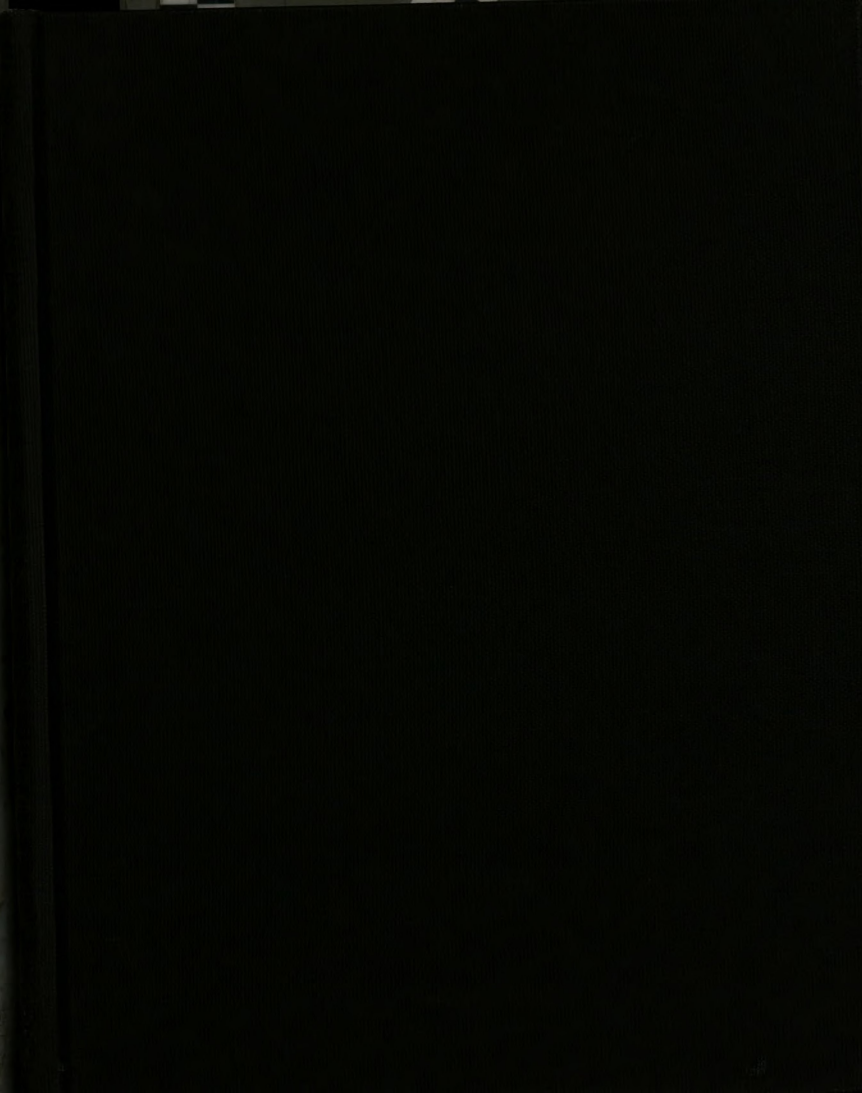


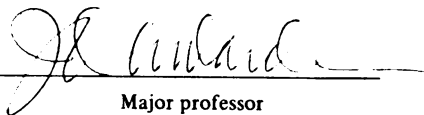




This is to certify that the
thesis entitled
THE SPATIAL DYNAMICS OF RAPE:
THE SAN DIEGO EXAMPLE

presented by
James Lawrence LeBeau

has been accepted towards fulfillment
of the requirements for
Ph.D. _____ degree in Geography


Major professor

Date October 9, 1978



OVERDUE FINES ARE 25¢ PER DAY
PER ITEM

Return to book drop to remove
this checkout from your record.

--	--

© 1978

JAMES LAWRENCE LEBEAU

ALL RIGHTS RESERVED

THE SPATIAL DYNAMICS OF RAPE: THE SAN DIEGO EXAMPLE

By

James Lawrence LeBeau

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Geography

1978

10-1-5

ABSTRACT

THE SPATIAL DYNAMICS OF RAPE: THE SAN DIEGO EXAMPLE

By

James Lawrence LeBeau

Exploratory, static, and aspatial are the salient traits of previous rape research. This study addresses the converse of each trait by constructing and testing hypotheses which entail examining rape through time within a spatial framework. The rape data are from the files of the San Diego, California Police Department for the time period 1971 to 1975. Therefore, the four hypotheses tested in this research are subject to the caveat of consistency through time.

The first hypothesis asserts that the spatial order of rape can be explained by the spatial variation of the family life cycle and land use structure. The consistency through time requirement was still in effect since the independent variables were selected from the 1970 Federal Census and a 1975 Special Census of San Diego. Additional land use variables were selected from 1971 and 1975 land use surveys. The dependent variable was each census tract's proportion of the total reported rapes for the years 1971, 1974, and 1975.

The more than thirty independent variables were reduced to six independent dimensions through factor analytic procedures. The multiple regression model was employed for each year, but further analyses

were suspended because the independent variables were weak explainers of the spatial order of rape. Also, the variables comprising the six independent dimensions for 1971 were incongruent with the six independent dimensions in 1975. Moreover, the analyses for 1974 and 1975 which employed the same independent variables produced different results to the extent that some independent variables changed their relative strengths in explaining and degree or direction of association with the dependent variable. Therefore, the null hypothesis was accepted.

The second hypothesis asserted that the greater the age disparity between the victim and offender in the rapes involving the more anonymous interpersonal relationships, the greater the distance between their residences. Cartesian coordinates for each residence were constructed from which the distances for three age disparity groups were calculated. Through the use of analysis of variance with multiple comparisons, only two of the five years supported the hypothesized relationship. Therefore, the null hypothesis was accepted.

The third hypothesis is identical to the second except race-ethnic membership was substituted for age disparity. Hence, the assertion is that absolute distance between the residences of the participants in intraracial rapes will be less than in inter-racial rapes. Only two years supported this hypothesis and as a consequence the null hypothesis was accepted.

In the fourth hypothesis, a criminal career typology was developed with the main discriminating criterion being the number of offenses committed by one offender before he becomes known and/or apprehended by the police. The essence of this hypothesis is that

significant social and spatial differences emerge when rape is examined within the criminal career framework. The techniques used in testing this hypothesis include analysis of variance with multiple comparisons, cartography, centrography, and chi-square. The null hypothesis was accepted because not one measure was able to define criminal career group individuality that was consistent through time. However, some important relationships were encountered for a majority of the years in this study.

The open/unknown offenders are predominantly strangers to their victims and employ the more perilous methods of operation (i.e., illegal entry of residence and kidnap-attack outdoors). Spatially, there is minimal movement of the victim by the offender and the offenses occur throughout the urban ecological structure. The single offenders are more socially diverse to include all victim-offender relationships and methods of operation. Spatially, there is more joint movement of the victim and offender but the acts are committed throughout the urban ecological structure. The series offenders are similar to the open/unknown offenders in three respects: (1) he is predominantly a stranger to his victims; (2) he employs the more perilous methods of operation; and (3) he moves his victim less than the single offenders. But this offender uses the same geographic space repeatedly and patterns himself in the urban ecological structure.

An important by-product of this research was that a revised rape law which was in effect for all of 1975 had what appears to be a significant effect on the social and spatial composition of rape. First, there was an increase in the rapes that involved the more intimate relationships. Second, there was an increase in the number

of cases that involved alleged victim complicity methods of operation (i.e., hitchhike and meet offender in a bar). Finally, rape exploded spatially to encompass previously inactive census tracts and ecological areas of the city.

Regardless of the uniform acceptance of the null hypothesis, it was proven that rape is not static spatially or socially. Therefore, how valid are the inferences and generalizations generated from other rape and crime studies which were based in only one year or time period?

The material in this project was prepared under grant No. 77-NI-99-0028 from the Law Enforcement Assistance Administration, U.S. Department of Justice. Researchers undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment. Therefore, points of view or opinions stated in this document do not necessarily represent the official position or policy of the U.S. Department of Justice.

The points of view or opinions expressed in this research do not necessarily represent the official position or policy of the San Diego, California Police Department.

To my best friend and wife, Gwen--Thank You!

ACKNOWLEDGMENTS

The list of individuals that I wish to acknowledge is perhaps unusually long, because the personalities who have influenced the development and direction of my dissertation, as well as my graduate career, emanate from the academic disciplines of criminal justice and geography as well as from various criminal justice agencies and organizations.

I would first like to thank Chief William Kolender of the San Diego Police Department for allowing me access to the records and personnel of his department. Moreover, I am deeply indebted to Captain Charles R. Schilder who was assigned by Chief Kolender to coordinate and facilitate my activities in the department. Captain Schilder is a great teacher and because of him I was able to gain unusual insights into the operations of a large urban police department. Thus, I know why the San Diego Police Department is one of the best in the country.

I would also like to thank Mr. Robert J. Polansky of the San Diego County Criminal Justice Planning Board and Mr. Ross Hall of the Comprehensive Planning Organization for their invaluable assistance and cooperation in this research project.

Special thanks must be accorded to Bob and Rose Langworthy. This research would not have materialized without their generosity and

lasting friendship. Bob and I were colleagues as geography graduate students and in the very near future we will be reunited as colleagues in criminal justice.

I would like to thank my adviser, Dr. Joe T. Darden, for his guidance, patience, support, and honesty. Special thanks is accorded to Dr. Robert I. Wittick whose contribution to my personal and professional maturation has been boundless. I would like to thank Dr. Lawrence M. Sommers for his timely advice and guidance and contributing to a very interesting graduate school experience. In addition, I would like to thank Dr. Dieter Brunnschweiler for his participation, advice, and his refreshing ability that reminds scientists that they are also human beings.

I would also like to thank the individuals in the School of Criminal Justice who provided the eclectic environment necessary for professional development. I am indebted to Dr. Ralph G. Lewis for his guidance, confidence, and occasional constructive harassment. Special thanks is accorded to Dr. Robert Lorinskas. I hope in the future that I am as capable as Dr. Lorinskas in conducting seminars of exceptional quality. I would like to thank Dr. John K. Hudzik for his diligent advice and editing of the grant proposal which consequently obtained the funding for this research. I would also like to thank Mr. Steven M. Edwards of the Police Foundation, Dr. Jack R. Greene, Dr. John H. McNamara, and Dr. Victor G. Strecher for their assistance, guidance and friendship.

Special thanks is accorded to the following individuals in the geography department whose brightness, sense of humor and comradeship

have made the journey through graduate school most rewarding: Bill Cochran; Bill Corcoran; Brad Cullen; Bill Gribb; John Harrington; Maureen McDavit; Garrett Peaslee; and Bruce and Mary Pigozzi.

Gratitude is extended to the Law Enforcement Assistance Administration, U. S. Department of Justice for providing financial support for this research through their National Competitive Dissertation Fellowship Program. My thanks go out to Mr. Ralph DeVitto for drafting the maps in the manuscript and to Mr. Mike Lipsey for his very needed technical assistance. To Fayann Lippincott, who typed the manuscript, I offer my many thanks.

Finally, I would like to thank the victims of a husband and father in graduate school. I am eternally grateful to my wife, Gwen and my sons, Zachary and Aaron, for their love, support, sacrifice, patience, and understanding.

TABLE OF CONTENTS

	Page
LIST OF TABLES	xii
LIST OF FIGURES.	xiv
 Chapter	
I. BACKGROUND AND STATEMENT OF THE RESEARCH PROBLEM	1
Introduction.	1
The Magnitude of Rape.	1
The Specific Characteristics of Rape.	2
The Impact of the Feminist Movement on Rape Laws. . . .	3
Statement of the Problem.	7
Significance of the Problem.	8
Organization of the Study	9
Notes to Chapter I.	10
II. REVIEW AND INTERPRETATION OF THE LITERATURE	12
Introduction to Relevant Literature	12
General Implications	12
The Modus Operandi.	15
Crime Scenes.	17
Victim-Offender Relationship	20
Number of Offenders	24
Race Differentials.	25
Age Differentials	28
Crime, Distance, and Movement	30
Open, Single, and Series Offenders	34
Conclusions	36
Notes to Chapter II	36
III. DATA AND METHODOLOGY.	40
Theoretical Framework.	40
Victimization Inferences	40
The Family Life Cycle	40

Chapter	Page
Distortions of the Life Cycle Explanation	43
Other Explanatory Phenomena.	43
Major Rape Variations.	44
The Criminal Career as the Spatial Process. . . .	45
Conclusion	46
The Research Hypotheses	46
The Study Area.	47
The Problems of Choosing an Ideal Research Site . .	47
Data Sources.	52
San Diego Police Department Definition of Terms . .	52
Annual Rape Volume.	53
Operational Definition of Rape.	56
The Description and Collection of Rape Data . . .	59
Rape Variables	60
Land Use Variables.	64
Census Variables	65
Methods of Analysis	67
Introduction.	67
Analysis of the First Hypothesis	67
Analysis of the Second Hypothesis.	69
Analysis of the Third Hypothesis	71
Analysis of the Fourth Hypothesis.	72
Limitations to the Study.	76
Notes to Chapter III.	77
IV. THE SPATIAL DYNAMICS OF RAPE: 1971, 1974, and 1975 . .	82
The Spatial Order of Rape	82
Introduction.	82
The Dependent Variable	82
1971 Factor Structure.	84
Factor I, 1971, Late Stage vs. Family Stage . . .	84
Factor II, 1971, Racial-Ethnic Minorities and Limited Resources	87
Factor III, 1971, Youth Occupance.	87
Factor IV, 1971, Male-Commercial Occupance. . . .	87
Factor V, 1971, Transportation-Manufacturing . . .	88
Factor VI, 1971, Non-working Female--High Resources.	88
The 1975 Factor Structure	88
Factor I, 1975, Male--Commercial	89
Factor II, 1975, Youth Areas	89
Factor III, 1975, Racial--Ethnic Minorities . . .	89

Chapter	Page
Factor IV, 1975, Renters-Low Resources-Small Population Per Household	90
Factor V, 1975, Late Stage vs. Young Family	90
Factor VI, 1975, Manufacturing-Commercial Land	90
Interpretation of Differences	90
The Spatial Distribution of Rape: 1971, 1974 and 1975.	91
Rape Regression Models: 1971; 1974; and 1975	95
Residual Analysis: 1971, 1974, and 1975.	101
Summary	105
Notes to Chapter IV	106
V. DISTANCE AND VICTIM-OFFENDER DEMOGRAPHIC DIFFERENTIALS	108
Age Disparity and Distance.	108
Race - Rape - Distance	113
Introduction.	113
Victim-Offender Racial and Ethnicity Interactions: 1971-1975	113
Distance by Victim-Offender Race/Ethnicity.	117
Conclusions	120
Notes to Chapter V	120
VI. CURSORY EVIDENCE OF SPATIAL-SOCIAL TRENDS	122
Introduction	122
Victim-Offender Relationship: 1971-1975	122
Method of Operation: 1971-1975	124
Selected Measures of Change	128
Conclusions.	131
Notes to Chapter VI	131
VII. CRIMINAL CAREER-OFFENDER STATUS: SPATIAL-SOCIAL REGULARITIES	132
Introduction	132
Open/Unknown Offender Status	133
Single Incident Offender Status	133
Series Offender Status	136
Summary of the Offender Status Groups	138
Annual Fluctuations of Offender Status Groups	138
Distance of the Crime Scene From the CBD	141
The Journey to Crime.	146
Number of Scenes and Offender Status	152
Distance and Offender Status	155
Rape and Offender Status--A Spatial Description.	155

Chapter	Page
Central San Diego--1971	160
Northern San Diego--1971.	160
Central San Diego--1972	160
Central San Diego--1973	164
Central San Diego--1974	164
Central San Diego--1975	167
Northern San Diego--1975.	167
The Shape, Area, and Density of the Offender Status Groups.	170
Offender Status and Urban Ecological Structure	181
Summary	197
Notes to Chapter VII	202
VIII. CONCLUSIONS.	203
Intervening Variables.	207
Notes to Chapter VIII.	210
BIBLIOGRAPHY.	211
APPENDICES	
Appendix	
A. San Diego Police Department Forms	218
B. Data Collection Form.	221
C. Intercorrelation Matrices: 1971 and 1975	225

LIST OF TABLES

Table	Page
2.1 Amir's Initial Meeting Place Types	18
2.2 Amir's Crime Scene Types	19
2.3 Amir's Victim-Offender Relationship Categories	23
2.4 Racial Interactions	26
3.1 San Diego Population Change	50
3.2 Annual Frequencies and Proportions of Single Offender Rapes by Case Status	54
3.3 Annual Frequencies and Proportions of Multiple Offender Rapes by Case Status	57
3.4 Number of Rape Scenes and Definitions	61
3.5 Victim-Offender Relationship Categories	62
3.6 Method of Approaching the Victim.	63
3.7 Land Use Classifications: 1971-1975.	65
3.8 Census Measures: 1970 and 1975 Censuses	66
4.1 1971 and 1975 Factor Structure	85
4.2 Summary Table: Significant Factors in the Spatial Patterns of Rape in San Diego; 1971; 1974; & 1975	96
5.1 Age Distribution of Rape Victims and Offenders: 1971-1975.	109
5.2 Distance and Age Disparity: 1971-1975	112
5.3 Victim - Offender Racial - Ethnic Interaction	114
5.4 Victim-Offender, Race-Ethnic Composition: 1971-1975	116

Table	Page
5.5 Distance Between Residence by Offender-Victim Race . . .	119
6.1 Victim-Offender Relationship: 1971-1975.	123
6.2 Method of Operation: 1971-1975.	125
6.3 Selected Measures of Rape Change: 1971-1975	129
7.1 Open/Unknown Offender Status: Victim-Offender Relationship and Method of Operation	134
7.2 Single Incident Offender Status: Victim-Offender Relation- ship and Method of Operation.	135
7.3 Series Offender Status: Victim-Offender Relationship and Method of Operation.	137
7.4 Offender Status: 1971-1975	139
7.5 Annual Mean Distances of the Crime Scene from the CBD by Offender Status	143
7.6 Annual Distance Variations of Each Offender Status Group .	144
7.7 Single and Series Offenders' Journey to the Initial Meeting Place.	148
7.8 Single and Series Offenders' Journey to the Initial Meeting Place (All Non-Illegal Entry Rapes).	150
7.9 Single and Series Offender's Journey to the Initial Meeting Place (Illegal Entry MO Only).	151
7.10 Annual Scene Averages by Offender Status	153
7.11 Distance and Offender Status	156
7.12 Areal Distributions of Offender Status Types: 1971-1975 .	158
7.13 Selected Centographic Measures for Offender Status Groups: 1971-1975	175
7.14 Offender Status and Ecological Structure - 1971	185
7.15 Offender Status and Ecological Structure - 1974	189
7.16 Offender Status and Ecological Structure - 1975	192

LIST OF FIGURES

Figure	Page
3.1 San Diego 1970 Census Tracts	51
4.1 San Diego--1971 Census Tract Percentage of Total Rapes Reported	92
4.2 San Diego--1974 Census Tract Percentage of Total Rapes Reported	93
4.3 San Diego--1975 Census Tract Percentage of Total Rapes Reported	94
4.4 Standardized Residuals: 1971	102
4.5 Standardized Residuals: 1974	103
4.6 Standardized Residuals: 1975	104
7.1 Central San Diego--1971.	161
7.2 Northern San Diego--1971	162
7.3 Central San Diego--1972.	163
7.4 Central San Diego--1973.	165
7.5 Central San Diego--1974.	166
7.6 Central San Diego--1975.	168
7.7 Northern San Diego--1975	169
7.8 San Diego: Mean Centers of Crime Scenes by Offender Status. 1971-1975.	172
7.9 San Diego Ecological Structure 1971.	184
7.10 San Diego Ecological Structure 1975.	188

CHAPTER I

BACKGROUND AND STATEMENT OF THE RESEARCH PROBLEM

Introduction

This research focuses on the spatial dynamics of rape. The approach is spatial and is derived from one of geography's four traditions.¹ The overall objective is the application of geographic concepts and techniques to better understand the spatial character of one crime.² Rape was selected as the subject of this research because of its individuality and current social ramifications.

The Magnitude of Rape

The Federal Bureau of Investigation estimated that there were 56,090 forcible rape incidents in the nation during 1975. In other words, 51 out of every 100,000 females were rape victims. Since 1970, the frequency of forcible rape has increased 42 percent. Nevertheless, the volume of rape for 1975 comprised less than one percent of the total index crimes and only six percent of the crimes of violence.³ These figures may not appear to indicate that rape is a serious problem for research, but discriminating characteristics of the crime, coupled with current social trends have made it a highly volatile and controversial offense worthy of more research.

The Specific Characteristics of Rape

Rape differs from other crimes in many respects. Firstly, rape is victim-specific; victims are primarily of the female sex while the offenders are of the male sex.⁴ Secondly, rape is currently the fastest increasing crime with the lowest proportion of its cases closed by reason of arrest.⁵ Thirdly, rape is one of the most difficult crimes to successfully prosecute. For example, 58 percent of those arrested for rape in 1975 were prosecuted but 46 percent of these cases were negated because of acquittals and dismissals.⁶ Fourthly, in some states, rape statutes, unlike other criminal statutes, have a corroboration requirement. Corroboration simply means that other evidence must substantiate the victims testimony that the crime actually took place.⁷ Fifthly, rape ranks second to homicide in its severity to the victim. But physical wounds to the victim are only short term when compared to the potential long term psychological and social wounds.

These five characteristics accompanied by the fact that rape has recently become a very important political issue have increased the demand for scientific research on the problem of rape. Organizations identified with, and sympathetic to the feminist movement, have used rape as a prime example of the injustices suffered by women in society, specifically the treatment of rape victims in the criminal justice system.

For a number of reasons, many rape victims have been reluctant to report the crime, file a complaint, and participate in a prosecution attempt. Among those reasons are the following: (1) a majority of the

states have rape statutes which require corroboration, evidence of force, and lack of victim consent; (2) judicial and juror attitudes make the victim feel that she is the one who has to prove her innocence; (3) courtroom practices permit the defense to disclose the victim's sexual history; and (4) police interrogation, investigation, and evidence gathering techniques are perceived to be insensitive to the victim.⁸

But one of the most important factors for victim reluctance to report the crime has been the social stigma attached to the public identification of a rape victim. This stigmatization may take the form of (1) the victim being relegated to an inferior group or class of females as the type of woman who is raped; and (2) considerable doubt among the victim's family, friends, and peers as to her moral character. The result is that it becomes difficult for the victim to retain normal interactions with her family, friends, and peers.

The social stigma attached to rape has been, in some instances, associated with post-rape psychological traumas suffered by the victim. The more manifest forms pertain to the inability of the victim to maintain and/or continue normal male-female social and sexual relationships. Many victims become divorced, some commit suicide. Thus, the treatment of rape victims has included not only institutional and organizational treatment, but social treatment as well.⁹

The Impact of the Feminist Movement on Rape Laws

Public awareness of rape has increased recently, primarily because of the involvement of the feminist movement. Their involvement also has had considerable impact on those organizations in the criminal

justice system directly involved with the processing of rape incidents. As of August 1975, thirteen states had reformed their rape laws, while eight other states had reform legislation pending.¹⁰ An important item in almost all rape statute reforms has been the elimination or modification of the corroboration requirement. Also, disclosure of the victim's prior sexual history has come under considerable modification. Consequently, in some states, (California, Iowa, Michigan, Minnesota, and Nebraska) evidence of the victim's prior sexual history or conduct is only admissible at the discretion of the judge. The evidence is presented to the judge in his chambers where he ascertains the relevancy of the evidence to the case. Essentially, the judge decides if evidence pertaining to the victim's sexual history will be presented to the jury.¹¹

Because of the emphasis on rape reform, many police departments have formed or are in the process of forming special Sex Crimes Analysis Units (SCAU). Police have recognized the individual character of rape and are in the process of developing new investigative techniques and procedures. Female police officers are important members of the specialized staff in a Sex Crime Analysis Unit. Many police officials now believe that in the past, many rape cases failed to reach a successful conclusion because much information and many details were not elicited by male investigators because of the inability of the victim to discuss the incident freely with the police officer.¹² Thus, greater sensitivity towards the victim has become an overriding concern of the police. This is based on the assumption that better treatment of the victims will result in the procurement of essential information

which will expedite the process of offender apprehension and subsequent conviction.

As previously stated, the feminist movement has been critical of the treatment of rape victims in the organization of the criminal justice system. However, the social stigma unjustly attached to the rape victim is another form of harsh treatment which cannot be totally alleviated by the inducement of organizational changes. However, the women's movement has responded to this problem by the creation of the rape crisis center. Thus, an organization has been created to deal with the problems confronted by the victim.

The phenomenon of a rape crisis center began almost simultaneously during 1972 in six cities: District of Columbia, Chicago, Detroit, Philadelphia, Seattle, and Berkeley.¹³ Many factors are attributable to the organization and subsequent diffusion of rape crisis centers but it is certain that a rape victimization survey conducted by the Law Enforcement Assistance Administration (LEAA) in 1972, which concluded that only 25 percent of all rapes are reported, was an important impetus to the formation of rape crisis centers.¹⁴

The present number of rape crisis centers throughout the nation is not known, primarily because these organizations are mostly voluntary with financial support from diverse sources. Thus, the exact number in operation fluctuates. Some centers are created while others cease operation. Nevertheless, the majority of the centers have four fundamental goals:

1. To provide support services to victims.
2. To reform institutions which deal with victims.
3. To educate themselves and the public on rape related issues.
4. To reform the law.

Although rape crisis centers are apparently female in orientation, an anomaly appeared in Philadelphia in 1975 in the form of a men's rape crisis center. Men Organized Against Rape (MOAR) functions as a hotline for male friends and relatives of rape victims. These males are counselled as to their role in helping the rape victim.¹⁵ Rape crisis centers have become a new source of information pertaining to the crime in addition to the traditional source of rape information provided by law enforcement agencies.

The political, social, and organizational responses to the alleged rape problem are responsible for the proliferation of an abundance of information pertaining to the crime. The problem with this information is that it represents nothing more than a mammoth collection of facts. These facts are considerably lacking in organization, measurement, and overall validation of their significance.

But there is one scheme or standard from which the seemingly confusing rape facts can be organized and analyzed. The Uniform Crime Reports for 1975 stated that the crime occurred more frequently in large cities with 250,000 or more inhabitants which accounted for more than 42 percent of all the offenses.¹⁶

Thus, at the national level, rape is not ubiquitous and has a spatial bias in the intensities of its distribution. Moreover, benchmark geography of crime research has proven that the crime is not ubiquitous at the intraurban level.¹⁷ Hence, a novel and different alternative is to incorporate the rape information into a spatial framework. Then, from this framework, the rape information can be organized, measured, and analyzed.

The title of this research is "The Spatial Dynamics of Rape." It is paramount to assume that rape is dynamic. But the spatial dynamics of rape are more optimally understood if they are qualified by concepts borrowed from other academic disciplines. The major organizational concept for the rape typology involves three classifications of the criminal career or simply how many incidents were committed by one offender before he was apprehended. Thus, three criminal career categories are mandatory: (1) Open/unknown-number offenses by a single criminal is unknown; (2) Single-one offender commits one offense and then becomes known to the police; and (3) Series--a single offender commits two or more rapes before he becomes known to the police. The concepts subordinate to the career typology include interpersonal relationship between the victim and offender and most importantly the modus operandi or how the offender approaches the victim. These factors imply that rape can be placed into a typology where there are distinct spatial expressions for each rape type. These expressions are manifest in variations of distance, location, and ultimately pattern. However, these assertions provide nothing more than a sophisticated description of the spatial patterns of different rape types. The optimal goal is to explain these spatial patterns.

Statement of the Problem

The central research problem is divided into three separate but highly interrelated phases: (1) determine and describe the spatial characteristics of rape; (2) determine and describe the dynamics of the spatial characteristics of rape; and (3) explain the spatial characteristics and dynamics of rape.

Significance of the Problem

The significance of the research problem can be measured or justified by two criteria: Firstly, the problem is timely. Rape is a current and very controversial issue. Thus, the interest in rape can be found in many sectors of society; Secondly, rape has never been studied in a detailed spatial framework. Therefore, the critical measures of the problem's significance appeal to rape's timeliness and the different or unique perspective from which the problem is being researched. But the merits of the research problem go beyond the traditional "motherhood and apple pie goals."

The real significance of the research problem is that it directly and indirectly addresses geography's problem of interaction on two levels. The first level deals with interdisciplinary interaction or the borrowing of concepts and ideas from other academic disciplines in order to more clearly understand the subject of rape. In this study, the author has relied heavily on the antecedent research of non-geographers (i.e., criminologists, sociologists, and psychologists). The assumption is that geographers, especially in social research situations, have to investigate other approaches and perspectives in order to extract spatial inferences.

The second level pertains to the interaction between the academic and non-academic sectors of society, essentially, the interaction between the academic oriented geographer and the police department. As previously stated, the problem is to determine, describe, and explain the spatial patterns and dynamics. But a secondary, but less apparent function of the research, is to partially

acquaint geographers interested in crime-related research with the operation of a police department.

In essence, the product of the previous discussions on the significance of a research problem in relation to geography is a question rather than a definitive statement--How functional is social geographic research without acquainting oneself with works of other academic disciplines and partially understanding the operations of the non-academic organizations which for all practical purposes are the sources of data?

Organization of the Study

The remainder of the study comprises four chapters. Chapter two consists of an extensive literature review. The major thrust of this chapter is to examine pertinent literature from all disciplines and extract spatial inferences.

In the third chapter, entitled Data and Methodology, the spatial inferences developed in the previous chapter are placed in a theoretical framework based on theories previously verified pertaining to the structure of urban space. Thus, the research objectives and hypotheses of the study are formulated. Following that is a description of the study area, definition of terms, data sources, and variable description. Particular attention should be paid to the description of sources and format of the rape data. The final portion of the chapter discusses the methods of analyses.

The following four chapters comprise the essence of this study. Chapter IV, The Spatial Dynamics of Rape: 1971, 1974, and 1975, discusses the spatial order of rape. Chapter V, Distance and

Victim-Offender Demographic Differentials, discusses the relationship between age and race disparity with distance. Chapter VI, Cursory Evidence of Spatial-Social Trends, discusses descriptors of annual rape change. Chapter VII, Criminal Career-Offender Status: Spatial-Social Regularities, is the most extensive portion of this study. The discussion pertains to identifying and explaining the salient spatial-social characteristics of different rape types.

The last chapter, Conclusions, is perhaps the most important chapter in terms of an objective self critique of the study and recommendations for future research.

Notes to Chapter I

¹William D. Pattison, "The Four Traditions of Geography," in Geographical Research and Writing, by Robert W. Durrenberger (New York: Thomas Y. Crowell Company, 1971), pp. 85-95. See also David Harvey, Explanation in Geography (London: Edward Arnold (Publishers) LTD, 1969), pp. 114-116.

²Crime as a concept and the problems of interpretation are discussed in Herman Golstein's Policing a Free Society (Cambridge, Massachusetts: Ballenger Publishing Company, 1977), pp. 29-31.

³Federal Bureau of Investigation, Crime in the United States 1975: Uniform Crime Reports (Washington, D.C.: U.S. Government Printing Office, 1976), p. 22.

⁴Although there have been numerous cases of homosexual rape, most have occurred in correctional institutions. There have also been female offender-male victim rapes, but most have been rare incidents.

⁵Lisa Brodyaga et al., Rape and Its Victims: A Report for Citizens, Health Facilities, and Criminal Justice Agencies (Washington, D.C.: National Institute of Law Enforcement and Criminal Justice, 1975), p. 2.

⁶Uniform Crime Reports, 1975, p. 24.

⁷Lynn Olson and Janice Stiers, Rape (Washington, D.C.: National League of Cities, 1974), p. 5.

⁸Ibid., pp. 4-7.

⁹Kurt Weis and Sandra S. Borges, "Victimology and Rape: The Case of the Legitimate Victim," Issues in Criminology, Volume 8, Number 2 (Fall 1973), pp. 104-106.

¹⁰Lucian K. Truscott, "Rape: The Liberals' Law and Order Issue," Oui: For the Man of the World, Volume 5, Number 2 (February 1976), p. 46.

¹¹Brodyaga et al., 1975, p. 273.

¹²Louis C. Cottell, "Rape: The Ultimate Invasion of Privacy," FBI Law Enforcement Bulletin, May 1974, p. 8.

¹³Brodyaga et al., 1975, p. 123.

¹⁴Olson and Stiers, 1974, p. 10.

¹⁵Brodyaga et al., 1975, p. 126.

¹⁶Uniform Crime Reports, 1975, p. 22.

¹⁷Gerald F. Pyle et al., The Spatial Dynamics of Crime (Chicago: University of Chicago, Department of Geography Research Paper Number 159, 1974).

