this is actually the case, sex-specific applications of the data found in presentence investigations only serve to perpetuate the myth that crime in women is antithetical to their "inherent nature" and, therefore, must represent a biological or psychological abnormality.[46]

Second, and relatedly, our results highlight the need for social scientists to explore other ways in which an offender's sex affects decisions about their sentences. The fact that we were only able to explain a very small portion of the variation in both the sentencing recommendations accorded women from 1973 to 1980, and those accorded men for virtually the entire time span, suggests that there are a number of factors which influence a probation officer's disposition which we have overlooked. Previous court processing decisions, such as the number of offenses charged, pre-trial release status, and the type of plea entered may all contribute to the final disposition a probation officer proposes to the bench.[47] Similarly, family composition, the number and ages of children, and employment status should also affect any recommended criminal court disposition.[48]

---

gested that in 1965 and in 1980, both male and female probation officers recommended that female offenders receive the less severe sentences. *See* Candace Kruttschnitt, Legal Outcomes and Legal Agents: Adding Another Dimension to the Sex-Sentencing Controversy (1983) (manuscript available in Department of Sociology, University of Minnesota; publication forthcoming in 1985 in *Law & Human Behavior*).

45. Constance Nathanson & Gerda Lorenz, *Women and Health: The Social Dimensions of Biomedical Data* in Women in the Middle Years 37, 43-45 (Janet Giele ed. 1982).

46. *See* Klein, *supra* note 9, *passim*.

47. *E.g.*, Bernstein I, *supra* note 36, at 747, 751-52; Bernstein II, *supra* note 36 at 375, 379-81; John Hagan, John Hewitt & Duane Alwin, *Ceremonial Justice: Crime and Punishment in a Loosely Coupled System*, 58 Soc. Forces 506 (1979).

48. Candace Kruttschnitt, Sex and Criminal Court Dispositions: The Unresolved Controversy (1983) (unpublished manuscript forthcoming in Journal of Research in Crime and Delinquency).

Finally, we would encourage future scholarship in this area to explore how the Minnesota Sentencing Guidelines[49] may have affected this evidence of gender-based inequality. Our data stop before Minnesota imposed sentencing guidelines on its judges. Since these guidelines were designed, in part, to reduce the influence "extra-legal" criteria have on sentencing decisions, we might expect that the probation officers preparing presentence investigations are now somewhat constrained in the type of biographical data on offenders which they gather and evaluate for the bench.[50] We leave these questions for future research and offer this study as a foundation for work to come.

---

49. Minnesota Sentencing Guidelines and Commentary (rev. ed. 1981) *reprinted in* Minn. Stat. Ann. § 244 app. (West Supp. 1983).

50. For an explanation of the Minnesota Sentencing Guidelines and a discussion of various issues arising under them, see *Research Project: Minnesota Sentencing Guidelines*, 5 Hamline L. Rev. 293 (1982).