CHAPTER II

REVIEW AND INTERPRETATION OF THE LITERATURE

Introduction to Relevant Literature

It must be noted that this research relies heavily on two previous works: Menachem Amir's Patterns in Forcible Rape (1971) and Gerald Pyle's et al. Spatial Dynamics of Crime (1974). The former represents the most comprehensive and scholarly work pertaining to the phenomenon while the latter represents the only attempt by a member of the geography profession to provide a pragmatic contribution to law enforcement agencies. This contribution was in the form of a crime analysis system in which the main thrust was clearly a spatial one. These two works actually complement each other: Amir discusses the purely sociological aspects of the crime while Pyle's focus, although very general and superficial, pertains to some of the spatial aspects of the crime. The function of these works and others in the review of pertinent literature will be to extract the specific criminological, sociological, and victimological attributes of the crime and place them in a spatial framework.

General Implications

An analysis of rape in Denver, Colorado for the time period, July 1, 1970 - June 30, 1972, yielded four significant facts: (1) sixty percent of the 956 rapes occurred in two areas: one area

contiguous to the CBD and another in Northeast Denver. The commonality between the areas is they have the highest concentration of single women; (2) Seventy-six percent of the victims were single; (3) Fifty-three percent of the victims were between the ages of 16-34.¹ Over two-thirds of the sex offenses occurred in older homes that had been converted to apartments.² These facts, converted into simple geographic implications, define a social space composed of young single females who reside in a morphological space of older apartments or multi-family dwellings.

Such comprehensive, but general information, is not available in published sources for other cities. Thus, information on rape in terms of marital status, site of rape, and definition of victim and offender origin in social geographic space are essentially non-existent. This situation can be attributed to the novelty of rape as an academic interest in general and of geographic interest in particular.

However, some comparisons with other cities can be made, but the time periods of the studies vary considerably. John Macdonald in his Rape Offenders and Their Victims analyzed 200 rapes in the city of Denver for 1968-1969. He concluded that the majority of the victims were single women; only 25 percent were married. Macdonald found the age group of 15-24 years comprised fifty percent of the victims while eighty percent of the victims were under thirty-five years of age. Although the author did not designate the rapes in social space, the number of rapes in the home comprised 33 percent.³

Menachem Amir's comprehensive study of Philadelphia produced somewhat parallel results although the time frame for this study examined all the rape incidents for 1958-1960. Amir noted a somewhat

consistent age pattern of the victims: fifty-six percent were in the age range of 15-29 years of age while eighty percent of the victims were below 34 years of age. The statistics for marital status indicate a strong bias towards the never-married victim. Amir classifies those victims below the legal consent age for marriage as dependents. Thus, dependent and single victims comprise 69.27 percent of the total. Amir concluded that the most prominent rape site was the residence of the victim or offender while an ecological bias was said to be in areas with a high concentration of black population.⁴

The generality of predominant age groups are verified in studies conducted by individual city police departments (Columbus, 1974; DesMoines, 1974; Detroit, 1974; and Memphis, 1974). Although marital status was not reported in these studies, one could conclude that the predominance of the 15-29 and under 34 year age groups would infer a bias towards the single or never-married victim.

The absence of a common reference to the spatial or areal patterns of rape incidents makes accounts of the types of rape sites (e.g., residence, park, alley, etc.) useless since no generalizations as to the relative location can be made. However, in Pyle's work, a more exact spatial definition of rape was revealed. The two tracts which had the majority of the 1971 Akron rape incidents were immediately north of the business district and in the lower westside of the city defined as areas of urban transition, poor housing, and high net population density.⁵

The previously discussed information exhibits two faults besides the aspatial orientation: (1) the information is too general to view rape in a spatial-crime specific framework and (2) the

information implies that the crime is static; hence, no spatial or social variations. The literature review will now turn to those elements which imply a dynamism in the crime.

The Modus Operandi

The first dynamic element in rape is the modus operandi (MO) or method of operation of the offender. The MO is basically a collection of information pertaining to the characteristics and the methods employed by an offender.

Literature pertaining to this information organization scheme first appeared in 1913 in England. A short time later, the modus operandi was established in the U.S. and modified for implementation by August Vollmer, former Chief of Police in Berkeley, California.⁶

However, the scale of the modus operandi is at the individual level since the objectives of the information collection are:

1. identifying a perpetrator by naming suspects whose modus operandi in past crimes fit the facts of the crime being investigated,
2. linking an unknown perpetrator for the purpose of structuring the identity of a suspect from the modus operandi and leads from several connected crimes,
3. storing data on unsolved crimes according to modus operandi to allow comparison with the crime technique of an apprehended criminal and to connect unsolved crimes with an arrestee.⁷

The modus operandi is a highly deductive process whereby the generalities of a crime incident are sorted according to specific peculiarities. Among the information collected in a Modus Operandi are items pertaining to: (1) stolen property descriptors; (2) physical description of the offender; (3) apparent motives for the commission of the crime; (4) time of occurrence; (5) peculiar acts performed by the offender;

and (6) observed peculiarities in terms of personal idiosyncracies and speech characteristics.⁸ These MO elements appear totally aspatial, but there are other elements in a modus operandi with strict geographic connotations. This sort of information is characteristic of many crimes, but in rape, it is imperative in understanding the spatial variation of the crime.

Generally, the rapists will select either a particular environment or scene to commit the crime or will choose a particular victim who displays signs of vulnerability.⁹ In the former case, an offender selects a particular site as a victim source (e.g., parking lots in shopping centers or hospitals). In the latter situation, an offender may attack a woman with certain characteristics (e.g., age, race, or social class) or select a particular victim beforehand and follow her until the opportunities are optimal for the attack.¹⁰ In either case, what constitutes the scene for one rapist may be a victim selection site for another rapist, and both offenders are waiting for the opportunity to initiate the offense.

Regardless of the site, or victim selection methods of operation, the geographic implications are obvious: (1) defining space occupied by victims in the high risk age and marital status group and (2) defining space which is occupied by those land uses which attract great volumes of potential victims through their normal activities of journey to work or school or shopping; or (3) defining space occupied by land uses which enhance the isolation needed for the commission of the act (e.g., vacant lands and recreational or open space). However, the implication must not be made that rape will occur as soon as there is an encounter between the victim and offender.

Crime Scenes

Menachim Amir, in his Patterns in Forcible Rape, developed a series of scenes or locations in a rape event which imply the victims and offenders have some prior social interaction before the offense or the offender moves the victim to a location more conducive to the commission of the crime.¹¹

A rape incident, according to Amir, can be composed of three separate and distinct scenes, locations, or sites: (1) initial meeting place; (2) the crime scene; and (3) the after scene.¹² The initial meeting place is essentially the location where the victim meets the offender. The crime scene is the place where the actual rape takes place while the after scene is the place where the offender leaves the victim. A rape can be very immobile where the initial meeting place fulfills the function of all three scenes. Or a rape can be very mobile where all three scenes are separate and distinct locations.¹³

The initial meeting place is a primary concern in understanding rape in a sociological, psychological, or geographic perspective. As previously stated, the initial meeting place is where the victim and offender meet. Amir relates the importance of the initial meeting place:

The place of meeting and initial interaction can be seen by the would-be offender as a favorable "signal," and can instill in him some "ideas" about the possibility of having the would-be victim accept his suggestions and advances for sexual relations, or of subjecting her by force to such relations. The circumstances of the initial interaction allows the offender to assess the risks which he takes by forcing his intentions upon the woman. He must also decide whether or not he can do it at the same place or whether he must arrange a situation which will offer more security in executing his plan.¹⁴

Thus, the kind of initial meeting place and time will be indicative of the further movements of the victim and offender. Hence, the rapist who breaks into a victim's apartment may find the site amenable for the initial meeting place, crime scene, and after scene while the rapist who picks up a female hitchhiker at a busy intersection must move the scene, thus move the victim to an environment more isolated and conducive to the crime. Thus, the initial meeting place can be assumed to be part of the offender's method of operation (MO). Essentially, this is the method or type of site the offender uses to approach or meet his victim.

Amir was able to develop a typology of initial meeting places which partially imply the victim's situation or activity at the time of the meeting. (Table 2.1).

Table 2.1--Amir's Initial Meeting Place Types.

Initial Meeting Place	Number	Percent
1. At her home or place	171	26.4
2. Where victim stayed, not home or place	52	8.2
3. At offender's home	43	6.7
4. On the street walking	270	41.8
5. In a bar	50	7.8
6. At a party or picnic	17	2.6
7. In the park	5	0.7
8. In front of a bar	22	3.4
9. On the street waiting for a car or bus	16	2.4

Source: Amir, 1971, p. 139.

Although Amir referred to the initial meeting place as "spatial categories," they were not tied to or placed in geographic space. Thus, the false implication can be made that each park or street have the same probability for victimization.

Amir developed a typology of crime scenes or locations but parallelism with the typology of initial meeting places is totally absent in number and specificity. Table 2.2 displays Amir's four crime scene categories with the number and percent of the total rapes which occurred in each crime scene.

Table 2.2--Amir's Crime Scene Types.

Crime Scene	Number	Percent
1. Auto	96	14.9
2. Open spaces	115	17.8
3. Indoors--Outside participant's residence	75	11.6
4. Indoors--participant's residence	<u>360</u>	<u>55.7</u>
Total	646	100.0

Source: Amir, 1971, p. 146.

Like the initial meeting place typology, Amir's crime scenes are over-generalized and most importantly, the crime scenes are not defined in geographic space.

The comparison between Table 2.1 and Table 2.2 shows that the most vulnerable meeting place is one where the victim is walking on the street (41.8%). Amir included the categories of "waiting for a bus or taxi" and "in front of a bar" to increase the percentage to forty-eight.¹⁵ Macdonald's study of Denver parallels Amir's in the

assertion that the street is the predominant meeting place (48.9%).¹⁶ In Table 2.2, the classification "indoors--participant's residence" was the prominent crime scene in Amir's study (55.7%); Macdonald again supported this fact with 54.5 percent of Denver's 22 rapes occurring in the same category.¹⁷ By now, the implication should be clear that rape is not a single site phenomenon. The act itself involves a single site but the interactive processes between the victim and offender may encompass more than one site with a high probability of these sites contained in different social spaces.

However, the third scene (i.e., the after scene) was minutely explored by Amir and has been neglected in other studies. The cause of this situation can be attributed to a small number of cases encountered by Amir involving an after scene (31). In twenty-one of the cases, the victim was returned to the initial meeting place, while in five cases, she was taken home, and in another five cases the victim was left in a remote spot.¹⁸

Victim-Offender Relationship

The interpersonal relationship between the victim and offender plays a significant role in the classification of the crime. Thus, the degree of intimacy or anonymity between the participants is integral in classifying the crime according to its severity as a police and public problem. The degree of intimacy between the participants is also integral in identifying the culpability of the participants and is related to the potential of a successful prosecution.

Essentially, social interaction differentiates between a crime problem in which the police play an important role in its

suppression and a social problem involving a crime in which the police have a low probability of successful suppression and consequential prosecution. A rape between total strangers has a greater potential of becoming a public threat and presents the police with much more investigative work. But when the criminal is apprehended, the probability of a successful prosecution is much greater. By the simple fact that little or no social interaction occurs between the participants in the stranger rape presents the police and public with a crime problem. This situation can be interpreted as one where the offender has the potential to replicate the offense on another victim. Therefore, the offender establishes a definite method of operation in terms of type of initial meeting place, approach to the victim, time of occurrence, and type of victim (age-race).¹⁹

These characteristics of the method of operation are transformed into information utilized by the police to expedite the apprehension of the criminal by attempting to predict his next offense. This information is further utilized as crime prevention information which is disseminated to the public. Thus, the public is warned of potentially vulnerable situations, times, and types of places (again not defined in geographic space). Because of minimal social interaction between the participants, it is alleged that these kinds of rapes will result in successful prosecution because it is assumed there is no complicity on the part of the victim.²⁰

A rape between friends and family presents a different interpretation of the crime. Firstly, rapes between participants of long established intimate relationships do not present the public with a

crime problem nor can the police prevent them. For them, the investigative process is not as tedious and extensive because the victim knows her assailant. Secondly, the probability of a successful prosecution is reduced because of the suspicion of complicity and consent by the victim. The exception is the incest rape which is a commission of one of the most heinous social taboos. The incest case is actually deemed more serious than rape.²¹

The implication is rather clear as anonymity is maximized between the participants, the severity of the rape increases for both the police and the public. Thus, rape among persons of long-established intimate relationships is more of a social problem incorporating a criminal act than it is a widespread criminal problem.

Amir developed seven victim-offender relationships to categorize the Philadelphia rape incidents. Table 2.3 presents the categories and percentages of the 646 incidents appropriate for each category.

Amir's victim-offender relationship (VOR) categories are based on degree of social anonymity or intimacy. Although this classification scheme has served as the VOR base for other studies (Chappell, 1971; Macdonald, 1971; Olson & Stiers, 1974), specific modifications were made for this research. Moreover, this victim-offender relationship issue will be thoroughly explained in the methodological section.

Although the importance of the stranger variety of rape has been expressed, the magnitude of its occurrence dispels the myths that reported rapes are one of the extremes of stranger or friends. However, different studies have shown a predominance of the stranger

Table 2.3--Amir's Victim-Offender Relationship Categories.

Category	Percent
1. Stranger--no previous contact existed and no acquaintanceship established before the offense.	42.3
2. Stranger but general knowledge--offender is known visually to the victim without any other contact between them.	9.6
3. Acquaintance--offender becomes known to victim just before the offense, or she has some prior knowledge about his residence, place of work, name or nickname, but no specific relationship exists between them.	14.4
4. Neighbor--close neighbor, or victim saw the offender before and crossed his way many times.	19.3
5. Close friend or boy friend--offender often in victim's home or dated with her, or having close, direct, or frequent relationship with her.	6.0
6. Family friend--offender is friend of one of victim's family members, often at their home, trusted.	5.3
7. Offender is a family relative--relationship by consanguinity or legal affinity, but not husband-wife or any type of incestuous relationship.	2.5

Source: Amir, 1971, p. 233.

variety of the crime. Amir's Philadelphia study noted the stranger rape accounted for 51.9 percent of the total 646 incidents.²²

Macdonald's survey of Denver (1968-1969) found sixty percent of the incidents were of the stranger variety.²³ Moreover, Olson & Stiers later study of Denver (July 1, 1970 - June 30, 1972) revealed that 67.1 percent of 602 rape cases were of the stranger variety.²⁴ The predominance of the stranger variety was revealed in comparative studies of Boston and Los Angeles with 56 and 91 percent of the rapes of the stranger variety respectively.²⁵

A recently completed national survey of 208 police departments revealed that the proportion of the stranger variety rapes ranged between 57.5 and 63.6 percent.²⁶ Thus, a majority of the reported rapes are of the stranger variety, but this does not negate the importance of other victim-offender relationships.

Number of Offenders

The number of offenders in a rape incident is another scheme for differentiating the crime. Not only does the number of offenders complicate the legal process in terms of ascertaining liability and conspiracy, but according to Lt. Katherine Lesney of the Detroit Police Department Sex Crimes Analysis Squad, "a rape with more than one offender actually constitutes a rape with multiple weapons."²⁷ Essentially, the more offenders in a rape, the more potential force and violence to be implemented to neutralize the victim. However, the number of offenders also has other social and spatial ramifications.

The literature seems to be somewhat consensual in relation to a typology of rape based on the number of offenders. The offender groupings are; (1) single rape; (2) pair rape; and (3) multiple rape. Logically, a single rape involves one offender; pair rape is two offenders and multiple rape involves three or more offenders. The multiple rapes are also known as gang rapes or group rapes.²⁸

Amir noted the phenomenon of multiple rape is practiced by youthful delinquent street gangs.²⁹ Macdonald revealed accounts of multiple rapes conducted by members of motorcycle gangs.³⁰ Hence, both authors bring to light perpetrators which are members of gangs.

Macdonald differentiates the two in terms of age; motorcycle gang members are older than youthful street gang members.

There are sketchy spatial inferences for the multiple offender rapes but Amir noted that there was little mobility or movement of the scenes in multiple offender rapes. Also, this type of rape was predominantly an encounter between strangers.³¹ But, Macdonald indicated that the victims of motorcycle gang rapes are seldom chance victims. Usually, these victims have sought out the company of one gang member, but the initiation rites into the gang include sexual intercourse with all the gang members.³²

Race Differentials

Victim age has been previously discussed, but the age of the offenders remains to be examined. Moreover, the racial status of the offender and victim merits explanation because the potential ramifications can serve as cursory measures of social conflict and spatial mobility of the criminal act itself.

Amir's analysis of 1958-1960 Philadelphia rape data revealed the crime was highly intraracial. Hence, members of a specific racial group were more likely to rape or be raped by a member(s) of the same racial group. Of 646 rapes, 76.9 percent were between blacks; 16.3 percent were between whites; 3.3 percent involved a black offender and a white victim while 3.6 percent involved a white offender and a black victim.³³ Although rape was highly intraracial, it should be reiterated that the majority of the victims and offenders were black; thus, biased towards a socially and economically deprived population.

The intraraciality and bias toward black victims and offenders was replicated in Brenda Brown's study of 1973 rape incidents for the Memphis, Tennessee Police Department. Of 534 rape cases, 67 percent were among blacks; 16 percent were among whites; .56 percent involved a white offender and a black victim while 16 percent involved a black offender and a white victim. Thus, 83 percent of the rapes were intraracial while 16.56 percent were interracial. But it must be noted that the percentage of rapes among whites and those involving a black offender and a white victim were equal.³⁴

A conclusion of interracial rape was reached by Macdonald in his study of Denver.³⁵ However, Macdonald did not present clear verbal or graphic evidence of the interracial claim. In his analysis, three racial groupings were used: White, Spanish American, and Black. Table 2.4 presents a summary of the number of victims and offenders in each racial group.

Table 2.4--Racial Interactions.

Group	Offenders	Victims
1. White	89	120
2. Spanish American	86	42
3. Black	<u>76</u>	<u>31</u>
Total	251	193

Source: Macdonald, 1971, 51 and 76.

The data presented in Table 2.4 depicts a definite white bias towards victims and offenders. However, Macdonald states that three

out of five black offenders attacked white victims.³⁶ At this rate, only forty-five white victims were attacked by blacks. Macdonald failed in the provision of a concise picture of the interracial transactions of victims and offenders, thus he does not substantiate the interracial conclusion.

Weis and Borges in their essay, "Victimology and Rape: The Case of the Legitimate Victim," argue that rape may become increasingly interracial. The basis for this prediction lies with the overall failure of society to proceed on an optimal course for the liberalization of social contact, opportunity, and education. Thus, increased racial conflict and hostility will result from the persistence and extension of social barriers by the majority population. Therefore, interracial rape will be one of the manifestations of social conflict.³⁷ But it should be noted that the authors do not predict which racial group will cross the intraracial boundary.

However, other speculations for the existence of interracial rape exist, specifically, theories relating to the black offender-white victim variety. Lynn Curtis in his article "Rape, Race, and Culture: Some Speculations in Search of a Theory," presents some alternative thoughts. Curtis develops and expands the notion of black politicalization which is somewhat parallel to the position stated by Weis and Borges. However, a second explanation of social interaction is developed whereby the increasing liberalization of white women coupled with an increase in the socio-economic opportunities for the black male lends to an increase in social interaction. Hence, rape may be an inevitable and almost normal by-product of social change.³⁸

Speculations and explanations for interracial rape involving other ethnic or racial minorities are totally absent in the literature. Thus, one questions whether the speculations about black interracial rape are appropriate for other minorities.

Age Differentials

The age of the offender is another important factor in rape. Moreover, the age disparity between the participants has been hypothesized (by Amir) to be indicative of specific types of rape. Statutory rape is the only offense dependent upon a legal age definition. Thus, the victim may give her consent for sexual intercourse, but she is legally defined as being under the age of consent.

Amir's data of offender ages showed a definite bias towards the 15-24 age group.³⁹ As previously stated, this is also the predominant age group of the victim. Other studies concur with the predominant offender age group (Macdonald, 1971; Columbus Police Department, 1974). But Amir has been the only author to attempt to define age patterns between the participants.

Although victims and offenders were of the same age group, Amir found that victims tended to be younger than their assailants. Consequently, the median age for offenders was 23 years and victims, 19.6 years.⁴⁰ The inference of the older the offender, the younger the victim does not contradict the assertion that a majority of the participants emanate from the 15-29 age group. Clarity is produced by examining the volume of participants and their interpersonal relationship.

Amir's data comprised 646 victims and 1292 offenders. Hence, a 2 to 1 ratio of offenders to victims enables a bias towards offenders' age. Secondly, for almost all categories of victim-offender relationships, victim age was within five years of the offender age. But, the categories, family friends and relatives, demonstrated a marked bias towards the victim who was at least ten years younger than the offender.⁴¹ Consequently, as social intimacy increases, the age disparity between the participants also increases.

Amir found the general age disparities in intraracial rape were only plus or minus five years. From this inference, it was contrived that members of the same race have a tendency to be in the same age group.⁴² Age disparity in interracial rape was a different situation entirely. Of the 41 cases involving a black offender and white victim, 18 or 43.9 percent involved a victim at least ten years older than her assailant. In the situation of a white assailant and black victim (29 cases), 55.2 percent involved victims who were within five years of the assailant age, but 31.0 percent of the cases (9) involved a black victim who was at least ten years younger than her white assailant.⁴³ Qualification is necessary because Amir did not express the interracial age disparities as significant (i.e., a chi-square significance level was not obtained). So, he was only reacting on rough percentages of distribution.

Although Amir's work was largely phenomenological, one hypothesis was tested and consequently rejected. Von Hentig, in his article "The Sex Ratio," proposed a demographic explanation for rape stating that rape is caused by a disturbed sex ratio for unmarried persons aged 15-49. Thus, rape emanates from a surplus of

males who have a problem obtaining sexual partners.⁴⁴ Amir found no significant association between sex ratio and rape. Moreover, Amir experimented with different sex ratio formulas adjusting for variation in marital status, race, and different age groups. Still no significant associations were encountered.⁴⁵

Crime, Distance, and Movement

There is a complete literary void referencing the degree of social interaction or interpersonal relationship between the participants with spatial factors. Some relationship categories developed by Amir imply variations in movement and distance. Although conjectural, the categories of neighbor, close friend of boy friend, family friend and relative denote a minimal number of scenes in the crime. Yet, the category neighbor, denotes close spatial proximity, but the possibility exists that persons who are neighbors are also strangers. This hypothetical situation would occur in areas of high transiency, multi-family dwelling units, and renter occupied housing. This kind of area is one where social cohesion and contacts are at a minimum. Thus, this kind of area can be typified as being in a continual state of flux, change, normlessness, or anomie. The potential of rapes between strangers who are spatially defined as neighbors would suggest an inverse relationship between spatial distance and social intimacy.

While concepts such as distance, movement, and spatial interaction may be totally under the purview of the geographer, it is very interesting to note that sociologists and criminologists were

interested in such concepts long before Keith Harries' macroscale article on the "Geography of American Crime, 1968."⁴⁶

Otto Erlanson, in 1946, examined the relationship between the scene of the crime and the residence of the sex offender in Chicago. He concluded that 87 percent of the sex offenders lived in the neighborhood of their offense.⁴⁷ The areal units he analyzed were the Chicago Police Districts. Thus, they were defined as the offender's neighborhood, but the districts had different areal dimensions. Thus, his conclusion was a fallacy. However, the work is significant, because the author was a lieutenant in the Chicago Police Department.

In 1932, White measured the distance between the residence of the offender and the scene of the crime in Indianapolis. White found the mean distance for crimes against the person was .85 miles. The mean distance for crimes against property was 1.72 miles. The mean distance for rape was 1.52 miles (11 cases). Consequently, White concluded that crimes against the person are crimes against neighbors.⁴⁸ Eleven rape cases hardly yields a valid generalization.

Amir developed a criminal mobility triangle to measure the vicinity of offender's and victim's residence to the location of the crime. Vicinity as defined by the author denotes an area of five city blocks.⁴⁹ The usage and validity of this areal dimension is based on the assumption:

That this area is small enough to allow offenders or victims at least to see each other and perhaps even for the offender to have specific knowledge of the victim's reputation."⁵⁰

Nevertheless, Amir developed four mobility categories based on vicinity or area denoting an area of five blocks:

1. Offender lives in area of offense only not victim's residence.
2. Offender lives in victim's vicinity but rape committed elsewhere.
3. Offender lives in vicinity of victim and offense.
4. Offender lives not in vicinity of victim or offense.⁵¹

Although Amir's assumption of the validity of the five block area is questionable, he did uncover some interesting results. Of 1292 offenders, 606 were classified in the third category. However, 557 of the offenders in this category were involved in black intraracial rapes. Of 704 known black intraracial rape offenders, the third category signifies over seventy percent of the black offenders lived within five blocks of the victim's residence and the crime scene.⁵² Therefore, evidence of restricted mobility is present because the majority of the white intraracial events were classified in the fourth or most mobile category.

Amir's examination of the mobility exhibited in gang or multiple offender rapes implied minimal movement of the participants. The majority of these rapes entailed the street as the initial meeting place which in turn also served as the crime scene. Moreover, the crime scene, victim's residence, and the offender's residences were all within a five block area.⁵³ The spatial inference of minimal movement and close proximity of participants' residences transforms to a social space occupied by delinquent gangs defined by social disorganization, poverty, blight, and located near the central business district.⁵⁴

Boggs defined rape as a crime of circumstance. By this classification, rape is an event where the offender perceives the situation as favorable for its commission. Boggs also asserted that rape did not

show a bias throughout the social structure and the offenders were not residents of the same social areas of the crime.⁵⁵ Bogg's work must be questioned however because of her reliance on rape incidents and rape arrest statistics by census tracts. Thus, the inter-connections of movement were generalized and not measured.

Gerald Pyle, a geographer, attempted to measure the distance traveled by the offender to the crime scene. Pyle found the average distance traveled by a rape offender was 1.34 miles.⁵⁶ However, certain methodological problems appear in the text. The distance measurements were derived from the trips of nineteen arrested rape suspects.

Pyle, unlike most researchers, did measure the significance of the movements of offenders among ecological areas. Because of the small number of offenders, Pyle was only able to generalize that areas characterized by inhabitants with above average financial resources imported more than one-third (36.8 percent) of the rapists. Moreover, census tracts averaging a thirty percent non-white population exported more than a third of the rape suspects.⁵⁷

White and Pyle attempted to measure the distance traveled by the sex offender to the crime scene. Although the scarcity of cases leads one to contemplate their validity for theory construction, the importance of distance and movement has long been recognized by police officials. Moreover, a recent publication by National Institute of Law Enforcement and Criminal Justice emphasizes the importance of sex crime units to maintain an offender modus operandi file based on geographic area. The justification is that rapists do not necessarily restrict their attacks to a limited area but may move about.⁵⁸

The literary coverage of rape and associative phenomena have provided some social and spatial inferences that will be incorporated into this research. But many common deficiencies emanate from the literature. First, with the exception of Pyle, none of the authors attempted to place rape in urban geographic space. Secondly, with the exception of Amir and Macdonald, the remaining authors did not discuss the variations in rape by method of operation, victim-offender relationship, and other factors.

Amir's mobility categories considered proximity of the victim's residence, offender's residence, and the crime scene, but he did not include the initial meeting place which is ironical because of the importance he placed on the initial meeting place. None of the authors addressed the issues of social and spatial change. Many have used Amir's work for their conceptual foundation, but Amir's data are from the time period 1958-1960. Since this time, society has experienced a multitude of changes and conflicts. But mobility categories and spatial-social change are subordinate to another rarely discussed issue of rape--the number of offenses one offender commits before he is apprehended.

Open, Single, and Series Offenders

The real substantive question about rape is why some cases are open (offender unknown or not apprehended) and others are closed (offender known and/or apprehended)? Furthermore, the closed cases can be divided into two distinct classifications: (1) single event--offender commits only one offense and then is apprehended; and (2) series--offender commits two or more rapes before he is apprehended.

The series offender has been a critical concern of law enforcement agencies. A report by the Detroit Police Department found that during the first six months of 1974, 24 offenders were responsible for 120 rape incidents.⁵⁹

Another report from a police department asserts that series rapes are the least difficult to prevent since series rapists tend to work in a limited area. Thus, the saturation of the area with patrols would lessen the offender's expectation of a successful crime.⁶⁰ The report did not present any empirical evidence to support this assumption. Moreover, the goal appeared to be prevention or deterrence and not apprehension.

The question of series or repeat offenders and apprehension is discussed in an extensive work by the National Institute of Law Enforcement and Criminal Justice. The first important assertion from this report is lack of antecedent research on the subject of series repeat offenders. According to the report: "Whether or not rape is usually a crime of repeaters (there are no definitive studies on this issue), it is known at least some individual rapists commit multiple offenses."⁶¹ The modus operandi was mentioned as a very good investigative tool for identifying repeaters simply because each offender has an individual method of operation.⁶²

This report also mentioned a strategy for apprehension of a series offender. The strategy was that the police stake-out of areas and the deployment of decoys. The reason for this is that it is assumed that an offender makes repeated attacks in a small geographic area using a similar method of operation.⁶³

In the previous discussion, there were references to geographic space. Although they were poorly qualified and quantified, it indirectly defines the series offenders as geographically distinct. One of the main thrusts of this research is the spatial-social differences between these three offender status groups.

Conclusions

The literature has indicated that rape is not simply a forced sexual encounter between a man and a woman. Instead, rape is dynamic and has many variable attributes. The many relationships and social patterns identified by scholars such as Amir are credible, but their potential significance could be enhanced if they are measured geographically.

Notes to Chapter II

¹Olson and Stiers, Rape, 1974, pp. 4 & 12.

²James Selkin, "Rape," Psychology Today, Volume 8, Number 8 (January 1975), pp. 70-74.

³John Macdonald, Rape Offenders and Their Victims (Springfield, Illinois: Charles C. Thomas Publishers, 1971), pp. 32 7 77.

⁴Menachem Amir, Patterns in Forcible Rape (Chicago: The University of Chicago Press, 1971), pp. 52, 68, 149, 337.

⁵Gerald F. Pyle et al., The Spatial Dynamics of Crime, University of Chicago, Department of Geography Research Paper Number 159 (Chicago: University of Chicago, 1974), pp. 65 & 122.

⁶John J. Horgan, Criminal Investigation (New York: McGraw-Hill Book Company, 1974), p. 61.

⁷Paul B. Weston and Kenneth M. Wells, Criminal Investigation: Basic Perspectives (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970), p. 104.

⁸Charles E. O'Hara, Fundamentals of Criminal Investigation, 2nd ed. (Springfield, Illinois: Charles C. Thomas Publishers, 1971), pp. 597-598.

⁹Selkin, 1975, p. 72.

¹⁰Macdonald, 1971, pp. 57-58.

¹¹Amir, 1971, p. 38.

¹²Ibid., p. 38. ¹³Ibid., p. 137. ¹⁴Ibid., p. 138.

¹⁵Ibid., p. 138. ¹⁶Macdonald, 1971, p. 32. ¹⁷Ibid., p. 33.

¹⁸Amir, 1971, p. 23.

¹⁹George A. Buck et al., Police Crime Analysis Unit Handbook (Washington, D.C.: Law Enforcement Assistance Administration, 1973), p. 39.

²⁰Amir, 1971, pp. 29-231. ²¹Ibid., pp. 29-231. ²²Ibid., p. 234.

²³Macdonald, 1971, p. 29. ²⁴Olson & Stiers, 1973, p. 13.

²⁵Duncan Chappell et al., "Forcible Rape: A Comparative Study of Offenses Known to Police in Boston and Los Angeles," in Studies in the Sociology of Sex, James M. Henslein, ed. (New York: Appleton-Century Crofts, 1971), pp. 169-170.

²⁶Duncan Chappell et al., Forcible Rape: A National Survey of the Responses by Police. Police Volume 1 (Washington, D.C.: National Institute of Law Enforcement and Criminal Justice, March 1977), p. 22.

²⁷Interview, September 16, 1975.

²⁸Amir, 1971, p. 182.

²⁹Ibid., p. 185.

³⁰Macdonald, 1971, p. 167.

³¹Amir, 1971, pp. 344 and 346. ³²Macdonald, 1971, p. 167.

³³Amir, 1971, pp. 44-45.

³⁴Brenda A. Brown, "Crime Against Women Alone: Systems Analysis of MPD Sex Crime Squad's 1973 Rape Investigations," mimeographed (Memphis, Tennessee: Memphis Police Department, 1974), p. 40.

³⁵Macdonald, 1971, p. 51. ³⁶Ibid., p. 51.

³⁷Kurt Weis and Sandra S. Borges, "Victimology and Rape: The Case of the Legitimate Victim, Issues in Criminology, Volume 8, Number 2 (Fall, 1973), p. 108.

³⁸Lynn Curtis, "Rape, Race, and Culture: Some Speculations in Search of a Theory," in Marcia Walker and Stanley L. Brodsky, eds., Sexual Assault: The Victim and the Rapist (Lexington, Massachusetts: D. C. Heath and Company, 1976), pp. 128-129.

³⁹Amir, 1971, p. 52. ⁴⁰Ibid., p. 52. ⁴¹Ibid., p. 238.

⁴²Ibid., p. 57. ⁴³Ibid., p. 57.

⁴⁴Hans Von Hentig, "The Sex Ratio," Social Forces, 30 (1951), p. 448.

⁴⁵Amir, 1971, p. 339.

⁴⁶Keith D. Harries, "The Geography of American Crime, 1968," The Journal of Geography 70 (April 1971):204-213.

⁴⁷Otto A. Erlanson, "The Scene of Sex Offenses," Journal of Criminal Law and Criminology 31 (1966):340.

⁴⁸Charles White, "The Relation of Felonies to Environmental Factors in Indianapolis," Social Forces, 10 (1932), p. 511.

⁴⁹Amir, 1971, p. 91. ⁵⁰Ibid., p. 91. ⁵¹Ibid., p. 92.

⁵²Ibid., p. 92. ⁵³Ibid., p. 344.

⁵⁴See C. R. Shaw and H. P. McKay, Delinquency Area (Chicago, Illinois: University of Chicago Press, 1929) and Frederic M. Thrasher, The Gang (Chicago, Illinois: The University of Chicago Press, 1927).

⁵⁵Sarah Lee Boggs, "The Ecology of Crime Occurrence in St. Louis: A Reconceptualization of Crime Rates and Patterns" (Ph.D. dissertation, Washington University, 1964), p. 80.

⁵⁶Gerald Pyle et al., 1974, p. 150.

⁵⁷Ibid., p. 108.

⁵⁸Lisa Brodyaga et al., Rape and Its Victims: A Report for Citizens, Health Facilities and Criminal Justice (Washington, D.C.: National Institute of Law Enforcement, 1975), p. 46.

⁵⁹Women's and Children's Service Section, "Rape A Brief Profile," mimeographed (Detroit, Michigan: Detroit Police Department, 1974), p. 11.

⁶⁰Lt. Herman Stofle, "Rape Reduction Program," mimeographed, (Columbus, Ohio: Columbus Police Department, January 1974), p. 29.

⁶¹Brodyaga et al., 1975, p. 45.

⁶²Ibid., p. 45.

⁶³Ibid., p. 47.

CHAPTER III

DATA AND METHODOLOGY

Theoretical Framework

Victimization Inferences

The placement of rape in a geographic framework requires that the explanatory process begin with a theoretical base that emphasizes the spatial characteristics of one of the most important components of the crime. The victim has been selected as this component. From the literature, some tentative generalizations about the victim emerge:

(1) she is young (15-29 years); (2) she is dependent or single or never married; (3) she is usually of lower occupational status; (4) her residence is usually an apartment which is often converted from a single family dwelling; (5) she lives in an area with a high concentration of single adults; (6) her residential area, in some studies, has been one undergoing racial transition; and (7) the sexual assault usually occurs in her residence, but the predominant initial meeting place has been the street. Thus, the spatial patterns of the rape victim can be explained by the spatial variation of the social structure.

The Family Life Cycle

The relationship between spatial variation and social structure is linked to the concept of life cycle or stage in the family life

cycle. The antecedent label of urbanization was coined by Shevky-Bell in their concept of Social Area Analysis. The concept referred to the delineation of urban sub-areas by three dimensions: (1) social rank; (2) urbanization; and (3) ethnicity.

The urbanization dimension pertains to the alteration of the traditional family unit because of an increase in the scale of society and changes in productivity. The products of these processes are the decline in the importance of primary production and the dissolution of the family as the basic economic unit. Thus, non-familial production centers in the city and the impact on the family is reflected by differences in fertility rates and the number of females in the labor force.¹

The dimension of urbanization was later refined conceptually and methodologically by sociologists and geographers alike. Thus, the new labels of life cycle or stage in the family cycle emerged, but the concept reflected the more specific processes of intraurban mobility, residential behavior, and space consumption dependent on the status and size of the family.²

Peter D. Salin's article, "Household Location Patterns in American Metropolitan Areas," clarifies the concept of stage in the family life cycle:

One can think of each family as passing through a series of stages. The "family formation" stage occurs when the grown children of an established family leave the parental household and set up households of their own, either as single individuals or upon marriage. After marriage, the new family passes through a "child rearing" stage as children are born and raised to maturity. After its children grow up and form their own families, the original family passes through a state of "attrition" until the death of the remaining household members terminates the original family.³

The spatial expressions of the stages in the family life cycle are theoretically supposed to conform to the Burgess Concentric Zone model of urban growth. Thus, the assumption of a single urban center based on differential accessibility is imperative in the model.⁴

The assumptions in the evolution of the stages in the family life cycle include a temporal increase in income and a progressive increase in family size up to a point in time where size begins to decline.⁵ The combination of these assumptions would suggest a theoretical model in which the family formation stage would exhibit a spatial pattern of high density occupance in close proximity to the urban center. Thus, maximization of accessibility is the overriding theme in order to compensate for a lower income. But as family size and income increase, the spatial patterns move outward from the single focus in a zonal mode because space needs become of primary importance instead of accessibility.⁶

In order to explain the spatial dynamics of rape, it is essential to understand the spatial variation of the stages in the family life cycle. Requirements of specificity stipulate an understanding of the space occupied by persons in the family formation stage, because the age groups of the reported victims would seem to imply this situation. Thus, high potential victim areas would have the same characteristics as the space occupied by persons in the family formation stage. Namely, they are: (1) multi-family dwellings or apartments; (2) renter occupance; (3) lower incomes; (4) unmarried or childless people; (5) solo parents (separated, divorced, or unmarried); (6) the once married but now separated, divorced, or widowed; and (7) short occupancy or transiency.⁷

The connection between the family formation stage of the life cycle and rape victimization implies an emphasis on the spatial behavior and patterns of the female. However, little concrete research has pertained to the specific spatial dynamics of female behavior. But implications do exist and can be justly inserted in this theoretical framework. The alleged job and wage discrimination of women implies certain restrictions on spatial mobility. On the regional scale, Morrill implied that women employed in the industrial sector lie within the lowest wage occupations.⁸ Thus, with limited resources, the residential locational behavior of the female would appear to be restricted to areas where access to job and other activities are prime considerations. Their daily movements are alleged to be less frequent and shorter than males.⁹ Moreover, this situation in the urban area contributes to a smaller perceived city by the female.¹⁰

Distortions of the Life Cycle Explanation

It must not be assumed that the previous discussions are individual to the female case only. The literary implication of parallel victim and offender ages does not entirely exclude the male from the same life cycle environment. Thus, the implication that the spatial patterns of rape can be explained by the spatial variations in the female social structure is only partially true. The literature review indicates that rape is variant and can be differentiated by many criteria.

Other Explanatory Phenomena

Although most rapes occur in the victim residence, this does not negate the importance of rapes in other types of sites. Moreover,

Amir has indicated that while the predominant crime scene was the residence, the predominant initial meeting place was on the street. Hence, a hard inference of movement is presented which implies space that is used by the victim. This can be translated into different land uses; land uses which generate large volumes of potential victims and offenders (e.g., employment and shopping areas) and land uses which are conducive to the commission of the crime (e.g., parks, open space, and vacant land). But the space occupied combined with the space routinely traversed by the victim will still only partially explain the spatial variation of rape.

Major Rape Variations

The phenomenon of black intraracial rape implies that all the locational attributes of the crime (victim and offender residence, initial meeting place, crime scene, and after scene) have high probability of displaying a pattern in constricted space. This is because black residential occupance is confined to restricted space more formally known as the ghetto.¹¹ The same assumption can hold true for the case of Mexican-American intraracial rape.

The literature revealed that victims and offenders come from the same general age group (15-29). But Amir noted that generally, the younger the victim, the older the assailant. Some victim-offender relationship categories can partially explain this phenomenon, but the less intimate relationships would not explain an age disparity alone. Age has its own spatial variation throughout the urban area and the concept of "Family Life Cycle" implies this variation.¹² To reiterate, victims and offenders come from the same general age group, but

offenders are usually older than their victims. Considering only the less intimate relationships, the offender who rapes a young middle or high school victim would imply a certain amount of movement on one of the participants. Since the space of offender source (early family formation) is distinct from the space occupied by the victim (child rearing stage), it is apparent that some intervening variable is responsible for the explanatory voids.

The Criminal Career as the Spatial Process

The criminal career or simply the offender's status is the explanatory variable which fills in the grey areas. Information (facts or knowledge) about a rape incident is essentially what differentiates the offender status groups of: (1) open; (2) single event; and (3) series.

The literature has revealed that the series group possesses distinct geographic information in the form of repeated attacks in a small area. Moreover, these repeated assaults are qualified by criminological information in the sense that the methods of operation are similar or identical.

It is logical to assume that the criminological information pertaining to the single event offender would be the more intimate victim-offender relationships. Thus, when the victim reports the crime, the police know who to apprehend and interview.

It is also logical to assume that the open offender status group is such because there is not enough tangible geographic or criminological information to identify a suspect. Thus, the

assumption is that the offender status groups are a function of different geographical and criminological variables.

Conclusion

Many spatial and criminological factors contribute to the overall explanation of the spatial variation of rape, but explanation can be obtained on two resolution levels. The first level, a general one, obtains explanation by determining the associations of rape as an aggregate with general measures of urban spatial structure. The second level, a more specific one, obtains explanation by first disaggregating rape into categories of offender status followed by the quantity and quality of the spatial-criminological variables associated with each category.

The two levels of explanation are complementary. The first level defines the general spatial framework or setting while the second level identifies the specific relationships occurring in the general spatial framework.

The Research Hypotheses

The theoretical framework implies that the explanation for the spatial variation of rape depends on the variables representative of the life cycle. Moreover, distortions and exceptions to the life cycle explanation have been identified as land uses which attract large volumes of potential victims and racial residential segregation. Thus, it is inferred that rape has a multivariate explanation.

The life cycle theoretical construct generates three inter-related research hypotheses:

Hypothesis 1.--The spatial variation of rape can be explained by the spatial variation of the family life cycle and land use structure. Moreover, the explanation will be valid for different time periods.

Hypothesis 2.--The greater the age disparity between the victim and offender, the greater the absolute distance between the participant's residences. This hypothesis is only valid in the case of the rapes involving less intimate relationships.

Hypothesis 3.--The absolute distance between the residences of the participants in intraracial rapes will be less than interracial rapes.

The fourth research hypothesis differs from the previous three which are testing general relationships of rape. This hypothesis deals with specific relationships of rape.

Hypothesis 4.--Significant social and spatial differences emerge when rape is examined within a framework based on the criminal-offender status.

There are many other hypotheses which could be constructed and tested, but these four are the beginning in terms of determining and explaining the geographic characteristics and significance in a crime-specific situation such as rape.

The Study Area

The Problems of Choosing an Ideal Research Site

The ideal research site had to be a city with a large volume of rape complaints, because the literature review indicates the

different classification schemes for rape. It was desirable to obtain a substantial frequency of each rape type. However, a large volume and a substantial number are rather ambiguous since no other author or agency has differentiated rape to the degree intended in this research.

Two issues were faced in obtaining a research site. First, the research had to be conducted in one political unit. It is obviously false to assume that rape and crime in general are restricted to political boundaries, but the probability of obtaining the co-operation of all the law enforcement agencies in a metropolitan area was questionable. Secondly, and most important, the variables to classify rape are not available to the public in a general statistical format. Thus, the researcher had to have access to the original rape reports recorded by the police. The critical issue here is the access by an outsider to highly confidential information.

Several police departments and officials were presented with an annotated version of the research proposal. Several police departments declined on the basis of confidentiality of information or current department workloads while other departments did not respond at all.

The San Diego, California Police Department was contacted in December 1975 and within a week after the department received the proposal, the author received a positive response. The departments' rapid response prompted the decision to accept the site. Moreover, the research was also endorsed by the San Diego County Criminal Justice Planning Board.

The City of San Diego, California, unlike many other American central cities, is growing. But a detailed description and explanation

of the evolution and growth of the city are not warranted for this study. However, a brief sketch of San Diego's site, situation, economic base and population character will reveal an adequate image of the research setting.

San Diego is the southern most coastal California city contiguous to the Mexican border. The two site assets of the city are its excellent harbor facilities and mild, sunny climate. However, the city's situational characteristics of southern location, excellent sea access, but poor overland access has relegated it to a secondary regional economic center behind the more centrally located and better accessible Los Angeles.¹³

The economic base of the city, in part, reflects its site assets. Today, the city's three largest sources of revenue are manufacturing, military activities, and the visitor industry (tourism/recreation/conventions).¹⁴ The major manufacturing concerns in San Diego are aircraft: aerospace production and electronics. It was the amenities of excellent harbors and mild climate that brought the military and the aircraft industry to the City in the 1920s. World War II and subsequent international tensions coupled with technological improvements have been responsible for the growth of the military (120,000 personnel) and the defense industry.¹⁵ Hence, San Diego's population growth and the multiplier effect on other industries have been tied to the military-defense. However, in the late sixties, retail trade, services, and government employment overtook the predominant position of the manufacturing sector.¹⁶

San Diego's population growth has been phenomenal. In the thirty years following World War II, San Diego went from the

thirty-first to the tenth largest city in the country.¹⁷ Between 1970 and 1975, the population increased from 697,027 to 770,344 inhabitants or a 10.5 percent increase.¹⁸

Figure 3.1 is a reference map of the City of San Diego delineated into 1970 census tracts and aggregated into statistical areas.¹⁹ While the city as a whole increased in population between 1970 and 1975, not all statistical areas had the same experience. Table 3.1 shows the population changes by statistical areas.

Table 3.1--San Diego Population Change.

Statistical Area	1975 Population	1970 Population	Change
Entire city	770,344	697,027	73,317
Central	108,289	114,690	-6,401
Coastal	157,267	162,399	-5,132
Eastern	238,311	232,014	6,297
Kearny Mesa	149,202	144,628	4,574
N. San Diego	72,958	14,586	58,372
S. San Diego	44,317	28,710	15,607

Source: San Diego City Planning Department

It is rather obvious that the mushrooming growth area for the city is North San Diego, while South San Diego would rank second. But the change in population for other areas was not that great. The largest declining area was the Central area which contains the CBD (i.e., tract 53).

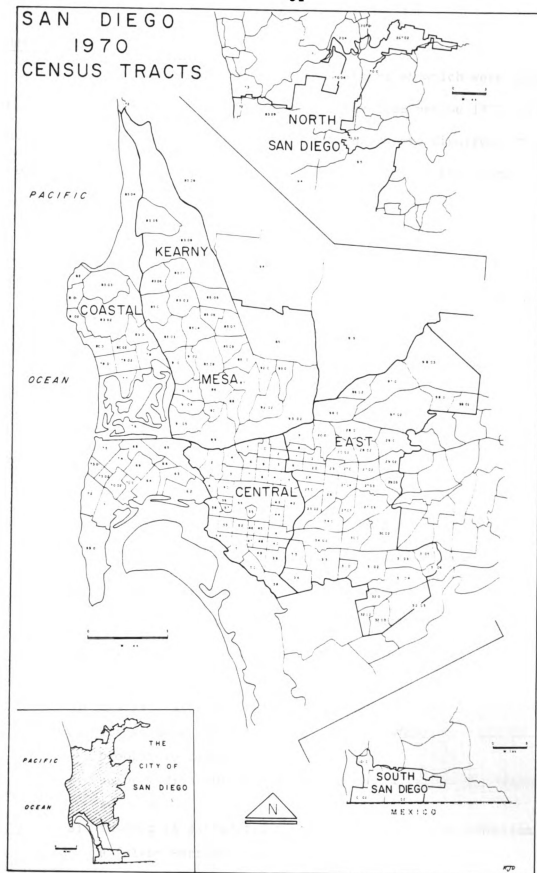


Figure 3.1.

Data Sources

The rape incidents for this study are rapes which were reported to the San Diego Police Department during the time period 1971-1975. However, before statistics of annual frequencies are divulged, it is necessary to qualify the rape volume by the status of the cases in the police department.

San Diego Police Department Definition of Terms

The San Diego Police Department classifies all rape incidents according to their status within the department. The ideal or target classification is the cancelled status. Cancelled simply means the case is closed or cleared and no further work by the police department is necessary. There are different categories of cancelled cases. The following categories are the most common:

1. Unfounded--elements of the rape are not found to be present in the case. This decision comes from the police detectives.
2. Cleared by Arrest--case is found to be a true rape and a suspect is arrested, booked, and charged.
3. Exceptional Clearance--a case can be exceptionally cleared for the following reasons:
 - a) victim refuses to prosecute
 - b) district attorney rejects the case for lack of evidence
 - c) victim moves from the city or dies before the case is brought to court
 - d) suspect dies before the case is presented to the district attorney
 - e) suspect is extradited to another state or jurisdiction on a felony warrant.

Other cases are given the status of open or inactive. In cases with this status, the suspect has not been identified and/or arrested.²⁰

Annual Rape Volume

In order to examine the total number of rape complaints for each year, it is necessary to consider two categories of rape: (1) single offender--rapes committed by one offender; and (2) multiple offender--rapes committed by two or more offenders. Table 3.2 shows the annual frequencies and proportions of single offender rapes by case status.

The greatest frequency for all categories occurred during 1975 (Table 3.2). A peculiar phenomenon is that from 1971 on, there is not a constant frequency increase in all status categories. Moreover, the total frequency of rape does not display a consistent or constant increase through time. The middle year of the study, 1973, has the lowest frequency. Thus, 1973, in terms of frequency can be viewed as a pivotal year. It is pure speculation, but the years 1971 and 1972 could represent the end of a rape cycle, in terms of volume, while 1974 and 1975 represent a second cycle. Therefore, 1973 is the termination of the first cycle and the beginning of the second.

The annual proportions of each case status presents clearer notions of trends (Table 3.2). From 1972 to 1975, the highest proportions are the cleared by arrest cases followed by open/inactive, exceptional clearance, and finally unfounded. The anomaly is 1971 where the cleared by arrest and exceptional clearance cases had their highest proportions (54.5 and 25.7 percent) while the open cases experienced their lowest proportion (12.87 percent). Moreover, this

Table 3.2--Annual Frequencies and Proportions of Single Offender Rapes by Case Status.

Status	1971	1972	1973	1974	1975	Total
Unfounded	7 (6.9)	8 +14.28 (7.07)	7 -12.50 (7.44)	15 +114.00 (10.27)	19 +26.66 (8.87)	56 (8.38)
Exceptional Clearance	26 (25.7)	22 -15.38 (19.46)	14 -36.36 (14.89)	17 +21.42 (11.64)	47 +176.47 (21.96)	126 (18.88)
Cleared by Arrest	55 (54.5)	42 -23.63 (37.16)	40 -4.76 (42.55)	62 +55.00 (42.26)	86 +38.7 (40.18)	285 (42.66)
Open/ Inactive	13 (12.87)	41 +215.38 (36.28)	33 -19.51 (35.10)	52 +57.50 (35.61)	62 +19.23 (28.97)	201 (30.00)
Total	101	113 +11.88	94 -16.81	146 +55.3	214 +46.57	668
Total Minus Unfounded	94	105 +11.7	87 -17.14	131 +50.57	195 +48.85	612

Source: San Diego Police Department and Calculated by Author.

Note: () = Percent of Column Total; + _____ = Percent Change.

was the only year in the study where the proportion of exceptional clearance cases surpassed the open/inactive events.

Between 1972 and 1975, the cleared by arrest and open/inactive cases exhibit fairly constant proportions with a slight decrease of the open/inactive cases during 1975 (Table 3.2). The exceptional clearance events show a different trend of decreasing proportions from 1971 to 1974 followed by a halt in the decline during 1975. The unfounded events do not present any discernible proportional trends. In summary, the anomalous year, in terms of proportions, was 1971 with three case status groups experiencing extreme proportions.

An examination of the annual percentage changes for each case status presents another picture of trends. First, 1973 has recaptured its role as a pivotal year with all categories experiencing a negative change over 1972 (Table 3.2). However, 1974 marks the beginning of strong positive changes for each group. The open/inactive cases experienced their most radical change between 1971 and 1972 with a 215.38 percent increase. The exceptional clearance cases had their most radical change between 1974 and 1975 with a 176.47 percent increase. In summary, while individual categories may have experienced their more radical increases and decreases in different years--the important issue is that the changes between 1974 and 1975, for all categories, became more positive and pronounced.

The category in Table 3.2 labeled "Total-Unfounded" represents the actual frequencies for each year used in this study. The unfounded events were eliminated from further analysis because accurate data were missing from some cases and their low frequency would make it tedious to qualify their presence in the study.

Table 3.3 presents the annual proportions and frequencies of multiple offender rapes by case status. There were no unfounded cases.

The relatively low frequencies prohibit the precise determination of trends. But the most radical changes occurred between 1974 and 1975 (Table 3.3). The multiple offender rapes increased 120.00 percent between these years. Moreover, the most abrupt increases occurred in the exceptional clearance and the cleared by arrest categories (1600.00 and 60.00 percent respectively).

The rape incidents to be addressed in this study include all the single offender rapes minus the unfounded (see Table 3.2). This population will receive the most intensive analysis, while the total number of multiple offender rapes (Table 3.3) will be included for general comparisons with the single offender rapes. However, because of their low and diverse frequencies, the multiple offender rapes will not receive an in-depth analysis.

Operational Definition of Rape

The operational definition of rape for this study is in accordance with the California penal code (P.C. 261.5) which states that

Rape is an act of sexual intercourse accomplished with a female not the wife of the perpetrator and either of the following circumstances:

1. where the female is under the age of eighteen years;
2. where she is incapable, through lunacy or other unsoundness of mind, whether temporary or permanent, of giving legal consent;
3. where she resists, but her resistance is overcome by force or violence;

Table 3.3--Annual Frequencies and Proportions of Multiple Offender Rapes by Case Status.

Status	1971	1972	1973	1974	1975	Total
Exceptional Clearance	7 (46.6)	1 -89.71 (10.00)	3 +200.00 (23.00)	1 -66.66 (5.55)	17 +1600.00 (42.50)	29 (30.2)
Cleared by Arrest	7 (46.6)	6 -19.28 (60.00)	8 +33.33 (61.53)	10 +25.00 (55.55)	16 +60.00 (40.00)	47 (48.95)
Open/ Inactive	1 (6.66)	3 +200.00 (30.00)	2 -33.33 (15.38)	7 +250.00 (38.88)	7 00.00 (17.50)	20 (20.83)
Total	15	10 +33.00	13 +30.00	18 +38.46	40 +122.00	96

Source: San Diego Police Department and Calculated by Author.

Note: () = Column Percentage; + - = Percent Change.

4. where she is prevented from resisting by threats of great and immediate bodily harm, accomplished by apparent power of execution, or by any intoxicating narcotic, or anesthetic substance administered by or with the privity of the accused;
5. where she submits under the belief that the person committing the act is her husband, and this belief is induced by an artifice, pretense, or concealment practiced by the accused, with intent to induce such belief.²¹

The exceptions to this code have already been implied in the text, namely statutory rape.

An important amendment to the penal code went into effect on January 1, 1975. The purpose of this penal code revision was to increase the sensitivity of the courts to the plight of the victim (reduce the feelings in the victim that she is the one on trial). Specifically, the revision pertained to (1) conduct in front of and (2) the instructions given to a jury during a trial. The revisions are as follows:

. . . (a) In any criminal prosecution for the crime of rape, or for violation of Section 261.5, or for any attempt to commit, any such crime, the jury shall not be instructed that it may be inferred that a female who has previously consented to sexual intercourse with persons other than the defendant would be therefore more likely to consent to sexual intercourse again.

(b) A jury shall not be instructed that the prior sexual conduct in and of itself of the complaining witness may be considered in determining the credibility of the witness.

(c) The term "unchaste character" shall not be used by any court in a criminal case in which the defendant is charged with a violation of 261 or 621.5 of the Penal Code, or attempt to commit or assault with intent to commit any crime defined in any such section, in any instruction to the jury.²²

Thus, the forementioned revision of the penal code is a credible intervening variable. Since rape has been a highly emotional and controversial issue, the revision of the rape law represents a legal response to one of the many problems associated with rape.

The Description and Collection
of Rape Data

Because of the understandable departmental concerns for the confidentiality of information, any documents containing the names of victims, suspects, witnesses, or police personnel could not be xeroxed or duplicated. Thus, a content analysis of the documents and records were performed and the pertinent information recorded on a separate data collection form.

Basically, two files were of interest: (1) Incident files and (2) suspect files. Appendix A contains the header documents in both files. Document PD-330 (Rev. 8-74) is the main document in the incident file. This document is completed by the patrolman who responds to the call or request for service from the victim. This is the first initial victim account of the incident. But this document is usually accompanied with varying numbers of pages of detective reports which include interviews with the victim and witnesses, chronological documentation of the investigation process, and sometimes a polygraph examination of the victim. Thus, the texts or narratives of the cases ranged from five to fifty pages. The second major document, PD-318, is the medical examination report of the victim (Appendix A). The only datum needed from this report was marital status of the victim.

The major document in the suspect file PD-100 (Rev. 10-72) is the arrest report (Appendix A). This document is completed by the arresting officer of the suspect, but like the incident file, the arrest report is supplemented by other documents pertaining to the incident: (1) interrogation transcripts and (2) copies of the court

disposition of the suspect. However, other documents are in this file such as: (1) finger print cards; (2) mug photos; (3) parole or probation notices; and (4) the "rap" or "yellow sheet" which chronologically lists all prior arrests and convictions of the suspect.

Appendix B contains a copy of the data collection form designed by the author. The inclusion of data elements beyond the immediate relevancy of this research was for the purpose of secondary aspatial analyses. The data collection form was designed to correspond with the sequence of information on the incident and arrest reports and also to facilitate transference of data elements to computer coding forms.

Rape Variables

The rape related variables originated from the literature and suggestions of different law enforcement officials. Demographic variables pertaining to the victim and offender need no explanation (i.e., race, age, and marital status). However, some variables do require an expansion and listing of categories.

The three offender status groups are: (1) open; (2) single event; and (3) series. The first category includes all the cases declared by the police department to be open or inactive. The single event and series categories are composites of the exceptional clearance and cleared by arrest dispositions.

The locations and/or scenes in each incident were collected in four formats: (1) street-block number; (2) census tracts; (3) city; and (4) subsequently converted to x, y cartesian coordinates.

Thus, the location can be placed at a point, generalized to an area (census tract), and qualified as to its type.

The number of scenes in an incident are actually surrogates for movement. Table 3.4 presents the number of scenes typology and their definition.

Table 3.4--Number of Rape Scenes and Definitions.

Number of Scenes	Definition
One	Victim residence, offender residence, initial meeting place, crime scene, and after scene--all in the same location.
Two	Victim and offender residences separate but the rest of the scenes take place in one of the residences.
Three	Victim and offender residences separate but a third location assumes the role of meeting place and/or crime scene and after scene.
Four	Victim and offender residences separate but a third location is the initial meeting place and fourth the crime. The after scene can be anyone of the previous locations.
Five	All scenes have separate locations.

Source: Author

The emphasis on the scene typology is movement. In a one scene event, there is no movement. In a two scene event, one of the participants traveled to the residence of the other. A three scene case is where both participants at least met at a third location. The four scene rape involves the victim and offender moving jointly from the initial meeting place to the crime scene while the five scene rape adds another joint movement from the crime scene to the after scene.

The victim-offender relationship categories are somewhat identical to those developed by Amir. Six major relationship categories were developed with the intention of measuring degrees of social interaction, intimacy, or conversely anonymity. Table 3.5 lists the categories with their definitions.

Table 3.5--Victim-Offender Relationship Categories.

-
- I. Stranger - no previous contact and acquaintanceship established before the offense.
 - II. Casual Acquaintance - offender becomes known to victim just before the offense.
 - III. Acquaintance - victim has some prior knowledge about her offender's residence, place of work, or nickname, but no specific relationship exists.
 - IV. Family Friend - offender is the friend of one of victim's family members, often at her home and trusted (includes mother's boyfriend).
 - V. Close Friend or Boyfriend - offender often in victim's home or dated with her, or having close, direct, or frequent relationship (this category includes ex-boyfriend).
 - VI. Family - Relative - includes father; step-father, brother, step-brother; cousin; and uncle.
-

Source: Amir, 1971, p. 233 and author.

The relationship categories can be viewed as a scale based on anonymity, but another association emerges. The relationship scale defines the intensity of rape as a public problem. Hence, the more anonymous the relationships, the greater the peril to the public at large and the more extensive the intervention for law enforcement.²³

The method of operation or offender's means of approaching the victims are defined by ten categories. (Table 3.6).

Table 3.6--Method of Approaching the Victim

-
1. Illegal Entry - offender breaks into the residence of the victim.
 2. Kidnap Attack - offender immediately applies force to neutralize the victim.
 3. Accept Ride - offender offers victims in transit an automobile ride or he looks for victims hitchhiking.
 4. Meet Outdoors - offender encounters the victim in an outdoor setting but some interaction between the participants occurs before the victim is assaulted.
 5. Public Building - offender meets and/or attacks his victim in a public or semi-public building.
 6. Meet at Party or Bar - the offender meets the victim at a party or in a bar.
 7. Third Person - the offender meets the victim through a third person.
 8. Known to Victim - the offender knows the victim. Social interaction between the two is not uncommon.
 9. Unknown - the offender's method of approaching the victim is unknown.
 10. Other - catch-all category to include the low frequency MO's that are not appropriate for any of the nine previous categories (e.g., offender is a hitchhiker).
-

Source: Author

The MO classifications (categories one through eight) imply an ordinal scale or ranking. The criteria for ranks pertain to the victim's cognizance of a potential assailant and the immediate peril of the method of operation. Thus, the illegal entry of the residence would rank the highest because: (1) the victim does not see the offender until he is ready to neutralize her to commit the act, and (2) the fear for the victim is compounded by the fact that not only is rape the

ultimate invasion of the person but the method of operation entails the ultimate invasion of territoriality.

A method of operation like "known to victim" presents a different situation. This method of operation and its lower ranking does not infer that the rape itself is any less traumatic to the victim, but the major difference is access. Thus, the offender and victim have usually interacted to some degree. Therefore, the initial encounter between the participants is not perceived as being potentially perilous.

Land Use Variables

The land use variables emanate from surveys taken in 1971 and 1975 by the San Diego Comprehensive Planning Organization. The initial surveys contained eleven major land use classifications with twenty sub-classifications to define more specific usages. However, not all land use sub-classifications were of relevancy to this study (i.e., water areas, federal reservations, agricultural and wild lands) while the frequency and magnitude of other specific uses were so low or highly intercorrelated with other land uses that the general classifications were used. Table 3.7 displays the eight land use classifications that are pertinent to this study.

The land uses were recorded in acres. Thus, for the appropriate analyses, land use variables will be expressed as the percentage of the total acreage which is in a specific use.

Table 3.7--Land Use Classifications: 1971-1975.

-
1. Residential - single family dwelling.
 2. Residential - multi-family dwelling (duplex, apartment, condominium).
 3. Commercial
 - a. shopping center
 - b. strip of other retail/wholesale, professional/services.
 4. Manufacturing
 - a. heavy industrial (machinery, ship building, aircraft engines and parts).
 - b. light industrial (electronics, fabricated products, and food processing).
 5. Public and quasi-public
 This classification is all encompassing for such phenomena as institutions of higher education; high, junior high, and elementary schools, government services and centers, health care services, other (churches and cemeteries).
 6. Recreational and open space
 - a. golf courses, regional parks (city and county) and local parks (city and county).
 - b. state parks
 - c. commercial use of open space (fairgrounds, race track, stadium).
 7. Transportation and utilities
 8. Vacant land
-

Source: San Diego County Comprehensive Planning Organization, 1975.

Census Variables

The purpose of the census data was to select variables which were highly explanatory and predictive of the crime. Moreover, the majority of the variables are measures of the family life cycle with secondary emphases on racial-ethnic status, housing, income, and employment.

By using data from two census surveys (1970 Federal Census and 1975 San Diego Special Census), it is possible to view the consistency or change in the relationship of rape with the census measures.

Table 3.8 is a listing of the pertinent census measures used in this study.

Table 3.8--Census Measures: 1970 and 1975 Censuses.

-
1. Net Density - persons/residential acre.
 2. Total Population.
 3. Percent Spanish (Latino)-Spanish/Total population.
 4. Percent Black - Black/Total population.
 5. Percent Children - Population Age 1 - 14/Total population.
 6. Percent Young - Population Age 15 - 24/Total population.
 7. Percent Late Young - Population Age 25 - 34/Total population.
 8. Percent Middle - Population Age 35 - 44/Total population.
 9. Percent Late Middle - Population Age 45 - 64/Total population.
 10. Percent Late Stage - Population Age 65 or older/Total population.
 11. Sex Ratio - Males/(Females/100).
 12. Young Sex Ratio - Males Age 15-34/(Females Age 15-34/100).
 13. Percent Young Female - Females Age 15-34/Total population.
 14. Percent Young Male - Males Age 15-34/Total population.
 15. Population per Household.
 16. Median Income.
 17. Lower Income - Percent households with an income less than \$6,999.
 18. Lower Middle Income - Percent household with annual income between \$10,000 and \$14,999.
 19. Upper Income - Percent households with annual income equal to or greater than \$25,000.
 20. Welfare - Percent households on public assistance.
 21. Male Unemployment - Percent males in the civilian labor force unemployed.
 22. Female Unemployment - Percent females in the civilian labor force unemployed.
 23. Males not in Labor Force - Number of males not in the labor force per 100 males in the labor force.
 24. Females not in Labor Force - Number of females not in the labor force per 100 females in the labor force.
 25. Renters - Percent of all households renting their dwelling.
 26. Dwelling Units/Structure - Percent of all housing structures with five or more dwelling units.
-

Source: 1970 Federal Census; 1975 Special San Diego Census; and calculated by author.

Critical variables which were not collected in the 1975 Special Census are marital status by race-age-or sex and profession. Thus, one can only rely on gross surrogate measures such as population per household and income.

Methods of Analysis

Introduction

Three main types of analyses are used to test the hypotheses: (1) cartographic; (2) geostatistical; and (3) statistical. Moreover, tables have been liberally used to enhance the conveyance of a specific point or generalization.

Analysis of the First Hypothesis

The first hypothesis which tests the spatial order or variation of rape with the spatial variation of the family life cycle and land use structure entails the use of multiple-correlation and regression, specifically step-wise regression.

The areal unit for this hypothesis is the census tract. The tracts for the 1975 census were aggregated into the 1970 tracts. Hence, this insured the compatibility between and among the years and totalled 149 tracts.²⁴

The dependent variable for this hypothesis is the sum of all the rapes involving one or more offenders per census tract divided by the annual total number of rapes. Therefore, the dependent variable is simply each tract's percentage or proportion of all the rapes. The justification for this dependent variable is more appropriately discussed in the hypothesis itself. Essentially, this dependent variable

is closer to reality since it measures the spatial saturation of the annual volume or caseload for the police department instead of a questionable population based rate.

The step-wise regression model is applied to three years (1971, 1974, 1975). These years were selected because of their relative temporal compatibility of the rape data with the census and land use information.

Multiple regression was selected because of its ability to determine the mean functional linear relationship among a dependent variable and numerous independent variables. Another asset was its ability to calculate inferential values by means of the regression coefficient. The principal utility of step-wise regression is that the independent variables are rank ordered according to their explanatory power of the total variation of the dependent variable.²⁵

Because multiple-regression requires that there be independence among the independent variables, a principle components analysis with a varimax rotation was conducted to reduce the thirty-four socio-economic and land use variables to six independent dimensions for both sets of data. It is assumed that variables receiving a loading of at least .50 are defining the salient structure of the dimension.²⁶ Therefore, each census tracts' factor score for each dimension are used as the independent variables. The procedure for selecting the six dimensions involved graphing the variances for each component and finally determining a marked break in the slope or discontinuity in the cumulative percentage of the variance.²⁷

Following the completion of the step-wise regression models for each of the three years, an analysis of residuals is conducted.

Specifically, in order to surmise the spatial accuracy of the regression models in terms of predicting the occurrence of rape with the independent variables, the standardized residuals are mapped. The standardized residuals were selected because of their limited magnitudes which enhances comparisons between different time periods.²⁸

The step-wise regression analyses ideally determines and provides predictor values for the spatial order of rape with the spatial variation of the family life cycle and land use structure. The test for temporal consistency would have relied on other techniques such as discriminant analyses, but problems with incompatible factor structures between 1971 and 1975 arose. Thus, the consistency through time aspect of the hypothesis will have to be described.

Analysis of the Second Hypothesis

The second research hypothesis deals with less intimate rapes only. It asserts that the greater the age disparity between the victims and offenders, the greater the absolute distance between the participants' residences. The less intimate relationships are chosen because the family friend to family/relative relationships are infrequent and the distances insignificant.

The participants' residences are expressed in Cartesian coordinates (X,Y) hand digitized from a San Diego atlas at a scale of 1:24000.²⁹ Coordinates were digitized for all pertinent locations in this study.

Distance throughout this study is expressed in miles, but the distance itself is not the typical straight line distance from point to point. Since access and movement in urban space are, in reality, not

based on straight line movement, a more appropriate distance measure would take into account a directional change. Hence, the distance in this study is metropolitan distance or "Manhattan geometry."³⁰ Therefore, the distance between two points assumes a third location or simply a right angle movement. Thus, the calculated distances are converted to miles by multiplying it by a scale factor of .378.

Throughout this research, the concept of mean distance does not imply the arithmetic average. Actually, the mean distance is the geometric mean. Essentially, the distances are converted to their natural logarithms, summed and divided by the number of observations. The main advantage of this measure is that it is less affected by extreme quantities and it represents a more typical average.³¹ Although the resulting value of this procedure is in the logarithmic form, the antilogarithm appears on all tables and within the discussions throughout the text.

The ages of the victims and known offenders refers to the specific five year cohort that their particular age is a member. If the victim and offender are members of the same cohort, the ages are the same. If the victim cohort is two or more less than the offender, the victim is younger. Conversely, if the victim is two or more cohorts more than the offender, the victim is older.

The problem in this hypothesis is to determine if there is a significant difference in the mean distance between the age disparity groups. The ideal method for determining significance between three or more groups is analysis of variance.³² However, a problem with the analysis of variance model is that if the model is statistically significant, the only interpretation is that the mean distances are

significant between groups. Therefore, multiple comparisons, post hoc comparisons or simply follow-up analyses are used to determine which groups form aggregate homogeneous groups and which groups are diametrically opposed or statistically different.³³ Two multiple comparison tests are used in this research: Fisher's LSD (least significant difference) and Scheffe.

Both tests analyze each possible pair of means to determine if the means are significantly different. A basic difference between the two tests is that the LSD is a liberal procedure which finds a significant difference between two means which are relatively close together while the Scheffe test, a conservative procedure, will indicate significance only when the means are far apart.³⁴ Thus, the analysis will be conducted for each year of the study. The techniques used to test this hypothesis are used numerously throughout this research.

Analysis of the Third Hypothesis

The third hypothesis asserts that the distance between the participants' residences will be significantly different when rape is differentiated by racial-ethnic similarities and dissimilarities. Because of the limitations of the data, three interaction groups are used: (1) white victim and white offender; (2) white victim and non-white offender; and (3) non-white victim and non-white offender. Non-white includes blacks, Latinos and Asians. The low frequency of white offender and non-white victim cases mandated the exclusion of this group from the test.

The method used to test this hypothesis will be the previously mentioned analysis of variance with multiple comparisons. Moreover, the analysis will be conducted for each year of the study.

Analysis of the Fourth Hypothesis

The three offender status groups have been already defined in previous portions of this text. However, in order to determine the victim-offender relationship and method of operation of each group, the chi-square and contingency coefficient statistics are used to determine interaction and the degree of correlation between nominal scale variables.³⁵

These procedures are used for the composition of each offender status group for all five years combined. Also, these procedures are employed in the distribution of offender status groups by year. A problem with some of the chi-square tests in this research is low cell frequencies.

A standard rule of thumb has been that if the expected cell frequencies are five or smaller, then the validity of the chi-square statistics are questionable.³⁶ Hence, chi-square tables not meeting the requirement of an expected cell frequency of five or more will be duly noted.³⁷

One spatial measure employed to determine general differentiation of the offender status groups is the mean distance of the crime scene from the CBD. Therefore, the offender status crimes are analyzed within each year and each offender group is isolated and examined through the five year period.

The CBD base point for this study is the intersection of Fourth and Broadway in downtown San Diego (Figure 3.1, Tract 53). This intersection marks a half block of land known as Horton Plaza which presently serves as a major terminus for the city bus lines and as a gathering point for many types of people from the art browsers to "skid

row bums."³⁸ It is assumed that this location is one where a person can be in a maximal state of anonymity. The method employed to test this portion of the hypothesis is the analysis of variance with the multiple comparisons.

The distance travelled by the offender to the initial meeting place or the journey to crime measure is only possible for the single and series offender groups. However, for its potential information value, the mean distance of travel is examined for the two groups within each year. Again, the analysis of variance with multiple comparisons techniques are employed.

The next phenomenon used to determine offender status explicitness pertains to rape mobility or movement. This concept has its aspatial (social) and spatial connotations. Thus, within each year, the offender status groups are analyzed in terms of the average number of scenes, the aspatial surrogate for movement.

Although a rape may contain five scenes where the offender moved the victim from the initial meeting place to the crime scene and finally to the after scene, the distance may be very minute. Hence, a spatial measure of movement is developed which measures the total distance the offender and victim moved jointly regardless of the number of scenes. Both measures will be analyzed with the analysis of variance and multiple comparison procedures.

An effective way to relay the concepts of the spatial distribution and concentration of the offender status groups is by employing graduated circle maps.³⁹ The areal unit for this type of map will be the census tract. Moreover, maps will be constructed for each year in the study.

The radii of the circles for each census tract will be based upon their frequency of rapes. Moreover, each circle will be shaded according to its proportion of open, single, and series rapes. The importance of these maps is the visual image relayed of rape's annual fluctuations and variations.

The cartographic display and description of rape is quite valuable, but another more informative task is to measure precise geographic concepts (shape, area, and density) for each offender status group's spatial distribution. The technique used for this involves centrographic measures which have had little application in the geography of crime.⁴⁰

The centrographic measures in this research utilize the X,Y coordinates of the crime scene locations. The centrographic measures important to this research are:

1. the mean center . . . which is the equivalent of an arithmetic mean of a univariate distribution.
2. the standard distance . . . which describes the dispersion along a line passing through the mean center.
3. the principal axes (major and minor) of the distribution . . . describe the points at which the standard distance is at a minimum and maximum respectively.
4. the angle of rotation . . . the degree of rotation necessary to minimize the standard distance.
5. the coefficient of circularity . . . which measures the degree of roundness of the distribution.⁴¹

The first four measures are required for determining the standard deviational ellipse (SDE). A more concise description of the structure of the standard deviational ellipse is provided a geographer.

According to Sööt:

The SDE is centered on the mean center with the major axis of the ellipse being the principal axis least squares line which minimizes the sum of the squared perpendicular deviations. The minor axis is perpendicular to the major axis at the mean center. The respective standard deviations along these two axes define the standard deviational ellipse.⁴²

The mean center relays the notion of the central tendency of each of the offender status groups, but modification to the SDE relay even more definitive measures of the distribution.

The coefficient of circularity is simply the ratio of the standard distance about the major axis to the standard distance about the minor axis. Thus, the ratio can vary from zero which defines the ellipse as a straight line to one which would be a circle.⁴³ Precisely, a definition or identifier of the shape of each offender status group is possible.

The central tendency and shape of the rape distribution can be complemented by determining the area of the ellipse, thus, relaying the areal magnitude of the rape distribution.⁴⁴ An additional measure to complement the previous measure pertains to the density of rape incidents within the ellipse. Assuming a normal distribution, sixty-eight percent of the rape crime scene locations should be within the standard deviational ellipse.⁴⁵

The centographic measures previously described complement the cartographic displays. Moreover, concepts like shape, area, and density can now be defined and described for the offender status groups for each year.

The final analysis for the test of offender status group individuality pertains to the associations of the rapes with the urban ecological structure or simply identifying the ecological biases of

the rape types.⁴⁶ The years in this portion of the research are the same for the regression model. Moreover, the dimensions discerned and utilized as independent variables in the regression models are used to define the ecological units.

The census tract factor scores for each of the six dimensions were submitted to a hierarchial grouping which aggregates tracts into sets of regional types. The aggregation is based on the minimal statistical distance of the tracts and groups. The number of regional types or ecological areas are left primarily to the discretion of the researcher.⁴⁷ Hence, discriminant analysis procedures were implemented to redefine and substantiate observations' group memberships.⁴⁸

Because of the differing factor structures for 1971 and 1975, sixteen groups were discerned for the latter year while only fifteen groups were discerned for the former year. One additional group was added to each year for those crime scenes which were not in the City of San Diego.

The correlation of the offender status group crime scenes with their ecological area of commission is facilitated by the use of chi square tables and the contingency coefficient. However, caution is advised in the interpretation of the results due to the small cell sizes.

Limitations to the Study

The problem with any empirical research, especially regarding crime-specific studies, is that the conceptually sound classification schemes may not be reinforced with a large data base of extensive frequencies for each classification. Encountering this problem required

the elimination of more sophisticated techniques. A potential solution would have been the further aggregation of some of the important classifications (i.e., victim-offender relationship, method of operation, and ecological areas), but this was rejected by the author on conceptual grounds. The first hypothesis is an example of the status quo where the methodology generalizes the crime and its independent variables. The next three hypotheses focus on more specific attributes of rape. It is this specificity which needs to be examined, regardless of the number of observations.

Notes to Chapter III

¹Esherf Shevky and Wendell Bell, Social Area Analysis (Stanford, California: Stanford University Press, 1955), p. 10.

²See Peter H. Rossi, Why Families Move (Glencoe, Illinois: Free Press, 1955) also James Simmons, "Changing Residence in the City: A Review of Intra-Urban Mobility," Geographical Review 58 (October 1968):622-651.

³Peter D. Salins, "Household Location Patterns in American Metropolitan Areas," Economic Geography, Brian J. L. Berry, eds. Volume 47, Number 2 (Supplement), (June 1971), pp. 235-237.

⁴Ibid., p. 237. ⁵Ibid., p. 237. ⁶Ibid., p. 237-239.

⁷D. W. G. Timms, The Urban Mosaic: Towards a Theory of Residential Differentiation (London: Cambridge University Press, 1971), p. 108.

⁸Richard L. Morrill and Ernest H. Wohlenberg, The Geography of Poverty in the United States (New York: McGraw-Hill Book Company, 1971), p. 84.

⁹Alison M. Hayford, "The Geography of Women: An Historical Introduction," Antipode: The Journal of Radical Geography, Volume 6, Number 2 (July 1974), p. 5.

¹⁰Male-female differences in behavior patterns are discussed in two works by John C. Everitt: "Liberation or Restriction? The Job As An Influence On Urban Environmental Perception and Behavior," Antipode: A Radical Journal of Geography, Volume 6, Number 2 (July 1974), pp. 20-25; and "Community and Propinquity In A City," in Annals of the Association of American Geographers 66 (1976), pp. 104-116.

¹¹See Richard L. Morrill, "The Negro Ghetto: Problems and Alternatives," The Geographical Review, Volume 55 (1965), pp. 339-361. Also Harold M. Rose, The Black Ghetto: A Spatial Behavioral Perspective (New York: McGraw-Hill Book Company, 1971).

¹²An example of a study describing and explaining the spatial variation of age throughout an urban area is Michael R. C. Coulson's "The Distribution of Population Age Structures in Kansas City," Annals of the Association of American Geographers 58 (1968):155-176.

¹³Harvey Heiges, "The Economic Base of San Diego County," in San Diego: An Introduction In the Region, ed. Phillip R. Pryde (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1976), p. 137.

¹⁴Ibid., p. 143. ¹⁵Ibid., pp. 140, 144. ¹⁶Ibid., pp. 139-140.

¹⁷Phillip R. Pryde, "Introduction," in San Diego: An Introduction to the Region, ed. Phillip R. Pryde (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1976), p. 7.

¹⁸San Diego City Planning Department, Data Services, "A Brief Statistical Analysis of San Diego's People and Housing As Identified By the 1975 Special Census," October 28, 1975.

¹⁹The statistical areas for San Diego were aggregates of 1975 census tracts. Since this study is based on the 1970 census tracts, one important modification had to be made. In 1975, census tract 95 was subdivided into six tracts. Hence, three of the 1975 tracts were placed into North San Diego instead of East San Diego.

²⁰Interview with Lt. Charles Schilder, Commander, Homicide-Sex/ Crimes Unit, San Diego Police Department, March 26, 1976.

²¹C. A. Pantoleoni and James C. Bigler, California Criminal Law and Guide for Policemen (Englewood Cliffs, New Jersey: Prentice-Hall, 1969), pp. 191-192.

²²California Penal Codes (Sacramento, California, 1975), p. 398.

²³For a more extensive discussion of the ramifications of the victim-offender relationship typology, refer to: Amir, Patterns In Forcible Rape, 1971, pp. 229-238.

²⁴Actually, the City of San Diego is composed of 164 census tracts (1970 census), but six tracts were excluded because they were entirely military basis. Eight other tracts were excluded because they were split with other political variables and had extremely low or non-existent frequencies for some of the socio-economic independent variables.

²⁵See Norman Draper and Harry Smith, Applied Regression Analysis (New York: John Wiley & Sons, Inc., 1966), pp. 171-173. Also refer to Maurice Yeates, An Introduction to Quantitative Analysis In Human Geography (New York: McGraw-Hill Book Company, 1974), pp. 120-122.

²⁶Yeates, An Introduction To Quantitative Analysis in Human Geography, 1974, pp. 209-237.

²⁷Ibid., p. 222.

²⁸Edwin N. Thomas, "Maps of Residuals From Regression," Spatial Analysis: A Reader In Statistical Geography, eds. by Brian J. L. Berry and Duane F. Marble (Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1968), pp. 332-333.

²⁹The source maps for the digitizing of the cartesian coordinates was Boyd Robinson, Robinson Street Map of San Diego County, 5th ed. (Torrance, California: Robinson Rating Service, 1975).

³⁰See John C. Lowe and S. Moryodas, The Geography of Movement (Boston, Mass.: Houghton Mifflin Company, 1976), p. 15.

³¹Herbert Arkin and Raymond R. Colton, Statistical Methods, 5th ed. (New York: Barnes & Noble Books, 1970), pp. 29-30.

³²See John Neter and William Wasserman, Applied Linear Statistical Models (Homewood, Illinois: Richard D. Irwin, Inc., 1974), pp. 419-457.

³³Schuyler W. Hach, William H. Cornier, and William G. Bounds, Jr., Reading Statistics and Research (New York: Harper & Row, Publishers, 1974), p. 68.

³⁴Ibid., p. 69.

³⁵Yeates, An Introduction To Quantitative Analysis In Human Geography, 1974, pp. 184-189.

³⁶See Herbert M. Blalock, Jr., Social Statistics, Second ed. (New York: McGraw-Hill Book Company, 1972), p. 285.

³⁷For examples of violations of this assumption, see Pyle et al., The Spatial Dynamics of Crime, 1974, pp. 154, 157, 160, 163, 165, and 174.

³⁸See Frederick P. Stutz and Philip L. Hinshaw, San Diego CBD: A Walking Tour (San Diego: Geography Department, San Diego State University, 1974), p. 10.

³⁹Arthur Robinson and Randall D. Sale, Elements of Cartography, 3rd ed. (New York: John Wiley & Sons, Inc., 1969), pp. 124-137.

⁴⁰The only known published work to date applying centrographic measures to the geography of crime is: Larry K. Stephenson, "Spatial Dispersion of Intra-Urban Juvenile Delinquency," in The Journal of Geography 73 (March 1974):20-26.

⁴¹John Hulquist, John Holmes, and Lawrence A. Brown, Centro: A Program for Centographic Measures, Discussion Paper No. 21, Department of Geography, The Ohio State University, 1971, pp. 2-7.

⁴²Siim Sööt, Methods and Measures of Centrography: A Critical Survey of Geographic Applications, Paper Number 8, Occasional Publication of the Department of Geography, The University of Illinois at Urbana-Champaign, April 1975, p. 27.

⁴³Douglas B. Lee, Analysis and Description of Residential Segregation (Ithaca, New York: Cornell University Center for Housing and Environmental Studies, 1969), pp. 34-35.

⁴⁴An example of a study employing the use of the ellipse area can be found in Robert S. Yuill, "The Standard Deviational Ellipse," An updated Tool For Spatial Description," in Geografiska Annaler, 53 B (1971), 1, pp. 28-39.

⁴⁵Yuill also worked with a density measure, but sixty-eight percent of his observations did not lie within the ellipses. The discrepancy may pertain to centering the ellipse on a median point and also using weighted data.

⁴⁶For a discussion of urban ecological structure see Robert A. Murdie, "The Social Geography of the City: Theoretical and Empirical Background," in Internal Structure of the City: Readings on Space and Environment, Larry S. Bourne, ed. (New York: Oxford University Press, 1971), pp. 279-290.

⁴⁷Works discussing the structure, function, and some of the issues of grouping algorithms are: Ronald Abler, John S. Adams, and Peter Gould, Spatial Organization: The Geographer's View of the World (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971), pp. 166-182. Also Andrew D. Cliff, Peter Haggett, J. Keith Ord, Keith A. Bassett, and Richard B. Davies, Elements of Spatial Structure: A Quantitative Approach (Cambridge, England: Cambridge University Press, 1975), pp. 7-28. Also, Leslie J. King, Statistical Analysis In Geography (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969), pp. 194-204. Also, J. H. Ward, "Hierarchical Grouping to Optimize and Objective Function," Journal of the American Statistical Association 58 (1963):236-244.

⁴⁸King, Statistical Analysis In Geography, 1968, pp. 204-215.

CHAPTER IV

THE SPATIAL DYNAMICS OF RAPE:

1971, 1974 and 1975

The Spatial Order of Rape

Introduction

The first reasearch hypothesis asserts that the spatial distribution of rape can be explained by spatial variation of the family life cycle and land use structure. Furthermore, this explanation should be valid for different time periods. The major assumption is that rape is caused by several factors which emanates from different social environments.¹

The Dependent Variable

There were many problems encountered with selecting a dependent variable to test the hypothesis. Using a population based crime rate (rapes per 1,000 persons or rape per 1,000 females), usually yielded a high multiple correlation coefficient (50 or greater) with socio-economic, demographic and land use independent variables. But a rape rate dependent variable was not used.²

The first problem is that a crime rate is based on a population parameter. But certain independent variables may also contain the population parameters which comprise the rate. A rate based on the

rapes per 1,000 females is invalid when you have an independent variable like the sex ratio which is males per 1,000 females. Secondly, the population parameter used for the calculation of a rate is based on the resident population of the areal unit. The largest fallacy is that one assumes that the rape victims are residents of the areal unit. In fact, a simple comparison of the single and multiple rape victims in this study showed that at its lowest, only forty-four percent (1973) of the victims were raped in their tract residence while the highest was fifty-seven percent in 1974. The highest frequency year, 1975, yielded an even fifty percent of the victims being raped in their tract of residence. The question is how significant is a crime rate when some of the victims may not even be residents of the areal unit in which the offense was committed? It may be true that females travel to different areas where their probability of victimization may be greater, but this is another serious problem with crime rates.

In past ecological studies of crime, an almost universal finding has been that the Central Business District (CBD) has the highest crime rate. Of course, this relationship will consistently emerge because the rate is based on a population parameter and the CBD has a very small residential population, yet it attracts a large volume of people. This is an issue that was thoroughly examined by Sarah Boggs in her dissertation, "The Ecology of Crime Occurrence In St. Louis: A Reconceptualization of Crime Rates and Patterns." This fundamental difference is that the CBD is not a social area as much as it is a functional economic area with its business and commercial activities. According to Boggs, this area is one where crime is not

a product of social characteristics but of differential opportunities.³ This same situation is valid in other non-residential areas (e.g., industrial manufacturing, secondary commercial and recreation centers). So the problem with a population based crime rate pertains to ascertaining a generally acceptable population base when in reality, daily short term population movements are great and diverse.⁴

The last criticism of a crime rate is that it really only measures a population density or probability which has its aspatial connotations. Therefore, the dependent variable for this hypothesis will not be a population based rate but a simple percentage of each census tracts proportion of the total number of single and multiple offender rapes. This type of dependent variable measures each areal unit's saturation or intensity of rape relative to the total and other areal units.

1971 Factor Structure

A principal component analysis of the thirty-four socio-economic, demographic, and land use variables yielded six independent dimensions or factors for both 1971 and 1975. Table 4.1 is a list of the variables and their loadings on their respective factors.

Factor I, 1971, Late Stage vs. Family Stage

The first factor with an eigenvalue of 6.45 and 24.5 percent of the explained variance has been labelled Late Stage vs. Family Stage. The high positive loadings on the late-middle and late stages in contrast with the extremely low negative loadings on children and population per household is indicative of two socially and spatially

Table 4.1--1971 and 1975 Factor Structure: Solution After Varimax Rotation.

	1971							1975						
	I	II	III	IV	V	VI	T	II	III	IV	V	VI		
1. Single Family Dwelling	-.04	-.33	-.07	-.25	-.47	-.01	-.23	-.09	.05	-.28	-.38	(-.60)		
2. Multiple Family Dwelling	(.59)	.38	.07	-.16	.03	-.08	-.08	.03	.09	(.66)	-.04	.06		
3. Commercial	.48	.29	-.01	(.55)	.05	-.13	(.57)	-.03	-.06	.43	-.13	.15		
4. Manufacturing	.00	-.14	-.04	.00	(.84)	-.14	-.00	-.13	.06	-.05	-.10	(.73)		
5. Public	-.18	.05	(.65)	.21	.04	.07	.24	(.67)	.10	-.03	-.05	-.02		
6. Recreation	.16	-.06	-.05	.09	.15	-.13	-.01	-.05	-.23	-.03	-.04	.10		
7. Transportation	-.02	.04	.07	-.04	(.81)	-.10	.05	-.01	.06	.10	-.06	(.86)		
8. Vacant Land	(-.54)	-.19	-.05	-.04	.02	.13	-.08	-.02	-.06	-.38	(.58)	.01		
9. Net Density	.06	.04	.08	(.81)	-.06	.14	(.69)	-.03	-.07	-.09	.02	.02		
10. Total Population	-.33	-.05	-.07	-.10	-.35	-.08	-.07	-.08	-.05	-.25	(.64)	-.14		
11. Latino	-.03	(.78)	-.10	-.00	.10	.04	.03	-.06	(.68)	.15	-.02	.42		
12. Black	-.21	(.58)	.02	.04	-.02	.02	.01	.03	(.78)	-.06	-.05	-.00		
13. Children (0-14)	(-.84)	.34	-.29	-.15	-.11	-.13	-.20	-.13	(.57)	(-.51)	(.51)	-.00		
14. Young (15-24)	.18	-.01	(.96)	-.02	-.02	-.04	-.18	(.93)	-.00	.18	.04	-.05		
15. Late Young (25-34)	-.19	.04	-.20	.00	.22	(-.72)	.36	-.02	-.21	.47	(.58)	-.18		
16. Middle (35-44)	(-.63)	-.24	-.47	.12	.20	-.08	.00	-.31	-.02	(-.70)	.17	.07		
17. Late-Middle (45-64)	(-.63)	-.40	-.23	.05	.02	.27	-.00	-.31	-.28	-.17	(-.70)	-.13		
18. Late-Stage (65 years or Older)	(.83)	-.05	-.07	.12	-.09	.31	.12	-.29	-.23	(.58)	(-.51)	-.10		

Table 4.1--Continued.

	1971						1975					
	I	II	III	IV	V	VI	I	II	III	IV	V	VI
19. Sex Ratio	.06	-.05	-.05	(.82)	.21	-.09	(.89)	-.04	-.04	-.02	-.04	.21
20. Youth Sex Ratio	.13	-.11	.01	(.90)	.08	-.05	(.93)	-.07	-.07	.07	-.01	.02
21. Young Female	.31	.06	(.84)	-.20	-.06	-.05	-.21	(.90)	.00	.19	.09	-.12
22. Young Male	.04	-.07	(.91)	.13	.10	-.03	-.13	(.93)	-.01	.17	.00	.01
23. Population/Household	(-.84)	.10	-.36	.19	-.16	-.03	-.23	.02	.38	(-.74)	.34	.05
24. Median Income	-.33	(-.59)	-.29	-.19	-.21	.40	-.20	-.03	-.42	(-.76)	-.00	-.23
25. Lower Income	(.54)	(.72)	.01	.12	.00	-.15	.32	.08	.39	(.75)	-.22	.14
26. Lower Middle Income	-.49	-.39	-.19	-.22	-.43	-.31	-.36	-.11	-.14	-.25	.41	-.31
27. Upper Income	-.00	-.48	-.13	-.10	.43	(.51)	-.05	.01	-.41	(-.62)	.26	-.10
28. Welfare	.20	(.83)	.00	-.03	.00	.03	.12	.08	(.76)	.22	-.13	.24
29. Male Unemployment	.36	.46	.31	.29	-.04	-.14	(.71)	.01	.34	.40	-.09	.08
30. Female Unemployment	-.00	(.61)	-.01	-.15	-.08	.12	(.62)	.05	.16	.31	-.17	-.03
31. Males Not in Labor Force	.24	.08	.35	(.68)	-.06	.44	(.80)	-.15	.26	-.05	.08	-.10
32. Females Not in Labor Force	-.15	.20	-.19	.08	.02	(.75)	.36	-.27	.47	-.31	.15	-.08
33. Renters	(.69)	.41	.02	.14	.25	-.33	.08	.30	.01	(.82)	-.04	.10
34. Structures 5 or more DU's	(.68)	.04	.01	.42	.07	-.23	-.05	.36	-.34	(.64)	-.00	.02
Eigenvalue	6.45	4.46	3.84	3.62	2.43	2.53	4.90	3.67	3.45	6.01	2.8	2.26
% Total Variation	24.5	12.3	9.8	8.3	7.3	5.8	23.8	15.10	11.4	8.2	5.8	5.2
% Common Variation	27.88	19.28	16.60	15.65	10.5	10.07	21.21	15.80	14.9	26.03	12.12	9.78

Note: () = Loadings used for Factor Label; Appendix C contains the intercorrelation matrices of the unfactored independent variables.

distinct components of the life cycle.⁵ Complementing a late cycle extreme are variables pertaining to housing status, dwelling type and income: renters; structures with five or more dwelling units; multiple family dwelling units; and lower income. The family stage extreme of the dimension is reinforced with the inclusion of a parental age group (middle (35-44)) and a less weak relationship with a high income class (lower-middle income) and a residential occupancy in areas with a large portion of vacant land.

Factor II, 1971, Racial-Ethnic Minorities and Limited Resources

Factor II is actually a departure from the life cycle theme and represents ethnicity in the antecedent Shevky-Bell Social Areas typology. The major associations here are limited economic resources (i.e., welfare, lower income, male and female unemployment) and two identified minorities, Blacks and Latinos.

Factor III, 1971, Youth Occupance

The extremely positive loading on the young age group (15-24) coupled with the sexually differentiated mirror image (percent young males and female) indicates another stage in the life cycle.⁶ Moreover, the rather moderate loading on public lands is perhaps indicative of access to university or colleges, of which San Diego has eight such institutions.

Factor IV, 1971, Male-Commercial Occupance

Factor IV is predominantly a male dimension. The high loadings on the sex ratio variables indicate a numerical bias in terms of male presence. Further, characteristics of this male bias is a higher number

of persons per residential acre (net density) and an emphasis of exclusion from the labor force (males not in labor force). These relationships are further, but moderately, defined by the bias in the presence of commercial land use. Thus, this factor may be defining a skid row or elderly inner city poor and/or a fixed income group.⁷

Factor V, 1971, Transportation-Manufacturing

Factor V is purely a land use dimension, thus indicating the spatial co-occurrence of manufacturing and transportation land uses.

Factor VI, 1971, Non-working Female--High Resources

The sixth and final dimension extracted from the 1971 data can be considered a female factor. Simply, the variable females not in the labor force coupled with the moderate loading, on upper income, indicates a socio-economic group where the female does not work and does not need to.

The 1975 Factor Structure

The original intent of this factor ecologic-regression exercise was to compare the life cycle and land use variables for different time periods but as will be evident in the following discussion of the 1975 factor structure, there is not a one-to-one variable correspondence on factors. Thus, the possible explanation for this situation is precisely three in number: (1) sampling error in one of the census surveys; (2) technical error on the part of this researcher in terms of coding the data; or (3) there were changes in the life cycle and land use in San Diego.

Factor I, 1975, Male--Commerical

The first factor in the 1975 analysis pertains to male predominance (Table 4.1). This factor is generally like its 1971 counterpart except for some major differences. Indications of male and female unemployment have switched from the 1971 racial-ethnic minorities factor to the male-predominance factor. Thus, the major conclusion is that the unemployment of males and females has now become more predominant in the largely male - commercial areas than the previously defined minority factor.

Factor II, 1975, Youth Areas

Factor II in 1975 corresponds with Factor III in the 1971 factor structure. Thus, the youth associated dimension has retained its composition through the years. (Table 4.1).

Factor III, 1975, Racial--Ethnic Minorities

This factor is not congruent with the Racial - Ethnic Minorities - Limited Resources of the 1971 factor structure (Table 4.1). Although Blacks and Latinos are the major population groups in this factor, the only economic variable is welfare. Also, within this dimension, the children variable received a moderate loading. But unlike 1971, where the children population received its highest loading on one factor, in 1975, this variable distributes itself at almost equal loadings throughout three dimensions. Thus, this dimension is referring to racial ethnic minority-welfare families. The inclusion of the children variable may also be the reason for the weak inclusion of the females not in the labor force variable.

Factor IV, 1975, Renters - Low Resources-
Small Population Per Household

This factor is differentiating between a population that rents its dwelling, usually a multi-family dwelling and has lower economic resources. A moderate portion of this population includes the late stage from a population that has higher incomes; a larger population per household; and persons in the middle stage with a moderate existence of children.

Factor V, 1975, Late Stage vs. Young
Family

The emphasis on this factor is the differentiation between a population in the late-middle and late stage age groups and younger population (25-34) with children and residing in areas with large proportions of vacant land.

Factor VI, 1975, Manufacturing-
Commercial Land

This factor is identical with the factor of the same label in 1971. The differences expressed are between transportation - manufacturing lands and residential land uses in single family dwellings.

Interpretation of Differences

The apparent disparities between the factor structures for 1971 and 1975 imply a multitude of processes altering the urban structure. But the identification and localization of these processes are in themselves topics for individual and extensive investigation. Consequently to concentrate on these processes marks a diversion from the original purpose of this research--The Spatial Dynamics of Rape. There is no intention to downgrade the significance or the merit of these

urban processes but there are more important spatial and social characteristics of rape which need to be discussed.

The Spatial Distribution of Rape:
1971, 1974 and 1975

By mapping the dependent variables for each year, some more curious relationships occur. Figures 4.1, 4.2, and 4.3 depict the spatial distribution of each census tracts proportion of the number of rapes for 1971, 1974, and 1975.

In 1971, seven tracts had over three percent of the total 109 rapes (Figure 4.1). The map seems to infer three centers for the high distributions: (1) in coastal area, two tracts 75 and 76 which are in the Ocean Beach and Mission Bay area respectively (see Figure 3.1); (2) three tracts in Central San Diego including tract 53 which is in the CBD (see Figure 3.1); and (3) two contiguous tracts on the southern border of East San Diego with the exception of a few instances, Kearny Mesa, Northern San Diego, and South San Diego are void of rape occurrences. Although there does not seem to be any zonal characteristics to the distribution, the CBD does appear to be a sort of a hub from which sectors of contiguous tracts radiate towards the coastal areas, Eastern San Diego and Northeastern San Diego.

Figure 4.2 depicting the 1974 distribution shows a rather obvious difference from 1971. The dispersion of rapes appears to have contracted from northern coastal areas. Moreover, with the exception of a few cases, Kearny Mesa, Northern San Diego, and Southern San Diego are void of rapes.

Six tracts in 1974 had over three percent of the rapes. Again, one could discern three centers: (1) two tracts in the Ocean Beach area

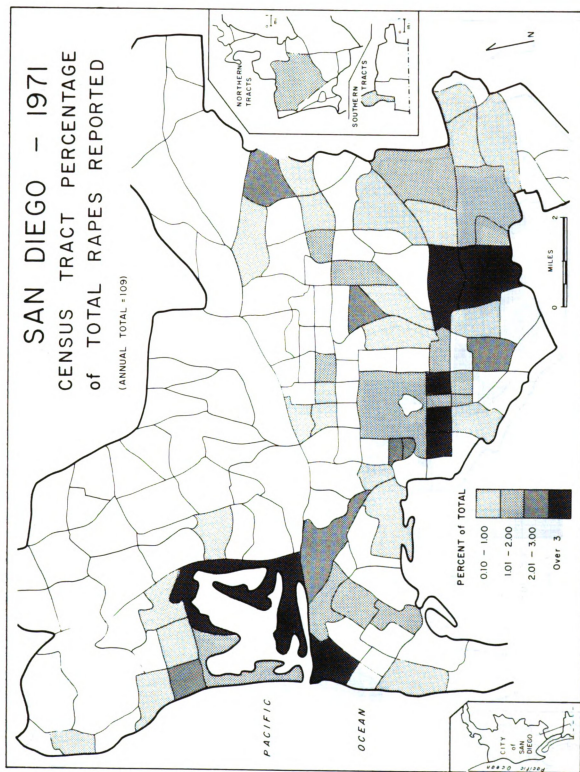


Figure 4.1

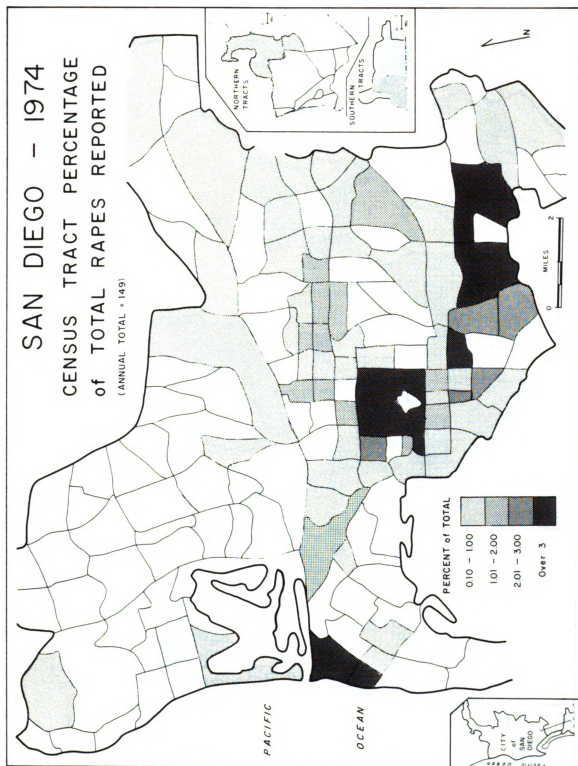


Figure 4.2

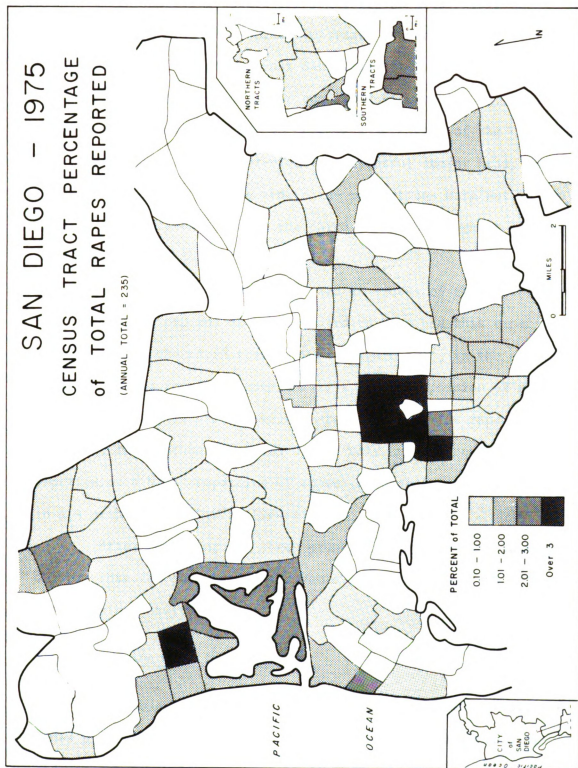


Figure 4.3

(tracts 75 and 73.01: see Figure 3.1); (2) the large tracts in Central San Diego encompassing Balboa Park; and (3) an almost corridor effect in Southeast San Diego. Another important change in the distribution is the rapes in Central and East San Diego intensified.

The first reaction after comparing Figures 4.1, 4.2 and 4.3 is that rape expanded spatially to encompass all areas of the city. Not only did it extend to the previously uneventful Kearny Mesa, North and South San Diego but in some tracts the proportions were not in the lowest class interval, but in the third and second highest intervals (see Inset Figure 4.3).

In 1975, only three tracts had an excess of three percent of the rapes. The CBD and Balboa Park tracts have had this experience previously but the third tract, 79.02 (Figure 3.1), in the coastal area is late in terms of experiencing a large proportion of rapes. Yet in one year, it had the highest proportion of the rapes. In contrast, the southeast section of the city, which previously had experienced a high proportion of rapes (Figures 4.1 and 4.2), decreased in its proportion in 1975 (Figure 4.3).

After comparing the three proportion maps, it should be quite obvious that the phenomenon is dynamic in that areas of highest occurrence can shift.

Rape Regression Models: 1971; 1974; and 1975

The dependent variable, which is the proportion of all the rapes by census tract, was regressed against the six factors or independent variables. Table 4.2 displays the multiple-correlation-regression tables for each year. The obvious conclusion is that the

Table 4.2--Summary Table: Significant Factors in the Spatial Patterns of Rape in San Diego; 1971; 1974; & 1975.

Year	Step Entered	Factor Label	Multiple Correlation	Simple Correlation	Multiple R Square(%)	R. Square Change(%)	Regression Coefficient	F-Significance
1971	1	Minority-Limited Resources	.32	.32	10.4%	10.4%	+.373	.00
	2	Late-Stage vs. Family State	.40	.24	16.2%	5.8%	+.278	.00
	3	Male-Commercial	.44	.19	19.9%	3.7%	+.222	.01
	4	Youth-Areas	.46	.13	21.6%	1.7%	+.154	.07
	5	Non-working Female - High Resources	.48	-.11	23.0%	1.3%	-.136	.11
	6	Transportation-Manufacturing	.489	.09	23.9%	0.9%	+.664	.20
1974	1	Renters - Low Resources	.30	.30	9.3%	9.3%	+.402	.00
	2	Racial-Ethnic Minorities	.35	.18	12.6%	3.3%	+.237	.02
	3	Youth-Areas	.36	.08	13.3%	.7%	+.113	.27
	4	Late Stage vs. Young Family	.37	-.07	13.9%	.6%	-.094	.35
	5	Male-Commercial Space	.398	.06	14.3%	.4%	+.086	.39
	6	Transportation-Manufacturing	.3789	.01	14.36%	.06%	+.019	.84
1975	1	Male-Commercial Space	.39	.39	15.8%	15.8%	+.332	.00
	2	Renters-Low Resources	.50	.31	25.7%	9.9%	+.263	.00
	3	Late Stage vs. Young Family	.51	.09	26.6%	0.9%	+.079	.18
	4	Racial-Ethnic Minorities	.52	.07	27.3%	0.7%	+.065	.27
	5	Youth-Areas	.527	.07	27.8%	0.5%	+.059	.32
	6	Transportation - Manufacturing	.528	-.03	27.9%	0.1%	-.029	.61

Source: Calculated by Author.

models were very poor in explaining the variation of the dependent variable. However, some very noteworthy relationships need to be mentioned.

In 1971, 23.9 percent of the variation of rape was explained by the six independent variables (Table 4.2). Only three factors had significant linear relationships with the dependent variable at a .05 significance level. These three factors would seem to concur with the sketchy evidence in the literature. Thus, the interpretation of these analyses and mustering reinforcements from the literature is almost as weak as the multiple coefficients of determination (R^2) resulting from the analysis.

The significance of the Minority - Limited Resources would correspond with Amir's findings only to the extent that a portion of their factors includes the black population.⁸ Of the variables on the Late - Stage vs. Family Stage factor (Table 4.1), multiple-family dwellings and renters would have some correspondence with the conclusions made by Selkin in Denver with exception that in this analysis young females were not identified with this renter group.⁹

Certain variables comprising the Male - Commercial have their literary antecedents from the works of Gerald Pyle. Namely, the variables of net population density and commercial land use may well be surrogates for Pyle's findings of urban transition and net population density.¹⁰

The other less significant factors do infer a younger age group. The youth factor was obvious, but non-working female - higher resources factor which is negatively related to rape has a variable within the factor that is positively related to rape (i.e., late young

population aged 25-34) (Table 4.1). The least significant factor, Transportation - Manufacturing, is weakly inferring a type of area in which rapes are committed and the weakly negative loading variables (single family dwellings and lower middle income) are inversely related in rape.

On the basis of the 1971 regression results, hypothesis one would have to be rejected. The evidence is too weak to formulate any substantive and concrete conclusions.

The results experienced in the 1971 regression model is repeated and intensified in the 1974 model. The six independent variables were able to gather a 14.36 percent explanation of the spatial variation of rape. Only two factors had a significant relationship at the .05 significance level. The most significant factor (Table 4.2) pertains to Renter - Low Resources and Small Population per Household. But the population groups on this factor (Table 4.1; Factor IV, 1975) show different relationships with rape. The age groups 1-14 and 35-44 have negative relationships while the 65 year or older group has a positive relationship. The major inference relationships from this factor are of housing status (renters) and the small population per household while the social-ethnic minorities factor alludes to a possible victim group. Although not exactly congruent with the 1971 factors of Minority - Limited Resources and Late Stage vs. Family Stage, the variables of race, ethnicity, renters, and population per household are included for both factors for the two time periods. It is interesting to note that the factor labelled "Late Stage vs. Young Family" (Table 4.2) has a negative simple correlation with rape. Thus,

a very weak inference can be made that this factor is pertaining to a positive association with the negative loading variables (Table 4.1, Factor V, 1975), thus indicating a potential victimization group in the late middle - late stages of the life cycle. In conclusion, the same result for 1971 is appropriate for 1974. The hypothesis must be rejected, because the evidence is too weak to formulate any substantive or concrete conclusions.

Although the 1975 analysis completes the results, some interesting and important relationships emerge. The most significant contrast is between 1974 and 1975.

The first and most obvious contrast is that in the span of one year, the number of single and multiple offender rapes went from 149 to 235. Moreover, the multiple R^2 using the same independent variables went from 14.36 percent to 27.9 percent; in other words, the explanation almost doubled. However, it was still weak--thus the hypothesis must be rejected.

Two factors in 1975 had a significant regression relationship with the dependent variable at the .05 level. What is important is that the two factors had a higher explanatory power than 1971 and 1974 using all six factors (Table 4.2). Moreover, in 1975 the most significant factor was Male - Commercial Space which in 1974 was almost insignificant (Table 4.2). But a consistent theme throughout the years has been the significance of renters, multiple family dwellings, and small population per household and has manifested itself the factor labelled Renters - Low Resources (Table 4.2 and Table 4.1, Factor IV, 1975).

Another interesting change throughout the years has been the association of the Transportation - Manufacturing factor. Although this factor has always had the weakest explanatory power (Table 4.2), the direction of its relationship went from positive to negative in 1975. The negative loading variable on this factor is single family dwellings (Table 4.1, Factor V, 1975). Thus, there exists a very weak inference of a positive relationship of single family dwelling space with rape.

The explanatory power of the Minority - Limited Resources (1971) and the Racial-Ethnic Minority (1975) factors decreased in 1975 whereas in the previous years, it had always been one of the most significant factors (Table 4.2).

Finally, another difference between 1974 and 1975 pertains to the relationship of the Late Stage vs. Young Family factor (Table 4.2). In 1974, this factor had a negative relationship with the dependent variable, thus, indicating a positive relationship between persons in the late-middle and late stage in the life cycle (Table 4.1, Factor V, 1975). However, in 1975, this factor changed the direction of its relationship to a positive one. Therefore, the positive loading variables on this factor are positively related to rape. Hence, persons in the 1-14 and 25-34 age groups in areas with a large population and large amounts of vacant land experienced a higher proportion of rapes.

In spite of the weak explanatory power of the independent variables, which resulted in the rejection of the research hypothesis, a most interesting benefit was gained. We were able to examine the spatial correlates of rape through more than one time period. Moreover, it was found that factors changed in their degree of explanatory power.

Residual Analysis: 1971, 1974, and 1975

Despite the fact that the regression analyses were unable to generate substantive and concrete inferential statements--an examination of the standardized residuals is necessary. The necessity is defined on the assumption that it is important to ascertain where the analysis over and under predicted the occurrence rape, along with the accurate predictions.

The map of standardized residuals for 1971 (Figure 4.4) is almost a mirror image of the dependent variable distribution (Figure 4.1). The first obvious relationship is that the regression model grossly underpredicted the highest proportion tract and those with two to three percent of the population. At the other extreme, tracts which were grossly overpredicted appear to be restricted to Central San Diego and in the northwest portion of East San Diego. Allegedly the attributes and conditions in these were optimal for the occurrence of rape. But according to Figure 4.1, these areas had little or no rapes. Overall, the average over and under predictions appear to be restricted to those tracts which had no or low proportions in the coastal area (i.e., parts of East San Diego). In the majority of Kearny Mesa, Southern and Northern San Diego, the average prediction pertained to areas which had no rapes in 1971.

A parallel conclusion can be made for 1974 (Figures 4.2 and 4.6). The highest proportion rape areas were grossly underpredicted while the gross overprediction, fewer tracts in number, pertained to areas with no rapes. The average over and under prediction form a fairly extensive and contiguous pattern of tracts with little or no rapes.

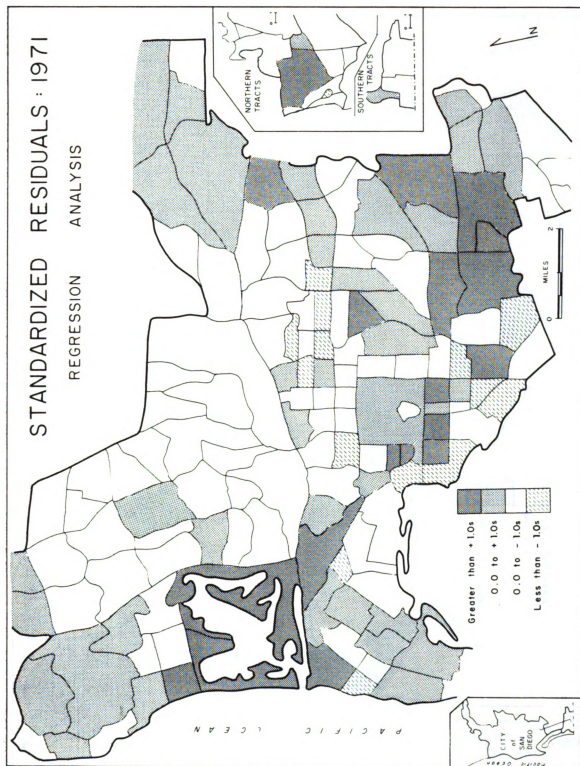


Figure 4.4

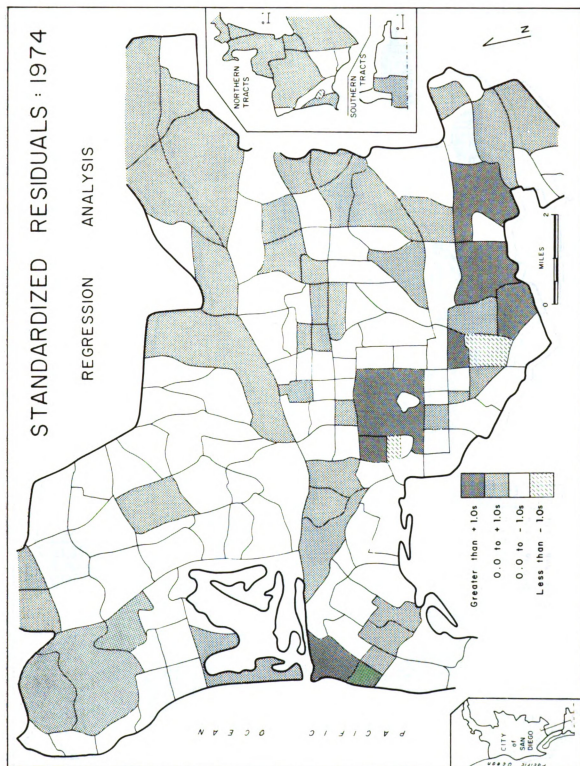


Figure 4.5

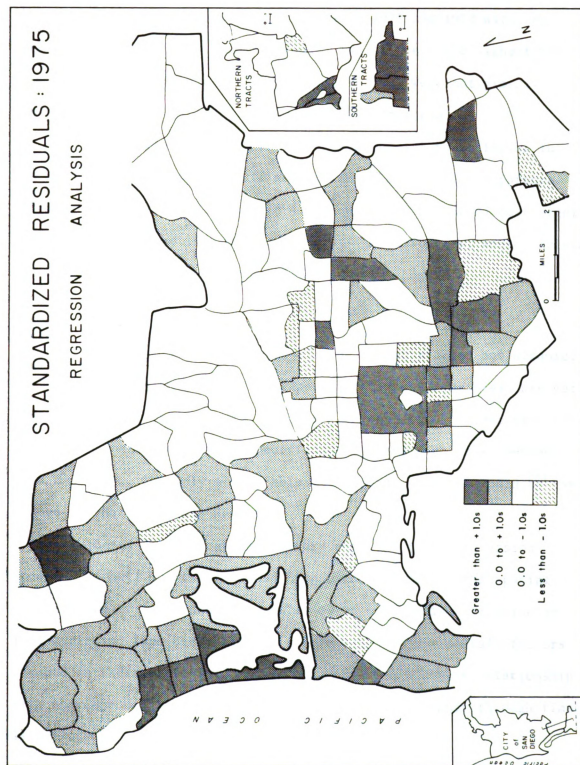


Figure 4.6

Although the spatial distribution of rape in 1975 encompassed more of the city, the same relationship between the dependent variables and the standardized residuals exists as in 1971 and 1974 with one major exception (Figures 4.3 and 4.6). Two of the three highest proportion tracts (Tracts 53 and 79.02: Figure 3.1) were not grossly underpredicted but received a mean level of prediction.

The significance of the Male - Commercial Space factor in the 1975 regression model would account for the CBD tract departure from gross underprediction (Table 4.2)¹¹ whereas the second most significant factor in the 1975 model, Renters - Low Resources, would explain tract 79.02 in the coastal area.¹²

Summary

The spatial distribution of rape is not static, but dynamic. There are varying intensities of rape. The highest rape areas are not always the same year to year. Moreover, through time we have seen the spread or expansion of rape, specifically the stark contrast between 1974 and 1975. The only accountable intervening variable would be the change in the California Rape Law.

Based on the weak explanatory ability of the regression models, the null hypothesis would have to be accepted. The spatial distribution of rape cannot be explained by the spatial variation of life cycle and land use structure. Moreover, because certain factors changed in their explanation power and direction of their relationship with the dependent variable, the assertion of consistency through time is rejected.

The problems associated with the testing of this hypothesis may pertain to the dependent variable, scale of analysis, or the assumption behind the hypothesis. A different dependent variable was selected because the antecedent ones (crime rates) could not be conceptually justified. Thus, the independent variables may be somewhat inappropriate.

The scale of analysis, aggregate census tract statistics, may also be inappropriate. The problem is trying to infer individual behavior from aggregate behavior.¹³ The problem is compounded by the fact that not all rapes are the same. Thus, they all cannot be explained by the same factors. A majority of the remaining text will be devoted to defining the spatial characteristics of specific rape types.

The one consistent and curious relationship of the residual maps was the gross underprediction of the regression model of the high rape areas.

Notes to Chapter IV

¹For a discussion of crime causation, social environment and the spatial interface see D. T. Herbert, "Social Deviance in the City: A Spatial Perspective," in Social Areas in Cities Volume 2: Spatial Perspectives on Problems and Policies, adapted by D. T. Herbert & R. J. Johnston (London: John Wiley & Sons, 1976), pp. 103-119.

²Two geographic works discussing the problems with crime rates are Phillip D. Phillips, "Risk - Related Crime Rates and Crime Patterns," Proceedings, Association of American Geographers, 5, 1973, pp. 221-224 and Gerald Pyle et al., The Spatial Dynamics of Crime, 1974, pp. 103-107.

³Sarah Lee Boggs, "The Ecology of Crime Occurrence in St. Louis: A Reconceptualization of Crime Rates and Patterns" (Ph.D. dissertation, Department of Sociology and Anthropology, Washington University, 1964), p. 26. Other works discussing the problems of crime rates are: Ronald L. Carter and Kim Quaile Hill, "The Criminal's Image of the City and Urban Crime Patterns," Social Science Quarterly 57 (December 1976): 597 and Calvin F. Schmid, "Urban Crime Area, II," American Sociological Review 25 (October 1960):655-678.

⁴For a discussion of diurnal urban population densities refer to: Chicago Area Transportation Study, Final Report I: Survey Findings, In geographic perspectives and urban systems: With Integrated Readings, edited by Brian J. L. Berry and Frank E. Horton (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1970), pp. 444-454.

⁵Refer to J. Douglas Porteous, Environment & Behavior: Planning and Everyday Urban Life (Reading, Massachusetts: Addison-Wesley Publishing Company, 1977), pp. 241-249.

⁶Ibid., p. 243.

⁷A brief discussion of skid row characteristics is provided in David Herbert's, Urban Geography: A Social Perspective (New York: Praeger Publishers, 1973), pp. 110-111. For a discussion of the elderly poor in San Diego consult: Frederick P. Stutz, "Adjustment and Mobility of Elderly Poor Amid Downtown Renewal," Geographical Review 56 (1976): 391-400.

⁸Menachem Amir, Patterns In Forcible Rape, 1971, pp. 52, 68, 149, 339.

⁹James Selkin, 1975, "Rape," Psychology Today 8 (January 1975): 72.

¹⁰Gerald Pyle et al., The Spatial Dynamics of Crime, 1974, pp. 65 and 122.

¹¹On the Male-Commercial Factor, the CBD received an extremely large positive factor score of 10.20.

¹²On the Renters-Low Resources Factor, tract 79.02 received a positive factor score of 1.21. This is not an excessive score, but it is the most significant score (positive or negative) when compared to the other factor scores.

¹³See Brian J. L. Berry, "The Logic and Limit of Comparative Factorial Ecology," Economic Geography 47 (1971): 209-219 and David Herbert, "Social Deviance in the City: A Spatial Perspective," pp. 9--92.

CHAPTER V

DISTANCE AND VICTIM-OFFENDER DEMOGRAPHIC DIFFERENTIALS

Age Disparity and Distance

The second research hypothesis, which deals with the rapes involving the less intimate relationships, asserts that the greater the age disparity between the victim and offender, the greater the absolute distance between the participants' residences. The paramount assumption is that a spatial pattern of residential occupancy based on the life cycle exists. Thus, controlling for the movement of victims, this hypothesis tests the variation in distance based on the differences in age.

Based on the seminal work of Menachem Amir, it is expected that the majority of the victims and offenders would be in the 15-29 age group. Moreover, based on the median age of the participants, Amir asserted that the offenders tended to be older than the victims.¹

Table 5.1 shows the annual age classifications of the victims and offenders. The predominance of the 15-29 age group is reaffirmed for both the victims and the known offenders in the stranger, casual acquaintance, and acquaintance rapes. Moreover, with the exception of the year 1972, the median age comparisons show the tendency for the offender to be older than the victims.²

Table 5.1--Age Distribution of Rape Victims and Offenders: 1971-1975.

Year	VICTIM				OFFENDER					
	<15 years	15-29 years	>29 years	Median	Total	<15 years	15-29 years	>29 years	Median	Total
1971	6	60	14	20.5	80	--	54	13	24.0	67
%	(7.5)	(75)	(17.5)				(80.6)	(19.4)		
1972	4	77	15	21.9	96	--	53	2	21.4	55
%	(4.16)	(80.2)	(15.6)				(96.4)	(3.6)		
1973	3	68	12	20.95	83	--	40	10	25.0	50
%	(3.6)	(81.9)	(14.4)				(80)	(20)		
1974	--	95	23	20.45	118	--	49	17	23.8	66
%	--	(80.5)	(19.5)			--	(74.2)	(25.75)		
1975	16	126	33	21.3	175	2	73	39	24.3	114
%	(9.1)	(72.0)	(18.85)			(1.75)	(64.0)	(34.2)		

Source: Calculated by Author () = Percent of Annual Total.

The role of 1975 as an anomaly is reinforced by the age distribution of the participants (Table 5.1). In comparison with the other years, 1975 produces the lowest proportion of the victims and offenders in the 15-29 age group. In the victim age categories, there was an increase in the frequency and proportion in the under fifteen age group while the over twenty-nine age group increased in frequency. However, the offenders showed an absolute increase in the frequency and proportion in the over twenty-nine age group. The only tangible conclusion is that there is an emergence of older and younger victims, but the known offenders display a rather abrupt shift to the older age group. However, the victim and offender age comparisons may be questionable since all the victims' ages are known while the offender ages are only a subset of the total. But in a qualified sense, the comparisons are noteworthy.

The verification of the age disparity and distance hypothesis involves only the matching of age cohort memberships of the known victims and offenders in the more anonymous relationships. Since it was too cumbersome to test the hypothesis on actual year differences, the participant ages were compared in terms of cohort memberships. Therefore, the category "same age" refers to participants whose ages were in the same cohort or one cohort younger or older. The "victim younger" category refers to victims whose ages were two or more cohorts younger than the offender while the "victim older" category refers to victims who were two or more cohorts older than the offender. Translated to actual years, same refers to within nine years, while older and younger refer to ten or more years.

Table 5.2 displays the mean distances of the age disparity groups by year. Only 1971 and 1974 produced significant differences among the age disparity groups. The past comparisons showed that the shortest distance was indicative of the older victim disparity while the longest was characteristic of the younger victim and the "same age" category maintained a middle position in 1971 and 1974. The same relationships or distance orders are not the same for 1972, 1973, and 1975. In 1975, the shortest distance category is the younger victim which would correspond with the emergence of the older offenders in that year (Table 5.1).

It is rather obvious that the null hypothesis must be accepted. However, a major benefit from this analysis is that when demographic patterns are analyzed on a five year basis, the relationships are not always the same. If this study pertained to only 1971 or 1974, then a significant relationship could have been discussed and the research hypothesis accepted because it was found in those two years that the older the victim, the shorter the distance between the participant residence while the younger the victim, the longer the distance. Thus, the greater age disparities produce extreme distance disparities.

In summary, it was found that there is an age bias in the victims and known offenders of rape. However, when measuring the distance between the participant residences by age disparity categories, the results are insignificant or weak at best. Perhaps the concept of the family life cycle, in general, and age disparity, in particular, are inappropriate for understanding the spatial and social dynamics of rape.

Table 5.2--Distance and Age Disparity: 1971-1975.

Dependent Variable Distance between Residence/Year	Means of Age Disparity Groups			F	F Prob.	Significant Pairwise Group Comparisons		Total
	Same Age $\bar{X}$ (miles) (N)	Victim Younger $\bar{X}$ (miles) (N)	Victim Older $\bar{X}$ (miles) (N)			LSD $P < .05$	SCHIFFE $P < .05$	
1971	2.68 (36)	5.60 (19)	1.30 (10)	2.547	.086	Older vs. Younger	--	65
1972	1.50 (4)	1.75 (9)	2.98 (4)	.376	.688	--	--	54
1973	2.85 (32)	3.54 (13)	6.13 (5)	.340	.713	--	--	50
1974	1.64 (41)	6.54 (18)	.84 (7)	6.08	.004	Older vs. Younger Same vs. Younger	Older vs. Younger Same vs. Younger	66
1975	2.91 (63)	1.79 (39)	4.20 (11)	1.446	.240	--	--	113

Source: Calculated by Author

Note: () = Frequency

Race - Rape - DistanceIntroduction

The third research hypothesis asserts that the distance between the residences of the participants in intraracial rape (same racial - ethnic group) will be less than interracial rapes (victim or offender from different racial - ethnic groups). The foundation for this research hypothesis relies on the findings of Amir and racial residential segregation research.

As revealed in the literature review, Amir found that a majority of the known black intraracial rapes displayed a pattern of limited mobility whereby the offenders' and victims' residences, along with the location of the crime scenes, were within a five block area. But a majority of the known white intraracial rapes displayed a mobility pattern where none of the relevant locations were within a five block area. Moreover, a majority of the known interracial rapes were in the same category as the white intraracial rapes.³ The inference of differential mobility based on race is quite clear. Thus, the plausible explanation lies within the spatially restricted residential occupancy of racial ethnic minorities.⁴

Victim-Offender Racial and Ethnicity
Interactions: 1971-1975

Previous works have shown that rape is an intraracial phenomenon.⁵ An exception to this empirical observation was encountered in the San Diego incidents. Table 5.3 depicts the racial-ethnic interactions by year. Again the benefit of examining a phenomenon through time is revealed. If this study had concentrated only on 1971, then a

Table 5.3-Victim - Offender Racial - Ethnic Interaction.

Offender/Victim	1971	1972	1973	1974	1975
White/White	30	42	35	52	85
Black/Black	12	23	16	21	14
Latino/Latino	2	2	1	3	6
Indian/Indian	--	--	--	--	1
Oriental/Oriental	--	1	1	--	--
Total Interracial	44	68	53	76	106
Interracial Offender/Victim					
White/Black	--	1	--	3	--
White/Latino	1	2	1	1	4
Black/White	38	19	23	28	45
Black/Latino	6	3	1	3	2
Black/Indian	--	--	--	--	2
Black/Oriental	--	--	--	2	--
Latino/White	1	7	6	17	25
Latino/Black	--	2	1	--	2
Latino/Oriental	--	--	--	--	1
Indian/White	--	1	1	--	2
Oriental/White	--	--	--	--	1
Oriental/Latino	--	1	--	--	--
Total Interracial	49	36	35	54	84
Unknown/White	1	1	1	1	4
Unknown/Latino	--	--	--	--	1
Total All Categories	94	105	87	131	195
Total - Unknown	93	101	86	130	190
Interracial/(Total - Unknown) X 100	52.6%	51.6%	58.3%	11.5%	44.2%

Source: Author

claim of interracial predominance would have been made, but this assertion would have been false for the following years. An interesting note is that 1972 marks the lowest year for interracial rape, but its proportion increases up to 1975.

The explanations for the predominance of interracial rape in 1971 and intraracial rape in the following years cannot be definitely determined. One can only speculate as to the reasons for the interracial - intraracial change. However, there are some interesting victimization trends or patterns in the data.

First, interracial rape has primarily involved a black offender and a white victim. Beginning in 1974, we find an increase in the latino offender-white victim rapes. Secondly, there is a low frequency of white offender - non-white victim rapes. Perhaps this is the type of rape where the victim is very hesitant to report the offense to the predominantly white establishment.

Ignoring the race and ethnicity interactions of the participants and concentrating on their composition reveals further information about victimization and criminalization. According to the 1970 Federal Census and the 1975 Special Census, the whites comprised 81 and 84.3 percent of the households while the Blacks comprised 6.5 and 6.8 percent of the households. The Latinos comprised 10.0 and 6.1 percent.⁶ Table 5.4 shows the annual breakdowns of victims and offenders by race and ethnicity.

The victimization patterns show an under representation of the white and latinos when compared to their total composition while the blacks are over represented as victims. The year 1975 marks a change in the victim patterns, in that, the white proportion was at its

Table 5.4--Victim-Offender, Race-Ethnic Composition: 1971-1975.

Race - Ethnicity	1971		1972		1973		1974		1975		Total	
	V	O	V	O	V	O	V	O	V	O	V	O
White	73 (77.7)	31 (33.0)	70 (66.7)	45 (42.9)	65 (74.7)	36 (41.4)	98 (74.8)	56 (42.7)	161 (82.6)	89 (45.6)	467 (76.3)	257 (42.0)
Black	12 (12.8)	56 (59.6)	26 (24.8)	45 (42.9)	18 (20.7)	40 (46.0)	24 (18.3)	54 (41.2)	17 (8.7)	63 (32.3)	97 (15.8)	258 (42.2)
Latino	9 (9.6)	6 (6.4)	8 (7.6)	11 (10.5)	3 (3.4)	8 (9.2)	7 (5.3)	20 (15.3)	13 (6.7)	34 (17.4)	40 (6.5)	79 (12.9)
Indian	--	--	--	1 (1.0)	--	1 (1.1)	--	--	3 (1.5)	3 (1.5)	3 (1.5)	5 (.8)
Oriental	--	--	1 (1.0)	2 (1.9)	1 (1.1)	1 (1.1)	2 (1.5)	--	1 (.5)	1 (.5)	5 (.8)	4 (.7)
Unknown	--	1 (1.1)	--	1 (1.0)	--	1 (1.1)	--	1 (.8)	--	5 (2.6)	--	9 (1.5)

Source: Calculated by Author. Note: () = Percentage; V = Victim; O = Offender

highest and the black victims had their lowest proportion of the five year period.

The offender categories, Table 5.4, show a greater disparity in terms of over and under representation of offender race and ethnic categories. However, 1974 appears to be a pivotal year in the offender trends. This year initiates a change where the number and proportion of white offenders exceeds the black offenders. Thus, the change in frequency and proportion in 1975 is much greater. The year 1974 also marks the rise or increase in the latinos as an offender group.

The implications are clearly that the victims' and offenders' racial and ethnic origins are not stable from year to year. In 1975, the victims begin to approach their proportion of the total households in the city. The offender classification in the same year saw a sharp increase in the white offenders while one minority, the blacks, sharply dropped in its percentage with another minority group, the latinos, producing a sharp increase in its frequency (70 percent change). Therefore, it is possible that the new rape law in 1975 may have had an effect on the racial-ethnic memberships of both victims and offenders. It may well be possible to speculate that the full reporting of rape would reflect the racial-ethnic composition of the population.

Distance by Victim-Offender Race/ Ethnicity

The testing of this hypothesis involved the measurement of the distances between the participants' residence within three racial groups: (1) white intraracial rape; (2) interracial rape (white victim - non-white offender); and (3) non-white intraracial rape. A

fourth category which included rape between different non-white members was initially included in the analyses, but due to low frequencies (17 in all) and unstable variances no test was conducted to assess rape differences between these groups.

Table 5.5 displays the distances between the participants' residences within the three racial categories by year. The results of this analysis are similar to the results of the previous analyses, namely that the relationships are not consistent from year to year.

During 1971, the distances are not in support of the research hypothesis, since the interracial rapes entail less distance than the intraracial rapes. The same relationship is true for 1973. But unlike rapes in 1971, the white intraracial distance is longer than the non-white intraracial distance. However, during 1972 and 1974, it is found that the distances are significantly different and in support of the research hypothesis. Moreover, although weakly significant, 1975 conforms to the research hypothesis.

There are some other interesting facts emerging from this analysis. First, with the exception of the years 1973 and 1975, the non-white intraracial rapes consume longer distances than the white intraracial rapes. One could only speculate as to the possible explanations for this condition. Secondly, the white intraracial rape distances have a wide range of values as evidenced by the changes from 1971 to 1973. Again one could only speculate as to the explanations for this phenomenon.

Table 5.5.--Distance Between Residence by Offender-Victim Race.

Dependent Variable Distance between Residence/Year	Means of Racial-Ethnic Groups			F	F Prob.	Significant Pairwise Group Comparisons		
	Group I $\bar{X}$ (miles)	Group II $\bar{X}$ (miles)	Group III $\bar{X}$ (miles)			LSD $P < .05$	Scheffe $P < .05$	Total
1971	3.11 (26)	2.26 (34)	3.42 (13)	.4244	.65	--	--	73
1972	.81 (28)	2.3 (15)	1.83 (16)	3.21	.047	I vs. II II		59
1973	3.85 (25)	2.56 (18)	2.80 (8)	.2670	.766	--	--	51
1974	1.11 (35)	2.8 (26)	1.6 (15)	2.42	.095	I vs. II II		76
1975	1.8 (60)	2.1 (47)	1.23 (14)	.39	.67			121
Total	(174)	(140)	(66)					380

Source: Calculated by Author

() = Frequency

Group I = White Victim and Offender

Group II = White Victim and Non-white Offender

Group III = Non-white Victim and Offender

Conclusions

A theme common to the two previous hypotheses has emerged once again. Simply, there has been a lack or absence of consistent and definitive relationships. Because of sharp changes and fluctuations, it is difficult to ascertain both spatial and social trends.

The test of this hypothesis showed a strong relationship between race differentials and distance but only for two years (1972 and 1974). As previously stated in reference to the other hypotheses, a major benefit is the examination of these spatial and social relationships through time. Hence, if one had concentrated solely on the year 1972 or 1974, then the research hypothesis would have to be accepted. It is rather obvious that the phenomenon rape is too variate to encounter the hypothesized relationships. Thus, because the relationships were not consistent from year to year, the research hypothesis is rejected. Therefore, there is some relationship between victim-offender race differentials and distance between their residences but the relationship is not consistent through time.

Notes to Chapter V

¹Menachem Amir, Patterns in Forcible Rape, 1971, p. 52.

²An analysis of variance of the mean age of the victims and offenders by year produced no significant differences: overall mean victim age was 24.6 years; mean offender age was 25.8 years.

³Menachem Amir, Patterns in Forcible Rape, 1971, p. 92.

⁴For the seminal geographic works on this topic refer to: Richard Morrill, "The Negro Ghetto: Problems and Alternatives," The Geographic Review 55 (1965):339-361. Also, Harold M. Rose, "The Development of an Urban Subsystem: The Case of the Negro Ghetto," Annals of the Association of American Geographers 60 (1970):

1-17. Also, _____, The Black Ghetto: A Spatial Behavioral Perspective (New York: McGraw-Hill Book Company, 1971).

⁵Menachem Amir, Patterns in Forcible Rape, 1971, pp. 44-45.
Also refer to Michael Agopian, Duncan Chappell and Gilbert Geis, "Interracial Forcible Rape in a North American City," In Israel Drapkin and Emilio Viano, Eds., Victimology (Lexington, Mass.: Lexington Books, 1974), pp. 93-102.

⁶San Diego City Planning Department, Data Services, "A Brief Statistical Analysis of San Diego's People and Housing As Identified by the 1975 Special Census," October 28, 1975, p. 8.

CHAPTER VI

CURSORY EVIDENCE OF SPATIAL-SOCIAL TRENDS

Introduction

The three antecedent discussions of hypotheses convey the simple notion that rape is variant and changeable through time. Therefore, the exploration and description of some salient social-spatial characteristics producing this variability is mandatory before the testing and discussion of the fourth and final hypothesis.

Victim-Offender Relationship: 1971-1975

As previously stated, the victim-offender relationship or interaction between the participants is crucial in defining rape as a criminal-social problem or as a social problem involving a crime. The fundamental assumption being the less intimate the previous relationship between the participants, the greater the public problem and the greater demand for the intervention on the part of law enforcement.

Table 6.1 depicts the annual frequencies and proportions of the different relationship categories. At first glance, we can conclude that reported rapes are predominantly a stranger related phenomenon. But the changes through the years relays another important fact; the stranger variety rape declined sharply in 1975.

Also in 1975, the casual acquaintance and acquaintance rapes displayed substantial frequency increases and the latter relationship had its highest proportion of the study period. A less dramatic

Table 6.1--Victim-Offender Relationship: 1971-1975.

Victim-Offender Relationship (VOR)	Year					$\bar{x}$ Scenes
	1971	1972	1973	1974	1975	
Unknown	1 (1.6)	-- --	1 (1.1)	1 (.8)	1 (.5)	4 (.65) 2.1
Stranger	57 (60.6)	76 (72.4)	66 (75.9)	99 (75.6)	122 (62.6)	420 (68.6) 2.8
Casual Acquaintance	15 (15.95)	11 (10.5)	12 (13.8)	12 (9.2)	25 (12.8)	75 (12.25) 3.54
Acquaintance	7 (7.44)	9 (8.6)	4 (4.6)	6 (4.6)	27 (13.8)	53 (8.66) 2.69
Family Friend	3 (3.19)	4 (3.8)	2 (2.3)	6 (4.6)	6 (3.1)	21 (3.43) 2.85
Close/Boy Friend	7 (7.44)	2 (1.9)	2 (2.3)	4 (3.1)	10 (5.1)	25 (4.08) 2.28
Family/Relative	4 (4.2)	3 (2.9)	-- --	3 (2.3)	4 (2.1)	14 (2.28) 1.95
Total	94	105	87	131	195	612 2.85

Source: Calculated by author VOR by year: Chi Square = 28.74; $P \leq .2300$; () = percent of annual total.

change was experienced by the close/boy friend category. The conclusion reached here is that 1975 produced an increase in almost all relationship categories but the previously mentioned non-stranger categories show a very striking change.

The last column in Table 6.1 shows the average number of scenes by relationship for all years combined. The unknown and family/relative categories have the least amount of victim movement. However, in terms of numerical predominance and anonymity, the stranger category represents minimal movement and the casual acquaintance the most movement. Beginning with the family friend category, the generalization that intimacy increases as movement decreases would be quite valid. The issues of number of scenes will reoccur throughout the text and its spatial interpretations will be made in the discussion of the fourth hypothesis.

Method of Operation: 1971-1975

The second most important aspatial factor in rape is how the offender approaches the victim. Table 6.2 depicts the frequencies and proportions of the methods of operation by year. Thus, the illegal entry of a residence is the numerically and proportionally predominant method of operation for each year. However, certain notable changes occurred which lend further credence to the impact of a revised rape law in 1975.

Illegal entry of residence was the predominant MO in 1975. However, the numerical increase from 1974 was minute while the proportional decrease was dramatic. Moreover, in 1975, other methods

Table 6.2--Method of Operation: 1971-1975.

Method of Operation	1971	1972	1973	1974	1975	Total	$\bar{X}$ Scenes
Illegal Entry	42 (44.6)	41 (39.0)	29 (33.3)	56 (42.7)	60 (30.8)	228 (37.25)	2.0
Kidnap - Attack	15 (15.95)	28 (26.7)	14 (16.1)	22 (16.8)	42 (21.5)	121 (19.77)	3.4
Meet Outdoors	5 (5.3)	4 (3.8)	6 (6.9)	7 (5.3)	16 (8.2)	38 (6.2)	3.6
Accept Ride/Hitchhike	10 (10.6)	8 (7.6)	11 (12.6)	14 (10.7)	22 (11.3)	65 (10.12)	4.2
Meet Public Building	2 (2.12)	2 (1.9)	13 (14.9)	5 (3.8)	11 (5.6)	33 (5.39)	3.1
Meet Bar	5 (5.3)	5 (4.8)	4 (4.6)	5 (3.8)	19 (9.7)	38 (6.2)	3.4
Third Person	1 (1.06)	-- --	-- --	3 (2.3)	6 (3.1)	10 (1.63)	3.2
Known	10 (10.63)	11 (10.50)	7 (8.0)	12 (9.2)	16 (8.2)	56 (9.15)	2.1
Other	3 (3.19)	6 (5.7)	2 (2.3)	6 (4.6)	1 (.5)	18 (2.94)	2.5
Unknown	1 (1.06)	-- --	1 (1.1)	1 (.8)	2 (1.0)	5.1 (.81)	2.1
Total	94	105	87	131	195	612	2.85

Source: Calculated by author. MO by Year: Chi Square = 56.12; $P \leq .0174$; () = Percent of Annual Total.

experienced their highest frequencies for the study period. Hence, it is the composition of the methods for 1975 that make it anomalous.

The first interesting change in 1975 is the numerical increase in the second most perilous method, the kidnap-attack, followed by the less dramatic increases in the less perilous methods of "meet outdoors and accept ride/hitchhike." Hence, there is a marked shift away from the illegal entry of the victim's residence to those involving the meeting and/or assault outdoors.

A second interesting observation in 1975 is the emergence of the methods of operation which implied or misinterpreted complicity or precipitation on the part of the victim. The MOs of "accept ride/hitchhike," "meet bar," "third person," and "known" are representative of the alleged complicity or precipitation methods.¹ The inference, although tenuous, is that the revised California rape law facilitated the entry of the less anonymous relationship and the alleged victim precipitated rape incidents into the criminal justice system. The almost dramatic increase in the "meet bar" method in 1975 (Table 6.2) lends support to this assumption.

While 1975 has been the sole focus of the changing methods of operation, 1973 has a rather curious method of operation composition (Table 6.2). As previously stated, this year has the lowest frequency of rape incidents and perhaps assumes the role of a pivotal year. Besides the low annual rape frequency, the most inquisitive circumstances pertains to two methods of operation. Although in 1973, the numerical and proportional predominance of the illegal entry MO is substantiated, a peculiar attribute is its lower frequency and

proportion compared to the other years. Supplemental to this oddity is the high frequency and proportion of the "meet in a public building" method.

The main issue which will be explained in the fourth hypothesis is the proportional relationship between methods. In other words, do the methods of operation differentiated by offender status (unknown, single, series) determine the frequencies and proportions of the different methods of operation?

Another important measure is the average number of scenes for each method of operation. The last column in Table 6.2 presents the average number of scenes for each method. This measure is actually a surrogate for the amount of movement indicative of each MO.

Although it may be somewhat tautological, variations in the number of scenes exist. If we construct a hierarchy of perilous methods with "accept ride/hitchhike" being the least perilous and "illegal entry" the most perilous, we can conclude an inverse relationship between the amount of movement and peril. Thus, with an average of two scenes, illegal entry involves the most fear or danger with the least amount of movement while the "accept ride/hitchhike" method which initially involves less danger for the victim involves more movement (6.2).

More associations between the method of operation, number of scenes, and other factors can be made. The outdoor MOs (kidnap-attack, meet outdoors, and accept ride/hitchhike) involve more movement than indoor non-illegal entry methods (meet at a public building or bar). Furthermore, the methods emphasizing legal access or trust (third

person or known) as an aggregate involve less movement than the outdoor methods.

The annual distributions and comparisons of the methods of operation lend further credence to the assertion that rape is not a static phenomenon. Moreover, the methods of operation have distinctive measures of movement or number of scenes which compounds the variability of rape.

The previous hypotheses and discussions of relationship and MO illustrate some of the social and spatial fluctuations of rape. But further measures of change require exposition before the testing and discussion of the fourth hypothesis because these descriptions essentially form the framework for the final hypothesis.

Selected Measures of Change

Table 6.3 presents three different categories or measurements of annual changes or variations of rape. With the exception of the first category, the rest involve the use of a direct spatial measure-distance..

The average number of scenes per year gives an indication of the overall mobility of each years' rape volume. As evident from Table 6.3, 1975 emerges as a distinct year in terms of its average number of scenes. The conclusion is that rape in 1975 involved more of the mobile relationships and MOs to produce significant statistical differentiation from the other years.

A spatial measure which supports 1975 as an anomaly is the mean distance of the crime scene from the CBD (Table 6.3: Test 2). At first glance, it is obvious that a slight positive relationship

Table 6.3--Selected Measures of Rape Change: 1971-1975.

Dependent Variables	Annual Group Means					F	F Prob.	Significant Pairwise Group Comparisons	
	1971	1972	1973	1974	1975			LSD P < .05	Scheffe P < .05
Scenes	2.80 (94)	2.70 (105)	2.96 (87)	2.82 (131)	3.00 (194)	1.99	.093	1971-1974 vs. 1975	
Distance Crime Scene from CBD (miles)	2.98 (94)	3.48 (105)	3.66 (87)	3.88 (131)	4.42 (195)	2.83	.024	1971 vs. 1974, 1971 vs. 1975, 1972 vs. 1975	1971-1974 vs. 1975
Distance Between Meeting Place and Crime Scene (miles)	1.12 (28)	.76 (31)	2.4 (33)	1.02 (43)	1.22 (76)	2.27	.0623	1972, 1974 vs. 1973	

Source: Calculated by Author Note: () = Frequency.

exists between time and mean distance of the crime scene from the CBD, but the average distance increase between 1971 and 1974 is .29 miles while the increase between 1974 and 1975 is an abrupt .54 miles. Therefore, 1975 is statistically significant from 1971 to 1974 which form a homogeneous group. The abrupt distance change from 1974 to 1975 relegates the latter year as a spatial anomaly.

A second simple measure pertains to the distance traveled by the participants (victim and offender) jointly from a separate initial meeting place to a separate crime scene (Table 6.3: Test 3). In this test, 1973 emerges to be significantly different from the homogeneous group of 1972 and 1974. The distances between the scenes in 1973 (2.4 miles) more than doubles any other year except 1975. It is interesting that mean distances for all years, except 1973, range from .76 miles to 1.22 miles. In other words, the differences between the distances are insignificant, but the abrupt mean distance for 1973 not only eliminates the possibility of a temporally constant spatial measure but also illustrates the dynamic and variable character of the crime.

One apparent aspatial relationship exists. There is not a consistent increase in distance between the initial meeting place and crime scene with the passage of time. However, there is an increase in the frequency of rapes that involve separate initial meeting places and crime scenes (Table 6.3: Test 3). The overall frequency of rapes does not increase with time because the middle year in the study, 1973, has the lowest frequency (87). However, the frequency of rapes involving separate meeting places and crime scenes did increase with time.

Between 1971 and 1974, the increase in this type of rape is 53.5 percent, but between 1974 and 1975, the increase is 76.2 percent.

Although 1975 did not retain its position as a spatial anomaly with this distance measure, it is a criminological anomaly. This is more important to the law enforcement community since they have to react to a crime whose character is variant and dynamic.

Conclusions

The previous discussions have described some of the varying social and spatial characteristics of rape. On the social dimension, the victim-offender relationships and the methods of operation change through time, but so radically within one year (1974 to 1975) that support for the impact of a revised rape law is formed. Complementing these changes are annual increases in the average number of scenes and incidents involving multiple locations. The only spatial measure supporting the assertion of 1975's individuality is that the mean distance of the crime scene from the CBD increases with time and in 1975, there was an abrupt increase.

These simple descriptors of social-spatial change provide the background for the fourth hypothesis. Thus, one of the many associations tested will be how these characteristics are explained when rape is differentiated by criminal career-offender status.

Notes to Chapter VI

¹See Menachem Amir, Patterns in Forcible Rape, 1971, pp. 259-276. Also, Steven Nelson and Menachem Amir, "The Hitchhike Victim of Rape: A Research Report," in Israel Drapkin and Emilio Viano, eds. Victimology: A New Focus (Lexington, Mass.: D. C. Heath, 1973), Volume 5, pp. 47-64.

CHAPTER VII

CRIMINAL CAREER-OFFENDER STATUS: SPATIAL-SOCIAL REGULARITIES

Introduction

The fourth research hypothesis asserts that significant spatial and social differences emerge when rape is examined within a framework based on criminal career-offender status. To reiterate, the offender status groups are: (1) open/unknown (the number of offenses committed by a single offender is unknown); (2) single incident (one offender commits one incident and then becomes known and/or apprehended); and (3) series (one offender commits two or more incidents before he becomes known and/or apprehended).

Social differences simply means that each offender status group will have bias in their composition of victim-offender relationships, methods of operation, and average number of scenes. The spatial differences refer to variations in distance (i.e., distance of the single and series offenders to the initial meeting place and total distance between the scenes where the victim and offender travel concurrently). Moreover, each group will have variations in the spatial distributions of the crime scene locations. Specifically, the spatial distribution of the crime scene locations for each offender status group will portray variations in extent, area, and density. Finally, each offender status group will have ecological biases in the types of areas in which the crimes are committed.

For the sake of brevity, the tables presenting the victim-offender relationships and the methods of operation for each offender status group are aggregated for all five years in the study. The presentation of separate tables for each year would have entailed fifteen separate tables, thus, making it very cumbersome to present and for the reader to absorb. However, specific relationships that will explain annual social and spatial anomalies will be conveyed.

Open/Unknown Offender Status

Table 7.1 displays the victim-offender relationships and methods of operation for the open offender status rapes. It is quite obvious that this category is strongly biased towards maximum anonymity (strangers, 94.5 percent of the total) and the most perilous methods of operation (illegal entry and kidnap-attack comprise 76 percent of the total). Also, these MOs are exclusively characteristics of the stranger offender.

Single Incident Offender Status

The single incident offender has an entirely different composition than the open/unknown offender (Table 7.2). This category seems to encompass all relationships and methods of operation. Although the stranger relationship has a plurality, its predominance is outweighed by the combination of the other relationships. Yet, within the stranger category, the illegal entry and kidnap-attack MOs constitute 20 percent of all the single incident rapes. This proportion exceeds all other relationship categories with their respective methods of operation except the casual acquaintance. But within the casual acquaintance category, it is impossible to find two methods of operation that equal or surpass 20 percent. Thus, like the open cases, a majority of the

Table 7.1--Open/Unknown Offender Status: Victim-Offender Relationship and Method of Operation.

Relationship	Method of Operation								
	Illegal Entry	Kidnap/Attack	Meet Outdoors	Accept Ride/Hitchhike	Meet Public Building	Meet Bar	Other	Unknown	Total
Stranger	102 (50.7)	51 (25.3)	8 (3.9)	19 (9.45)	8 (3.9)	-- --	1 (.49)	1 (.49)	190 (94.5)
Casual Acquaintance	-- --	-- --	2 (.99)	1 (.49)	-- --	3 (1.49)	1 (.49)	-- --	7 (3.48)
Unknown	-- --	-- --	-- --	-- --	-- --	-- --	-- --	4 (1.99)	4 (1.99)
Total	102 (50.7)	51 (25.3)	10 (4.97)	20 (9.95)	8 (3.9)	3 (1.49)	2 (.99)	5 (2.48)	201

Source: Calculated by Author.

Note: Chi Square = 309.62; $P < .001$; Contingency Coefficient = .77946; () = percent of total.

Table 7.2--Single Incident Offender Status: Victim-Offender Relationship and Method of Operation.

Relationship	Method of Operation									
	Illegal Entry	Kidnap/Attack	Meet Outdoors	Accept Ride/Hitchhike	Meet Public Building	Meet Bar	Third Person	Known	Other	Total
1. Stranger	21 (8.8)	29 (12.0)	7 (2.9)	13 (5.4)	5 (2.1)	2 (.8)	-- --	1 (.4)	2 (.8)	80 (33.3)
2. Casual Acquaintance	2 (.8)	1 (.4)	6 (2.5)	17 (7.1)	7 (2.9)	19 (7.9)	2 (.8)	2 (.8)	5 (2.1)	61 (25.4)
3. Acquaintance	8 (3.3)	1 (.4)	1 (.4)	2 (.8)	4 (1.7)	11 (4.6)	4 (1.7)	9 (3.7)	3 (1.2)	43 (17.9)
4. Family Friend	-- --	2 (.8)	1 (.4)	-- --	-- --	-- --	2 (.8)	14 (5.8)	1 (.4)	20 (8.3)
5. Close/Boy Friend	-- --	-- --	1 (.4)	-- --	-- --	2 (.8)	-- --	16 (6.7)	4 (1.7)	23 (9.6)
6. Family/Relative	-- --	-- --	-- --	-- --	1 (.4)	-- --	-- --	12 (5.0)	-- --	13 (5.41)
Total	31 (12.9)	33 (13.7)	16 (6.7)	32 (13.3)	17 (7.1)	34 (14.2)	8 (3.3)	54 (22.5)	15 (6.3)	240

Source: Calculated by Author.

Note: Chi Square = 242.82; $P < .001$; Contingency Coefficient = .7917; Expected Cell Frequency Less Than 5; () = Percent of Total

perilous methods are within the stranger relationship, but this is a weak majority.

Another important and distinctive factor in this group, irrespective of victim-offender relationship, is the frequency and proportion of the methods which implied misperceived victim complicity (accept ride/hitchhike and meet bar) and those inferring trust (third person and known-legal access).

The composition of the single incident rapes is quite clear. It is diversified and contains not only the more anonymous relationship and perilous methods of operation but also the more intimate relationships and less perilous methods.

Series Offender Status

The composition of the series rapes greatly resembles the open cases (Table 7.3) since the overwhelming majority of the cases are stranger-forcible entry and stranger kidnap-attack (73.7 percent). There is a slight difference between the open and series categories. While strangers comprise 94.5 percent of the former category, they are 88.3 percent of the latter but the difference lies in the relationships that comprise the remainder of the categories (Tables 7.1 and 7.3).

Seven casual acquaintances and four unknown relationships are the remainder of the open cases. The remainder of the series cases is composed of seven casual acquaintances, ten acquaintance, one family friend, and two close/boy friends. The inference, although very tenuous and better substantiated by larger and diverse frequencies, is that the series offenses have a slight bias towards the more intimate relationships.

Table 7.3--Series Offender Status: Victim-Offender Relationship and Method of Operation.

Relationship	Illegal Entry	Kidnap-Attack	Meet Outdoors	Accept Ride/Hitchhike	Meet Public Building	Meet Bar	Third Person	Known	Other	Total
1. Stranger	90 (52.6)	36 (21.1)	8 (4.7)	9 (5.3)	7 (4.1)	-- --	-- --	-- --	1 (.6)	151 (88.3)
2. Casual Acquaintance	1 (.6)	-- --	3 (1.8)	3 (1.8)	-- --	-- --	-- --	-- --	-- --	7 (4.1)
3. Acquaintance	4 (2.3)	1 (.6)	-- --	-- --	1 (.6)	1 (.6)	2 (1.2)	1 (.6)	-- --	10 (5.8)
4. Family Friend	-- --	-- --	1 (.6)	-- --	-- --	-- --	-- --	-- --	-- --	1 (.6)
5. Close/Boy Friend	-- --	-- --	-- --	1 (.6)	-- --	-- --	-- --	1 (.6)	-- --	2 (1.2)
Total	95 (55.6)	37 (21.6)	12 (7.0)	13 (7.6)	8 (4.7)	1 (.6)	2 (1.2)	2 (1.2)	1 (.6)	171

Source: Calculated by Author.

Note: Chi Square = 150.78; $P < .001$; Contingency Coefficient = .68454; Expected Cell Frequency less than 5; () = Percent of Total.

Summary of the Offender Status Groups

In terms of social differences, there are two groups. The strong predominances of the stranger rapes using the more perilous methods would comprise the first group. This group is distinct from the single incident group which is exemplified by a diversity of relationships and methods of operation. The minute difference in the non-stranger relationships and between the series and open cases is curious at best and not strong enough to validate the two groups as distinctive. Thus, other factors, mainly spatial, will have to verify a distinction.

Before the discussion of the spatial characteristics of each group, it is necessary to examine the annual fluctuation of the frequencies of each offender status group.

Annual Fluctuations of Offender Status Groups

It is uncertain if the three offender status groups are socially independent. However, an examination and comparison of the annual frequencies of each group conveys some very important and interesting information (Table 7.4).

The open rapes have their lowest frequency and proportion in 1971. From that year, even with a slight frequency decrease in 1973, the proportion remains somewhat steady until 1975. Thus, the oddity pertaining to the open rapes is the 215 percent increase in the frequency between 1971 and 1972.

The single incident offenders presents a quite different situation. Between 1971 and 1974, the frequency of single incident offenders remains fairly steady. The greatest frequency difference constitutes ten cases and percentage increase is only 22.2 percent (1973 to 1974). But Between 1974 and 1975, there is an increase of

Table 7.4--Offender Status: 1971-1975.

Year	Offender Status				# Series Offenders
	Open/Unknown	Single	Series	Total	
1971	13 (13.8)	36 (38.3)	45 (47.9)	94	10
1972	41 (39.0)	34 (32.4)	30 (28.6)	105	8
1973	33 (37.9)	36 (41.4)	18 (20.7)	87	5
1974	52 (39.7)	44 (33.6)	35 (26.7)	131	6
1975	62 (31.8)	90 (46.2)	43 (22.1)	195	10
Total	201	240	171	612	39

Source: Calculated by Author. Note: Chi Square = 36.53; $P \leq .000$; Contingency Coefficient = .237; () = percent of annual frequency.

46 cases or a 106.5 percent increase. Moreover, the single incident category for 1975 is higher in frequency than any other category for the whole time period of this study.

The series category, in its own right, is distinct from the others. In terms of frequencies, 1973 appears to be a pivotal year involving two cycles. Thus, 1971 is the apex of the first cycle and 1975 assumes the same role for the second cycle. Moreover, the number of series offenders appears to follow the same trend (Table 7.4).

Another oddity of the series offenses is that its highest frequency is in 1971 and not in 1975 like the open and single offender cases. Secondly, the annual proportion of the series offenses presents a peculiar trend. The year with the highest proportion of series rapes is 1971 (47.9 percent), but the proportion for the remaining years do not exhibit a great variance. Thus, the major concern is explaining why the series rapes are highest, in both frequency and proportion, in 1971 and why they are not the highest in 1975, like the open and single incident rapes.

In reviewing the annual exhibitions of the offender status groups, it is quite clear that the task of identifying these distinct offender status groups is incomplete. The rather radical change between 1974 and 1975 in the single incident group can perhaps be explained by the revised rape law in 1975. As previously discussed, 1975 experienced an increase in the less anonymous relationships and the alleged victim complicity methods of operation. The discussion of the overall composition of the single incident offender group concluded that this group does not have a majority bias towards one relationship or method of operation. Hence, the plausible explanation for the

astounding increase of the single incident rapes between 1974 and 1975 is the implementation of a revised rape law. This new law facilitated entry into the criminal justice system of the rapes involving more intimate relationships and alleged victim complicity methods of operation.

The frequencies and proportions of the open and series offender status groups are still begging for a credible explanation. The high frequency in 1975 of the open and single incident rapes and not the series offenses is curious. Moreover, the low frequency and proportion of the open rapes in 1971, accompanied with a high frequency and proportion of series incidents, is another curious situation. Compounding this apparent inexplicable situation is the low frequency of series rapes in 1973.

It is rather obvious this exposition of the annual frequencies and proportions of the offender status categories has not produced three unequivocally distinct groups. Therefore, it is mandatory to resort to more specific spatial and social measures.

Distance of the Crime Scene From the CBD

From a previous discussion, it was found that the mean distance of the crime scene from the CBD in 1975 was significantly different and longer than the previous years. Thus, the path of inquiry now focuses on the differences in the mean distance of the crime scene from the CBD by offender status groups within each year and among years.

The previous discussions on victim-offender relationships and methods of operation for each offender status failed to firmly define three separate groups. The mean distance of the crime scene from the CBD lends partial support to each group's individuality.

Table 7.5 depicts the mean distance of the crime scene from the CBD for each offender status group by year. With the exception of 1972, the remaining years all exhibit significant differences in mean distances for at least two offender status groups. Thus, to reiterate, if this study had concentrated on only one year, a different but perhaps only temporarily correct spatial and/or social generalization could have been formulated.

In 1971, there is a distinct difference in the mean distance of the series and open offenses with the former farthest from the CBD and the latter closest. But this relationship does not persevere. In 1973 and 1974, the series offenses are the most distant with the singles the closest to the CBD. Hence, the inference could have been made that single incident rapes occur closer to the CBD because of the diverse mixture of land uses, functions, and tenuous if not limited social networks (i.e., areas of extreme social anonymity). But the mean distances in 1975 repute the continued generalization. The same justification could be appropriate for the open offenses but a temporally constant and/or consistent relationship is not present. The only tangible spatial characteristic is that from 1973 to 1975, the series offenses appear to be the farthest from the CBD.

The assumption that the series offenses are the most distant from the CBD is substantiated by Table 7.6 which displays the annual variations for each offender status group. The open cases by year do not depict a strong significant difference. However, the single and series offenses depict significant yearly differences. Moreover, both classifications lend credence to the assumption that the year 1975 is a spatial anomaly.

Table 7.5--Annual Mean Distances of the Crime Scene from the CBD by Offender Status.

Dependent Variable Distance from CBD	Means of Offender Status Groups (miles)			F	F Prob.	Significant Pairwise Group Comparisons	
	Open	Single	Series			LSD P < .05	Scheffe P < .05
1971	5.02 (13)	3.2 (36)	2.5 (45)	2.37	.098	Series vs. Open	--
1972	2.93 (41)	4.04 (34)	3.72 (30)	1.298	.2773	--	--
1973	3.9 (33)	2.69 (36)	6.02 (18)	5.24	.0071	Single vs. Series	Single vs. Series
1974	3.71 (52)	3.39 (44)	4.95 (35)	2.302	.1041	Single vs. Series	--
1975	3.81 (62)	4.15 (90)	6.27 (43)	2.87	.058	Open vs. Series Single vs. Series	

Source: Calculated by Author Note: () - Frequency.

Table 7.6--Annual Distance Variations of Each Offender Status Group.

Dependent Variables	Annual Mean Distances (miles)				F	Significant Pairwise Group Comparisons		
	1971	1972	1973	1974	1975	F Prob.	LSD $P \leq .05$	Scheffe $P \leq .05$
Open	5.02 (13)	2.93 (41)	3.91 (33)	3.71 (52)	3.81 (62)	.9437	.4398	--
Single	3.25 (36)	4.04 (34)	2.69 (36)	3.39 (44)	4.15 (90)	1.299	.2708	1973 vs. 1975 --
Series	2.53 (45)	3.72 (30)	6.02 (18)	4.95 (35)	6.27 (43)	8.68	.0000	1971 vs. all 1971 vs. 1973- 1972 vs. 1971, 1975 1973, 1975

Source: Calculated by Author. Note: () = Frequency.

Again, the role of 1973 as a pivotal year is reaffirmed. In terms of the single incident offenders, 1973 is the closest to the CBD and the lowest. The subsequent years display an increase in the mean distances.

The series offenses show a radical increase in 1973 with a slight decrease in 1974 culminated with that category's greatest distance in 1975. The mean distance in 1974 was still higher than 1971 and 1972 and is partially verified in the past tests.

The observations and description of the victim-offender relationships and the methods of operation were inadequate to define three distinct offender status groups. A single spatial measure, such as the mean distance of the crime scene from the CBD, has partially differentiated three offender groups. The latent question, in reality, is whether the open cases are single or series cases only with distinctive spatial and/or social characteristics.

In the analyses of the mean distances of the crime scenes from the CBD, it was found that in the form of the five pertinent years of this study, the series represented one distance extreme or another. In 1971, the single events were more closely aligned to the series cases, but during 1973 through 1975, the single cases were more spatially akin to the open events. Thus, the conclusion reached is that a simple spatial measure does relay spatial distinctiveness among criminologically differentiated groups. The problem is that the distinctiveness is not consistent and the more prominent question is why the year 1975 experienced the greatest mean distance of the two offender status groups (single and series). The almost positive relationship of the distances of series rapes with time infers that

they are always the farthest rapes, while the greater distance and frequency of the single events in 1975 lends support to the impact of a revised rape law.

The mean distance of the crime scene from the CBD did relay spatial variation among the offender status groups. However, the results are not totally inconclusive. Hence, one must examine other more specific spatial and social measures.

The Journey to Crime

Essentially, the prosaic journey to crime statistic or the distance between the offender's residence and the crime scene has little utility in the testing of this hypothesis. Scholars, in the past, have researched the journey to crime issue with the goal of obtaining significant differences in the distances of particular crime types (e.g., property vs. personal crime).¹ Regardless of the derived inferences pertaining to variations in territoriality, activity space or degrees of professionalism, the journey to crime measure is useless for differentiating between offender status groups. All crimes can be studied with the same offender status typology used for rape.

Pyle's study of Akron asserted that a majority of the suspect movement information represented arrest as well as criminal behavior.² Thus, a bias exists in the crime population of only those cases with known and apprehended offenders. Therefore, the offender's journey to crime is an obvious spatial manifestation, but is totally irrelevant to the more intellectually challenging task of determining the social-spatial manifestations that distinguish between the open and unknown cases in general and among offender status groups in particular.

In spite of the limitations of the journey to crime statistic, Table 7.7 displays the annual mean distances for the single and series offenders. The locations of concern are the offender residences and the initial meeting place since the latter is the point of first contact with the victim. Moreover, the cases in all the journey to crime analyses involve only the victim-offender relationships of acquaintances, casual acquaintances, and strangers and addresses only those cases which define rape as a criminal social problem.

With the exception of the year 1973, it is obvious that the series offenders travel shorter distances than the single offenders. However, the significance of the differences can best be described as weak. The plausible explanation for the series measures is that each year has a small group of offenders responsible for repeated offenses. Hence, each offender uses his own individual method of operation which entails repeated travel of similar distances. The fluctuation of the single distances is inexplicable and perhaps random.

It was previously found that the predominant method of operation for each year was the illegal entry of residence. Moreover, this method is highly characteristic of the series rapes. By extracting all the rapes that involved an illegal entry of residence from each offender status group, the mean distances become less ambiguous (Table 7.8).

Less ambiguity simply translates into the descriptor that mean distances between the groups are identical. Of course, the now common exception is the year 1973 where the two distances are the maximum and minimum extremes of all the values. The impact on the mean distances

Table 7.7--Single and Series Offenders' Journey to the Initial Meeting Place.

Dependent Variables	$\bar{X}$ Distance (miles) of Offender Status Groups		F	F Prob.	Significant Pairwise Group Comparisons	
	Single	Series			LSD $P < .05$	Scheffe $P < .05$
Year						
1971	3.15 (20)	2.13 (45)	.6648	.4179	--	--
1972	2.29 (25)	.86 (29)	8.11	.0063	Series vs. Single	Series vs. Single
1973	1.38 (28)	5.23 (18)	5.61	.022	Single vs. Series	Single vs. Series
1974	2.35 (28)	1.06 (33)	3.52	.0654	--	--
1975	1.65 (59)	1.33 (38)	.3225	.5715	--	--

Source: Calculated by Author.

Note: () = Frequency.

with the extraction of the illegal entry rapes was an overall increase (compare Tables 7.7 and 7.8).

The overall mean distance increase for the single rapes is .16 mile but the series cases have a radical mean distance increase of 1.69 miles. Moreover, the number of single cases decreased from 160 to 133 (-16.8 percent) while the series cases plunged from 163 to 69 (-57.6 percent).

The implications are quite clear. The illegal entry rapes are endemic to the series cases while the single incidents are characterized by a diversity of methods. Hence, the extraction of the illegal entry cases creates a situation whereby the testing of significant distance differences is based on the methods of operation which are endemic to the single incidents. Yet, with the exception of one year, there is no significant difference in the mean distance traveled by offenders in both categories (Table 7.8). This conclusion is not only valid for the single incident methods, but for the illegal entry-series method as well.

In Table 7.9 the mean distance traveled by single and series suspects who use the illegal entry method shows no significant differences between the groups, except for one year, 1972. Also, the illegal entry entails a shorter distance than the composite of the other methods (compare Tables 7.8 and 7.9).

The plausible explanation for the overall significant differences between the offender status groups (Table 7.7) is the relative saturation of methods which are more characteristic of another offender status group. Thus, the rather extreme mean distance for the series group in 1973 is because only five of the series cases were

Table 7.8--Single and Series Offenders Journey to the Initial Meeting Place (All Non-Illegal Entry Rapes).

Dependent Variables	$\bar{X}$ Distance (miles) Offender Status Group		F	F Prob.	Significant Pairwise Group Comparisons	
	Single	Series			LSD $P < .05$	Scheffe $P < .05$
Year						
1971	3.20 (18)	3.80 (11)	.0791	.7806	--	--
1972	2.40 (20)	2.67 (14)	.0784	.7812	--	--
1973	1.37 (20)	7.30 (13)	7.1031	.0121	Single vs. Series	Single vs. Series
1974	2.93 (24)	3.56 (15)	.1869	.6680	--	--
1975	1.70 (51)	1.75 (16)	.0027	.9585	--	--

Source: Calculated by Author.

Note: () = Frequency.

Table 7.9--Single and Series Offender's Journey to the Initial Meeting Place (Illegal Entry MO Only).

Dependent Variable	$\bar{X}$ Distance (miles) Offender Status Group		F	Prob.	Significant Pairwise Group Comparisons	
	Single	Series			LSD $P \leq .05$	Scheffe $P \leq .05$
Year						
1971	2.77 (2)	1.77 (34)	.1007	.7529	--	--
1972	1.91 (5)	.30 (15)	25.34	.0001	Series vs. Single	Series vs. Single
1973	1.41 (8)	2.14 (5)	.1210	.7345	--	--
1974	.62 (4)	.38 (18)	.3646	.5527	--	--
1975	1.37 (8)	1.09 (22)	.1295	.7216	--	--

Source: Calculated by Author.

Note: () = Frequency.

illegal entries of 27.8 percent of the series cases, but in the other years, 50 to 75.6 percent of their series cases are illegal entries.

As previously stated, the journey to crime statistic is limited because it is useless for the unknown cases. The conclusion that when series and single offenders use similar methods, with no significant difference in the mean distances for four of the five years, it generates two conjectural issues pertaining to the open cases. First, the mean distances of the known cases form a base from which the unknown cases are extremes (shorter or longer). Secondly, the mean distances for the unknown offenders are the same and that other spatial-social factors explain the differences between the offender status groups.

Number of Scenes and Offender Status

In the annual comparisons of the mean number of scenes, it was found that the year 1975 was significantly different from the other years (Table 6.3). This year experienced a higher scene average (3.0) which implies greater movement in rape as a gross aggregate. This inquiry is whether the average number of scenes is a significant discriminator between the offender status groups.

Table 7.10 presents the annual mean number of scenes for each offender status group. The rapes used in this analysis are limited to the acquaintance, casual acquaintance, and stranger varieties. Thus, focusing on rape as the public problem and eliminating those relationships and methods which have a lower number of scenes. It is apparent that this social/criminological measure does a better job of discriminating between the groups.

Table 7.10--Annual Scene Averages by Offender Status.

Dependent Variable	$\bar{X}$ Scenes of Offender Status Groups			F	F Prob.	Significant Pairwise Group Comparisons	
	Open	Single	Series			LSD P < .05	Scheffe P < .05
Year							
1971	2.84 (13)	3.5 (22)	2.5 (45)	7.02	.002	Series vs. Single	Series vs. Single
1972	2.68 (41)	2.84 (26)	2.72 (29)	.265	.768	--	--
1973	2.90 (33)	2.96 (32)	3.22 (18)	.261	.540	--	--
1974	2.59 (52)	3.34 (32)	2.73 (34)	5.444	.006	Open vs. Single Series vs. Single	Open vs. Single
1975	2.90 (62)	3.44 (72)	2.42 (42)	16.851	.000	All Groups Different	All Groups Different

Source: Calculated by Author.

Note: () = Frequency.

During 1971, the series and single offenses were completely dissimilar with the single offenses inferring the most movement. The open cases, however, are not distinct from the other two. The diversity of methods in the single incidents and predominance of the illegal entry in the series explains the mobility difference between the two. The predominance of the stranger and perilous methods in the open events perhaps accounts for the middle indiscriminant average.

The utility of this measure is limited for 1972 and 1973 where each of the groups are not significantly different in their movement. An explanation for 1972 is not available, but this oddity in 1973 is not so inexplicable. The explanation for the high series average in 1973 (3.22) is related to the unusually high travel distances. Simply, the predominant illegal entry method (two scenes) was grossly under represented in the series offenses.

The utility of the scene measure is revived for 1974 and 1975. In 1974, the two post tests determined a significant difference between the open and single events while the more liberal measure (LSD) discerned a further difference between the series and single rapes. Therefore, unlike 1971, the open rapes were the least mobile.

The hypothesized relationship of each group's distinctiveness emerges in 1975. Each offender status group is completely distinct from each other. Hence, the most mobile rapes are the singles with the least mobility in the series offenses. One would assume that the more scenes or movement in a rape incident the more evidence or information gathered by the victim to relay to law enforcement officials. Thus, the lesser the number of scenes, the greater the potential for

an open case. In only three years (1972, 1973, 1974) did the open rapes have less scenes than the series. Moreover, there was not a significant difference between the two groups in any of those years. The implication is that perhaps the mean number of scenes is an inappropriate measure for rape mobility. Thus, a more optimal measure may be the direct spatial measure of distance.

Distance and Offender Status

Table 7.11 displays the distance or number of miles that the offender moved jointly with the victim for each offender status group for each year. This measure is the sum of the distance from the initial meeting place to the crime scene and from the latter location to the after scene.

As evidenced in Table 7.11, the distance measure was unable to distinguish three separate groups. But, the shorter distances were consumed by the open and the series events, while the single events, with its diversity of methods of operation, consumed the longer distances, with the exception of 1973. The inference is that offenders who move their victims the least have a higher probability of not becoming known or apprehended. This measure really only differentiated between the open and known cases. Therefore, other geographic measures must be able to be more optimally discriminant between the three groups.

Rape and Offender Status--A Spatial Description

The discussions of the previous social and spatial measures of the offender status groups have been unable to distinguish three

Table 7.11 -- Distance and Offender Status.

Dependent Variable	$\bar{X}$ Distance (miles) of Offender Status Groups			F Prob.	Significant Pairwise Group Comparisons	
	Open	Single	Series		LSD $P < .05$	Scheffe $P < .05$
Year						
1971	.84 (13)	1.79 (22)	1.07 (45)	4.36	.0160	Open vs. Single Series vs. Single
1972	.92 (41)	1.24 (26)	1.117 (29)	1.25	.2889	--
1973	1.24 (33)	1.65 (32)	2.14 (18)	1.25	.2895	--
1974	.80 (52)	1.52 (32)	1.049 (34)	2.96	.0558	Open vs. Single
1975	.92 (62)	1.47 (72)	.96 (42)	3.13	.0461	Open vs. Single

Source: Calculated by Author.

Note: () = Frequency.

separate groups. Perhaps, the only significant discriminators common to each group are the criteria defining them. Further investigation into the spatial characteristics of the groups may provide the support for group individuality.

Table 7.12 displays the annual frequencies of offender status groups within three areal units (see inset Figure 7.1). The purpose of this table is not actually to distinguish between the offender status groups, but to relay a rough notion of the geographic change of rape through time.

After examining Table 7.12, it is quite obvious that from 1971 through 1974, rape was primarily a Central San Diego problem (range of 84 to 96 percent of the total). During this time, there were some rapes occurring in the northern sector, but the proportion of the total never exceeded 15 percent (1971: 14.89 percent; 1973: 14.92 percent). The final year, 1975, presents quite a different picture.

The northern rape activity prior to 1975 appears to be almost random or geographically inconsequential when compared to the central sector. In 1975, a dramatic increase in the frequency and proportion of all offender status groups occurs. The central sector's proportion dropped to 57.47 percent with a total of 112 incidents, but the central proportion in 1974 was 90.09 percent with a frequency of 118 offenses. Thus, 1975 represents a drastic proportional decrease and a minute frequency decrease.

The northern sector, in 1975, is the most rapidly increasing with 72 incidents representing 36.91 percent of the total. The

Table 7.12--Areal Distributions of Offender Status Types: 1971-1975.

Area	Northern, Areas 1 and 2			Central, Area 3			Southern, Area 4			Total
	Open	Single	Series	Open	Single	Series	Open	Single	Series	
1971	2 (2.12) <u>15.38</u>	4 (4.25) <u>11.11</u>	8 (8.51) <u>17.77</u>	11 (11.7) <u>84.62</u>	32 (34.04) <u>88.8</u>	36 (38.2) <u>80.00</u>	-- -- --	-- -- --	1 (1.06) <u>2.22</u>	94
1972	2 (1.9) <u>4.87</u>	2 (1.9) <u>5.88</u>	-- -- --	39 (37.14) <u>95.12</u>	32 (30.47) <u>94.11</u>	30 (28.57) <u>100.00</u>	-- -- --	-- -- --	-- -- --	105
1973	3 (3.44) <u>9.09</u>	4 (4.59) <u>11.11</u>	6 (6.89) <u>33.33</u>	30 (34.48) <u>90.09</u>	32 (36.78) <u>88.88</u>	12 (13.79) <u>66.66</u>	-- -- --	-- -- --	-- -- --	87
1974	3 (2.29) <u>5.76</u>	5 (3.81) <u>11.36</u>	4 (3.05) <u>11.42</u>	48 (36.64) <u>92.3</u>	39 (29.77) <u>88.63</u>	31 (23.66) <u>88.57</u>	1 (.76) <u>1.92</u>	-- -- --	-- -- --	131
1975	15 (7.69) <u>24.19</u>	30 (15.38) <u>33.33</u>	27 (13.84) <u>62.79</u>	44 (22.56) <u>70.19</u>	54 (27.69) <u>60.00</u>	14 (7.17) <u>32.55</u>	3 (1.53) <u>4.83</u>	6 (3.07) <u>6.66</u>	2 (1.02) <u>4.65</u>	195

Source: Calculated by Author. Note: () = Percent of Annual Total; 16.00 = Percent of Annual Offender Status Group Total.

increases are profound in all offender status groups with the series rapes having a numerical and proportional predominance over the other areas.

In the central area during 1975, the open and series offenses decreased in both frequency and proportion. The oddity is the single offenses which from 1971 to 1974 appear almost constant. In 1975, the frequency increased 38.46 percent. With the exception of 1973, the single rapes are numerically predominant in Central San Diego during 1975. The speculation is that the revised 1975 rape law had an impact on the reporting of the single offenses in both the central and northern areas. Moreover, a similar justification may be proper for the northern open rapes. The series cases are more inexplicable at this time.

The southern area for the first four years was uneventful, but 1975 witnessed an increase in the rape frequency. The activity in this area has a definitive explanation. Nine of the eleven victims were illegal aliens who were assaulted after they crossed the American-Mexican border. Moreover, six of the eight identified suspects were also illegal aliens. Thus, the rape problem in this area is unique and deviant from the balance of San Diego's rape activity.

While the previous discussion has hopefully relayed the notion of geographic change in a general sense, maps depicting the census tract distribution of rape will relay notions of geographic change in a specific sense. Moreover, through the use of graduated circles and the proportional shading of each circle according to its concentration of the different offender status groups, will relay

more specific information. Thus, one will be able to determine the dispersion and concentration of rape in general and of the offender status groups in particular.

The following seven maps contain the central area for each year. Because of the need to avoid an information overload for the reader, the southern area will not be included and the northern areas only for the base years of this study, 1971 and 1975.

Central San Diego--1971

Figure 7.1 shows the geographic distribution of the rape offender status groups. It is quite obvious that the highest rape areas were concentrated toward the downtown or CBD area. Moreover, it appears that the higher rape areas are influenced by the series offenders. The open and single rapes do not appear to be as concentrated as the series offenses. In contrast to the CBD area, the other sections of the Central area have almost random rape distributions.

Northern San Diego--1971

Figure 7.2 shows the rapes in Northern San Diego for 1971. The rapes were largely situated in the Pacific Beach-Mission Bay Area. The highest rape area is totally the work of series offenders.

Central San Diego--1972

The obvious change in Central San Diego from 1971 is that the series offenses were less concentrated (compare Figures 7.1 and 7.3). Moreover, the highest rape areas moved from the CBD to the northwest in the Ocean Beach area. These two trends are the highest rape areas in which one is totally the work of series offenders. There are

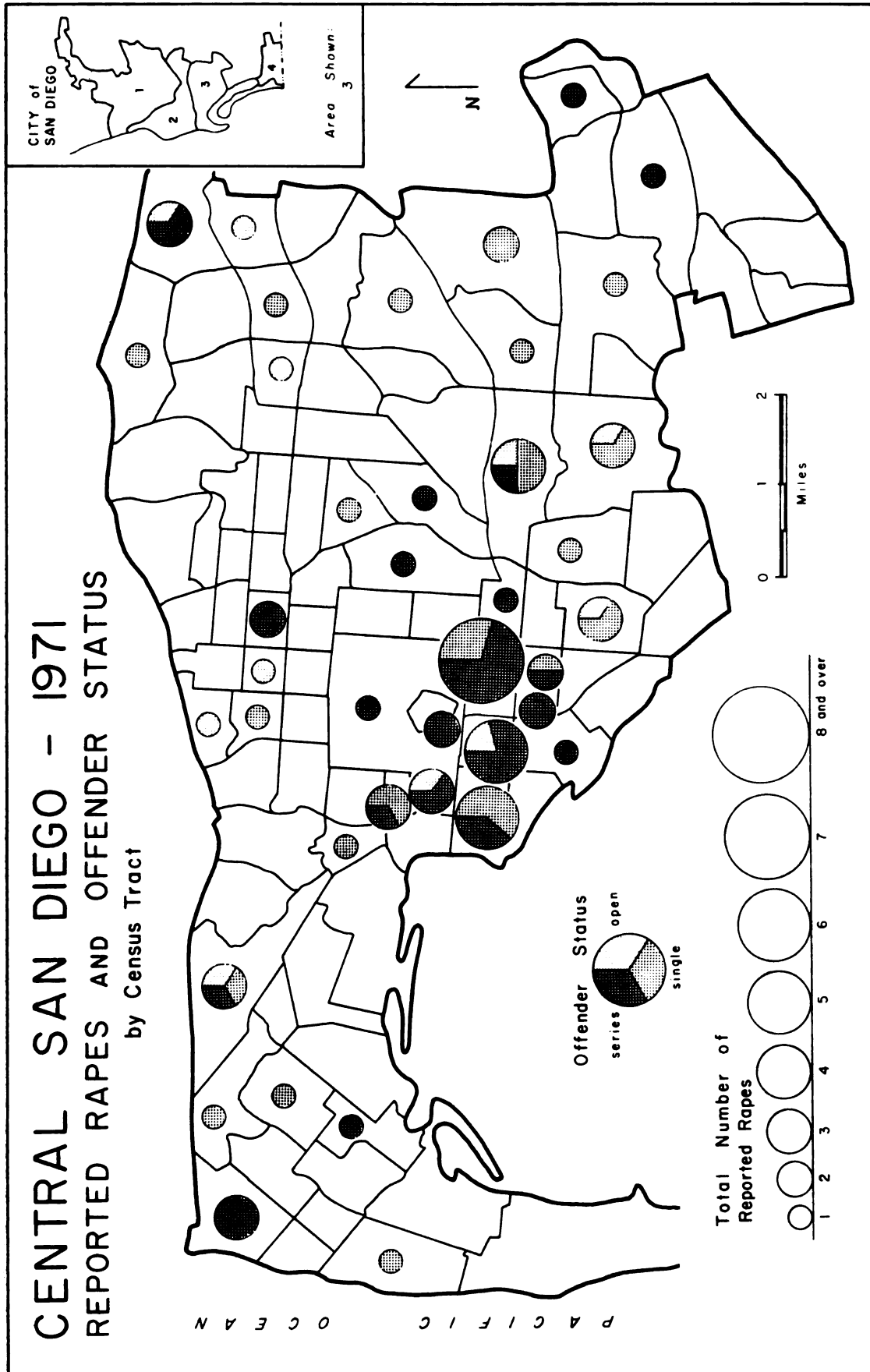


Figure 7.1

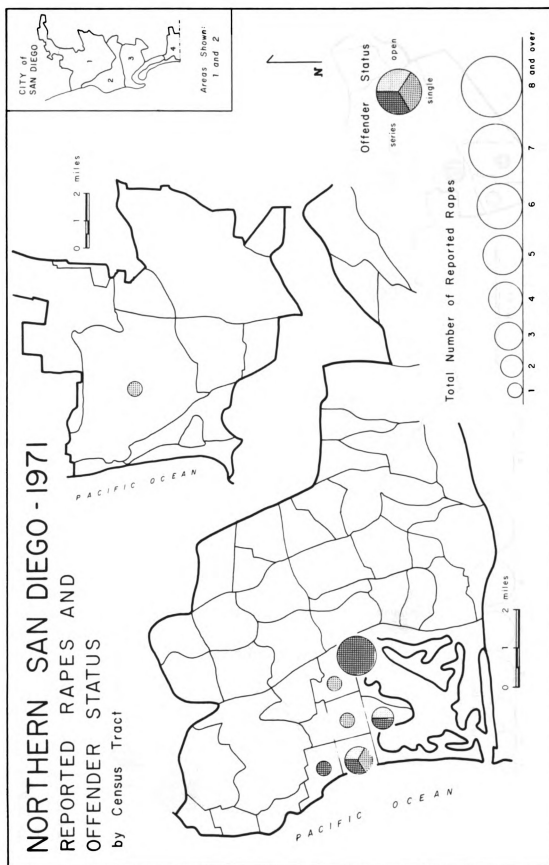


Figure 7.2

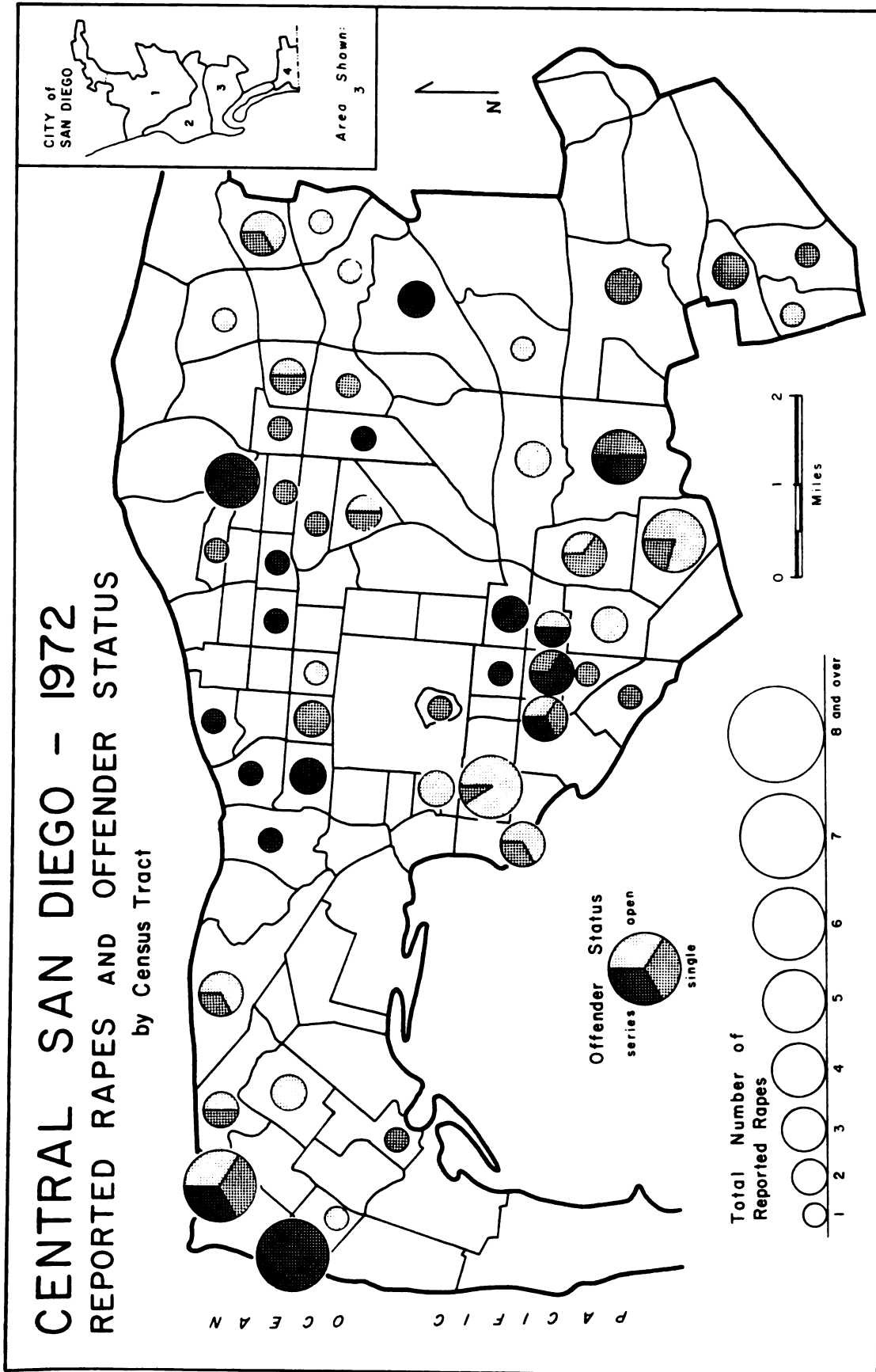


Figure 7.3

other tracts with two or more rapes which are totally or predominantly series.

The CBD tracts changed from predominantly series to open. Moreover, another change from 1971 is that southern and northern tracts of Central San Diego increased in their frequency and concentration.

Central San Diego--1973

Retaining its role as a pivotal year, 1973 presents an entirely different picture (Figure 7.4). The two highest rape areas were no longer areas of series offenders but areas classified as open. All areas showed a decrease in rape. Moreover, the series offenses were entirely in the northern and western portion of the central area. Unlike the previous year, only one tract had more than one series offense. Thus, the simultaneous occurrence of identical offender status types in the same tract were predominantly open and single.

Central San Diego--1974

This year presents another view of the geographic distribution of rape (Figure 7.5). Just as in 1972 (Figure 7.3), the highest rape tracts are in the Ocean Beach Area. Moreover, unlike 1973, the highest rape areas are again attributable to the series offenders.

In general, more tracts emerged to have at least one rape incident, especially in the north and south. The southern tracts appeared to have an increase in rape, mainly the open case. A high rape trace is in the center of the map in the large almost

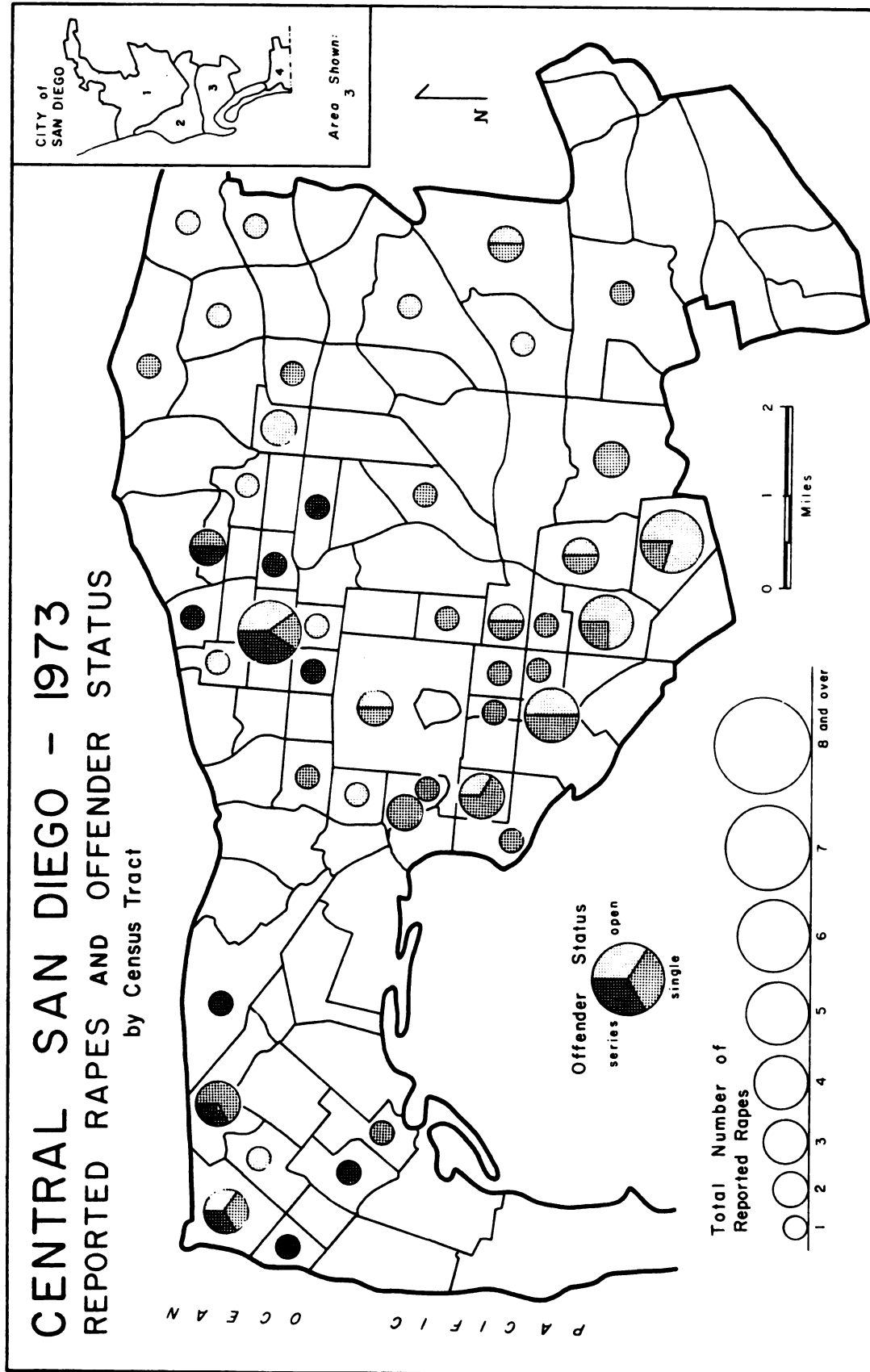


Figure 7.4

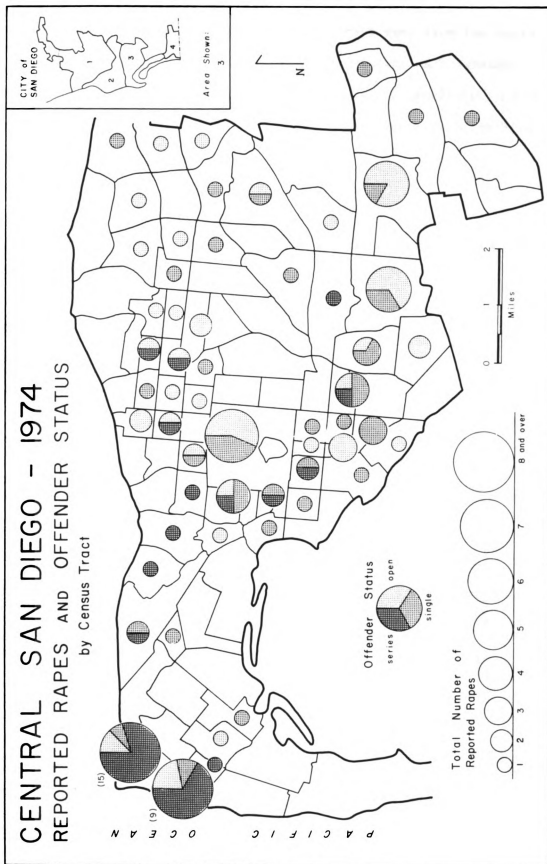


Figure 7.5

square tract known as Balboa Park. This tract went from two rapes in 1973 to seven in 1974. Thus, one may speculate as to whether this is a new emerging rape area since the tracts immediately south and contiguous compose the downtown. These tracts had a total of five rapes with the CBD only having one.

Central San Diego--1975

The speculation about Balboa Park becoming a high rape area is confirmed in 1975 (Figure 7.6). But, in terms of Balboa Park detracting from the CBD tracts, the speculation is false. For there was an abrupt increase in their frequencies of rape with the CBD showing a bias towards the single rapes. Other notable changes appeared in Central San Diego in 1975.

The two previously high rape tracts in Ocean Beach decreased in their frequency. Also, Southern San Diego, which previously had a mixture of offense types, is now predominantly single rapes. Moreover, more tracts in the north have increased in their frequency. The overall impression from this map is that the single rapes are the most prevalent. The open cases appear to be more scattered with an bias occurring in the CBD and north of Balboa Park. Overall, the highest and higher rape areas appear to be the responsibility of the single offenders. The series offenders have moved north.

Northern San Diego--1975

The movement of the series offenders to the north is accompanied by the movement of the highest rape area (Figure 7.7). Thus, a majority of the incidents in this area are attributable to the series offenders.

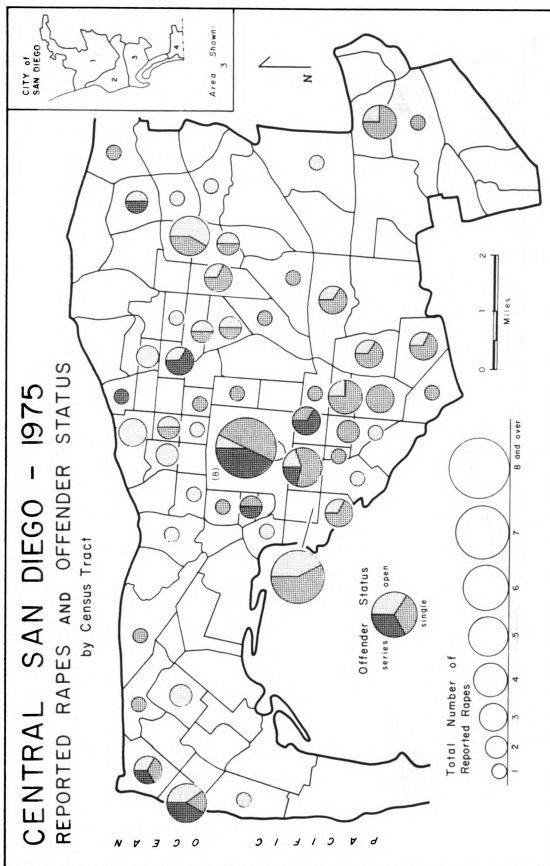


Figure 7.6

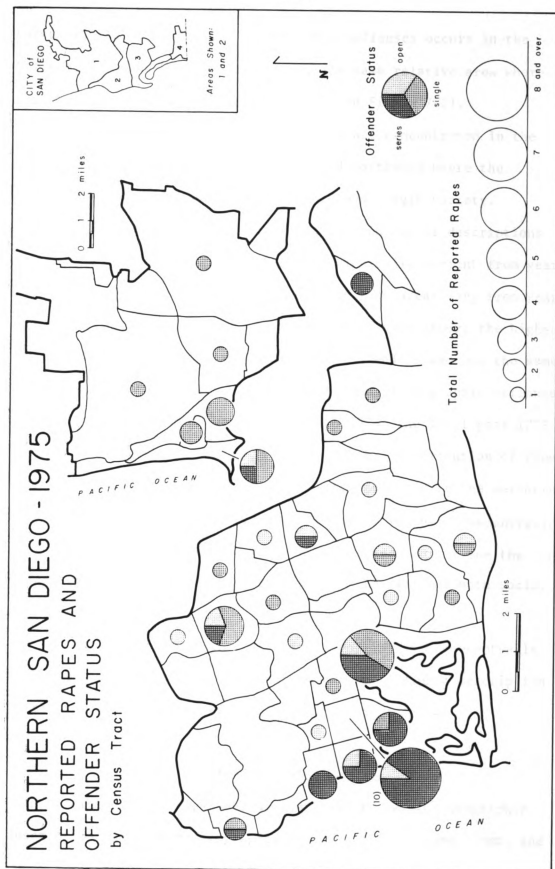


Figure 7.7

Moreover, the concentration of the series offenses occurs in the Pacific Beach and Mission Bay tracts, the same relative area where the northern offenses occurred in 1971 (see Figure 7.2).

Unlike 1971, all the offenses are not concentrated in the coastal area but have spread eastward and northward where the majority of the offenses are of the open and single variety.

What have these brief cartographic and verbal descriptions told us? First, rape in general is geographically variant from year to year. Second, specifically the highest rape areas vary from year to year. Third, in four out of five years of this study, the highest rape areas are attributable to the series offenders who use the same space repeatedly. Finally, even with the annual geographic variances and fluctuations in rape between 1971 and 1974, the final year 1975 experienced a profound change in the geographic distribution of rape with all offender status groups increasing radically in the northern area (Figure 7.7) and single raples increasing in their concentration in the central area (Figure 7.6). Thus, further support for the impact of a revised rape law has been generated in the form of both social and spatial evidence.

The next pursuit is to construct reliable and conceptually sound spatial measures to both enhance the cartographic description and assert the individuality of each offender status group.

The Shape, Area, and Density of the Offender Status Groups

Centrographic measures are employed to enhance geographic description and measure geographic concepts (i.e., shape, area, and

density). The first important measure that needs to be discussed is the mean center.

Figure 7.8 is a map of the mean centers of the crime scenes for each offender status group from 1971 through 1975. In addition, the CBD base point is plotted so one can ascertain the relative dispersion of the mean centers within and between years.

During 1971, the open cases had their mean center farthest from the base point, north of the large almost square tract known as Balboa Park. The series events are closer to the CBD, but the mean center actually represents a bimodal distribution. If you refer to Figures 7.1 and 7.2, it is apparent that the mean center is not within the large concentration of series offenses in the downtown area. The reason is that the small concentration of series offenses in the Pacific Beach-Mission Bay area pulls the mean center from the downtown concentration.

The center for the single events lies east northeast of the base point. During 1971, the mean centers for each offender status group were in different directions and distances from each other and the base point.

This situation does not hold true for 1972. The open cases changed in their direction and distances from the base point from 1971. Moreover, the open and single events are in close proximity in the same space. What is notable is that the single cases did not change greatly from 1971. The center for the series cases moved directly east from its 1971 position. Moreover, this center is the farthest from the CBD, but during this year, the series center is in a north easterly direction from the base point.

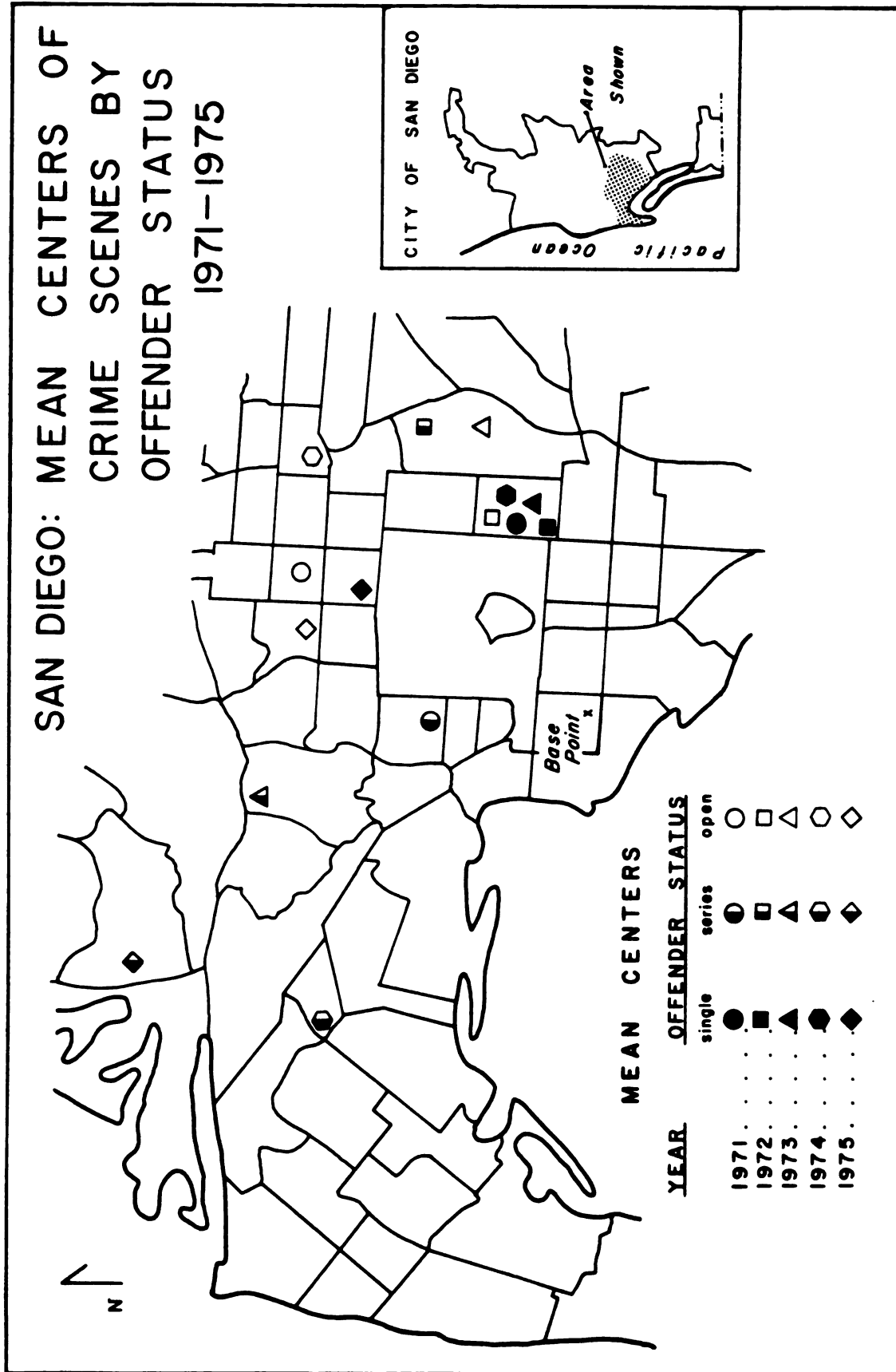


Figure 7.8

The pivotal year, 1973, presents a fairly different picture in the distribution of the mean centers. The single event centers remain in the relatively same space as the previous years. The open center moved east but for all practical purposes, its position is not radically different from the previous year. The series offenses show a radical change. This center is the most distinct in terms of distances and direction from the base point and the centers of the open and single rapes. This center represents a bimodal distribution which is the average coordinate composed between the series rapes which were committed north of Balboa Park and those few scattered cases which were committed in the Ocean Beach Area (see Figure 7.4).

The next year, 1974, present another quite different picture from the previous years. The single rape center remains relatively fixed to where it has been for the previous three years. The open offenses moved north and out of their previous two year position in close proximity with the single offenses. Complementing this aura of change are the series offenses. The series center moved west over the previous year. Hence, it is indicative of the high concentration of series offenses in the two tracts of the Ocean Beach Area (see Figure 7.5).

In 1975, the most radical change for the centers of each offender status group occurred. The center for the series offenses moved north from its 1974 position, out of Central San Diego and into Northern San Diego. This northern shift is accompanied by the open offenses which present the most northerly position over the previous years. The changes in the series and open cases are not so dramatic

when compared to the single cases. During 1975, the mean center for the single rapes spatially exploded northward from its almost spatially constant position for the previous four years.

In viewing the total distribution of the mean centers, the following generalizations can be made: (1) the series offenses for four out of the five years appear to be directionally distinct in terms of following a northwesterly path from the CBD base point; (2) the open events for three of the five years are almost due north of the base point; (3) the single rapes for four out of the five years appear to be spatially fixed, except in 1975 when a radical change occurred in the position of the mean center; and (4) in 1975, all the offender status groups experienced a northerly shift in their mean centers. The inference is that the revised rape law had an impact on the reporting of rape and especially with the single events.

This discussion of the mean centers has in point shown individuality for each offender status group. However, the direction and movements through time of the mean centers required further measures to complete the assertion of group individuality.

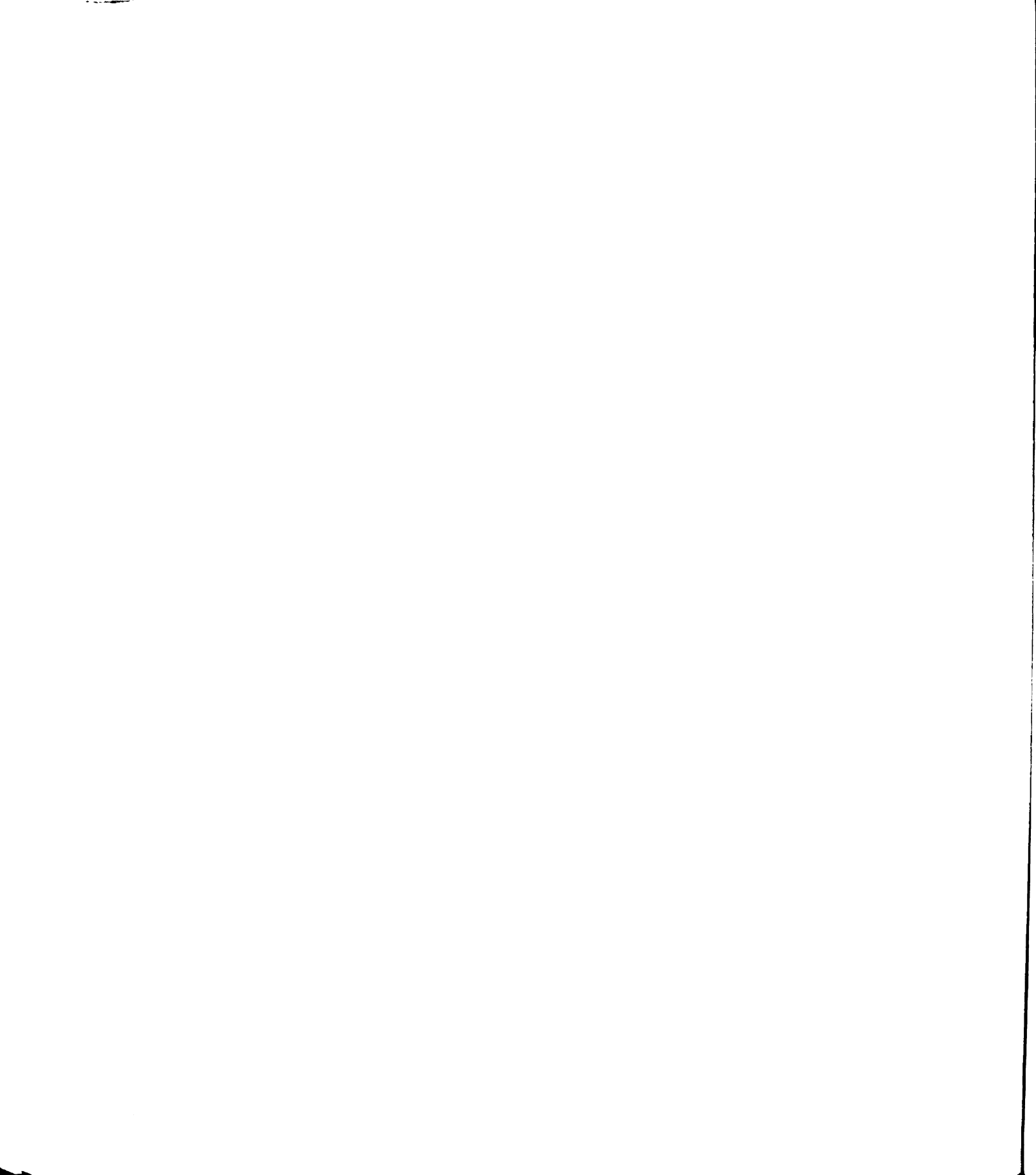
The movement and shifts of the mean centers are in themselves sufficient indicators of rape's variation through time. However, a more productive and informative thrust is to determine if the shape, area, and density of each offender status groups are constant through time.

Table 7.13 displays three measures of the standard deviational ellipse: (1) shape (coefficient of circularity); (2) area of the ellipse in square miles; and (3) density of rape incidents or number of

Table 7.13--Selected Centrographic Measures for Offender Status Groups: 1971-1975.

Year	Coefficient of Circularity			Area (Square miles)			Density		
	Open	Single	Series	Open	Single	Series	Open	Single	Series
1971	.462	.537	.410	17.52	12.85	16.06	.45 (12/8)	1.55 (30/20)	1.86 (45/30)
1972	.615	.479	.332	14.31	14.82	10.83	1.74 (38/25)	1.48 (33/22)	1.84 (30/20)
1973	.706	.709	.443	13.14	7.68	10.35	1.59 (31/21)	2.47 (29/19)	.86 (14/9)
1974	.712	.541	.315	12.01	11.29	7.16	2.74 (49/33)	2.30 (39/26)	2.92 (31/21)
1975	.624	.471	.458	15.80	40.72	27.86	2.34 (55/37)	1.42 (86/58)	1.04 (43/29)
Total $\bar{X}$	.623	.547	.391	14.55	17.47	14.45	.77	1.84	1.70

Source: Calculated by Author Note: (#/#) = Frequency used to calculate centrographic measure/
frequency theoretically contained within standard
deviational ellipse.



rapes per square mile. These measures are for each offender status for each year.

The shape or the coefficient of circularity, as mentioned in the methods of analysis section, is a measure of the out-of-roundness of the distribution. Hence, a perfect circle would have a coefficient of circularity of 1.00 while a zero value would represent a straight line.³ In Table 7.13, it is possible to determine a shape bias in the offender status groups.

The series offenses, consistently through the years, have the lowest coefficient of circularity values. The limited range of the circularity values (.315 to .458) implies an almost corridor shape of the distribution. Although the mean centers of the series offenses shifted from year to year, the shape of the distributions did not vary that greatly (Figure 7.8).

The coefficient of circularity for the single offense presents another situation. Constantly throughout the years, the circularity of the single incidents are rounder than the series events, but the range in circularity coefficients is much greater for the single incidents (.471 to .709). Therefore, among and within the years, the single events present a more circular distribution than the series events.

The open events provide another picture of circularity. Through the years, these events are more circular than the series offenses. After 1971, the disparities between coefficients are even greater. The open circularity compared with the single events shows a discrepancy for only three of the five years. In 1971, single distribution was more circular than the open. It is possible that the

low frequency of open incidents in 1971 may have had an effect on this situation. However, in 1973, the coefficients are fairly even.

The conclusion is that overall, each offender status group has its own individual shape or degree of circularity. The series events are more constricted in the circularity than the other groups, hence a corridor distribution. Even though the differences between the open and series events are not uniform throughout the five years, a conclusion that the open events are the most circular would have to be made.

A plausible explanation for the differences in coefficients of circularity lies with the numbers of offenders. In the series events, there is a limited number of subjects committing two or more incidents and the maps showing the annual rape activity clearly indicates that on the whole, series rapists tend to use the same space repeatedly. The single events are a one to one relationship between offenders and offenses. Therefore, the difference between the single and series events is the territoriality or activity space of the offenders. As for the open cases, a plausible explanation is not so available since it can be assumed that these cases are combinations of single and series events.

While the shape of the standard deviational ellipse shows some difference between the offender status groups, the area of the ellipse provides an indication of the amount of space that is consumed by the offender status groups. The ellipse areas for each group by year is presented in Table 7.13. At first glance, there does not appear to be any discernible pattern in terms of values and consistency

through the years. The most significant aspect is the change in the areas between 1974 and 1975.

For all practical purposes, the area of the open ellipse in 1975 is not too radically extreme from the previous years, but the areas of the single and series ellipses present a quite different situation. In the span of one year, both groups' areal dimensions increased in excess of two hundred percent. It is now very obvious that the revised rape law must have had an influence on the spatial expression of the single rapes. However, other factors need to be explored before a similar explanation can be afforded for the open and series cases.

A common property exists for the areas of the open and series ellipses between 1971 and 1974. They both experienced a decrease in size. In the next year, the open ellipse increased slightly while the series explodes spatially. The significance of the comparisons of areal dimensions will be revealed during the discussion of density.

Based on the assumption that sixty-eight percent of each group's crime scenes are contained within the area of their respective standard deviational ellipses, then one is able to determine the density of the crime scenes. Table 7.13 presents the densities for each offender status group by year.

The fact that series rapists work in a small geographic area repeatedly is verified in that the densities of the series rapists are greater than the other offender status groups for 1971, 1972, and 1974. Thus, an assumed situation occurs where more information about the rape is relayed to law enforcement officials because the series

offender patterns himself criminologically and spatially. However, this assertion is not valid for 1973 and 1975.

The explanation for 1973 has been provided previously in terms of the more mobile methods of operation which generates more transferrable and tangible information, but the explanation for 1975 is not readily available.

During 1975, the series rapes dispersed spatially to encompass Northern San Diego (Figure 7.7). The only significant previous incursions of series rapes had been in 1971 (Figure 7.2). However an unusual set of circumstances emerges when comparing and contrasting the series rapes for 1971 and 1975. Firstly, the frequencies of series events for both years are not too dissimilar (45 for 1971 and 43 for 1975). Secondly, both years had exactly ten offenders. Thirdly, the series events for both years had bipolar concentrations in the same relative areas. During 1971, the primary concentration was in the CBD with a secondary concentration in the Pacific Beach-Mission Bay area (Figure 7.1 and 7.2). The series events during 1975, were concentrated in the same relative areas but the magnitudes were opposite of 1971 (Figures 7.6 and 7.7). Fourthly, the standard ellipse for 1971 had the second highest area and density, but 1975 had the highest area and second lowest density. And finally, the average number of scenes for both years are practically identical (2.5 in 1971 and 2.42 in 1975). Also, the mean distances of victim and offender concurrent movement are not very different (1.07 miles in 1971 and .96 miles in 1975). The question is, why didn't the series events also experience their highest frequencies during this time?

The explanation for the geographic occurrence and repetition of the series offenses probably requires a more behavioral thrust emphasizing territoriality activity patterns and behavior settings.⁴ The explanation for the failure of the series offenses to experience their highest frequency of the total study period is probably the same for the increase of single offenses in 1975, the revised rape law.

It is assumed that the revised rape law had an impact on the reporting of rapes that especially involved the less anonymous relationships and alleged victim complicity methods. The low frequency of series offenses in 1973 can be attributed to the usage of the more mobile methods of operation but the series frequency in 1975 can be attributed to a difference in the composition of the victim-offender relationships.

Overall, the proportion of series events involving strangers is 88 percent. Between 1971 and 1974, the proportion ranged from 83.3 percent (1973) to 97.1 percent (1974). In 1975, only 76.7 percent of the series events involved strangers. The other relationships were one casual acquaintance, eight acquaintances, and one close or boy friend. The two most frequent series offenders (15 and 10 incidents) raped only strangers. The third highest (four cases) raped two strangers, one casual acquaintance, and one acquaintance. However, there were seven two incident's offenders. Six of them raped a stranger and acquaintance while the seventh raped an acquaintance and a former girl friend. The implication is quite clear that eight of the ten series offenders shorten their criminal careers by preying on the non-stranger victims. Hence, the revised rape law which

radically increased the reporting of single rapes may well be responsible for retarding the increase of reporting of series events from 1974 to 1975 (35 to 43 cases).

The revised rape law explains the frequency and composition of the single rapes. Moreover, the centographic measures for 1975 provides additional support for a situation of increased reporting. The influence of the law on the series offenses has been mentioned. In three years prior to 1975 (1971, 1972, and 1974), the high density of the series ellipses supports the notion of repeated use of the same geographic space. The nuances in 1973 have been explained.

The open events are still inexplicable. This group's emergence to the most highly dense and least affected areal dimension in 1975 infers a similarity to the series rapes of 1972 and 1974. Also, in those years, the densities of the open and series groups were not too dissimilar. It is possible that in some years, the open events are predominantly series while in others predominantly single. The major difference is that the product of the open events results in less tangible information for the police. This is indicative of the more anonymous relationships and the more perilous methods of operation.

Offender Status and Urban Ecological Structure

Previous researchers have conjectured and attempted to measure the ecological areas of rape occurrence, but no one has attempted to determine if there is a difference in the ecological areas of rape when differentiated by offender status. Hence, the quest is to ascertain ecological biases.

Only three of the five years of this study are used in this discussion (1971, 1974, and 1975), because 1972 and 1973 were deemed to be too incompatible with censal years and land use surveys.

Fifteen ecologic areas were discerned for 1971. Figure 7.9 is a map showing the distribution of the ecologic areas throughout the city of San Diego. Since the Black and Latino minority groups loaded highly on the same factor, areas described as ethnic minority are primarily Latino while racial minority refers to black occupance. Thus, the tracts comprising ecological groups with these labels are the result of cross checking the population proportions of Blacks and Latinos.

Table 7.14 portrays the ecologic associations of rape differentiated by offender status groups. The open events are too few to determine on an ecologic bias. The largest proportion (23.1 percent, three events) occurred in the ecological area composed of racial minority families (Area X).

The single events present a weak bias in the same racial minority areas with the second most prominent area being the late cycle-renters with a racial and land use mixture (Group IX). The third highest single rape area is composed of ethnic minority families (Group VII). These three types of ecologic areas account for 47.2 percent of the single incident rapes (17 cases). Besides these areas, the remaining do not appear to present a bias.

The series events present more of a stronger ecological bias than the others. The predominant ecologic area is the late cycle composed of renters with a racial and land use mix (Group IX). This

Legend

1971 San Diego Ecological Areas

Figure 7.9

- I White Upper Income
- II White Middle Income - Single and Multiple Family D.U.
- III Small Household - Renter - Older and 25-34 Age Group
- IV Renters - Youth and Older Population Mix
- V White Renters - 25-34 Age Group
- VI White - Middle Age - Family
- VII Large Area - Ethnic Minority Family
- VIII Transport & Manufacturing Land Use
- IX Late Cycle - Renter - Racial Mix - Land Use Mix
- X Racial Minority Family
- XI Racial Minority - Renter - Transport & Manufacturing Land Use
- XII CBD - Commercial - Male Space
- XIII Youth - Public Land (Universities)
- XIV Residual
- XV Military Reservations

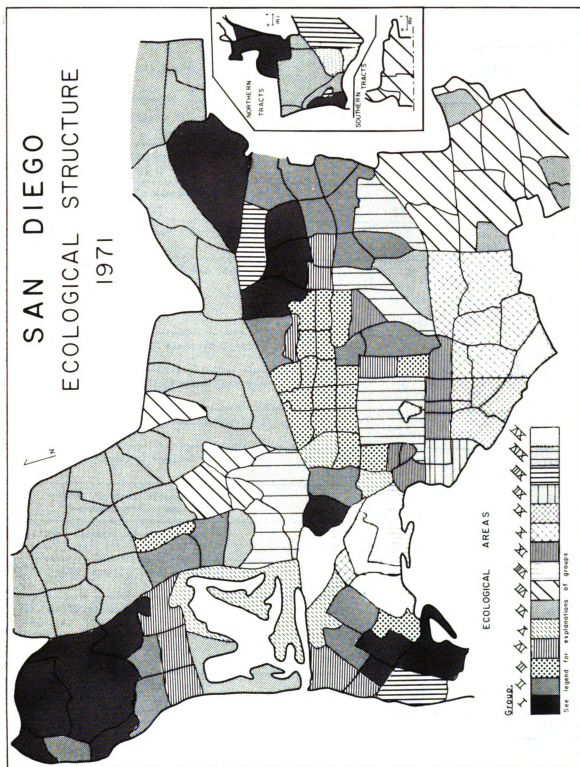


Figure 7.9

Table 7.14--Offender Status and Ecological Structure - 1971.

Ecological Areas	Offender Status Groups			
	Open	Single	Series	Total
I. White Upper Income	-- --	-- --	-- --	-- --
II. White Middle Income - Single and Multiple Family D.U.	2 (15.4)	2 (5.6)	4 (8.9)	8 (8.5)
III. Small Household-Renters-Older and 25-34 Age Group	2 (15.4)	2 (5.6)	3 (6.7)	7 (7.4)
IV. Renters - Youth and Older Population Mix	2 (15.4)	2 (5.6)	4 (8.9)	8 (8.5)
V. White Renters - 25-34 Age Group	-- --	2 (5.6)	5 (11.1)	7 (7.4)
VI. White-Middle Age-Family	1 (7.7)	1 (2.8)	2 (4.4)	4 (4.3)
VII. Large Area-Ethnic Minority Family	-- --	4 (11.1)	4 (8.9)	8 (8.5)
VIII. Transport & Manufacturing Land Use	-- --	-- --	-- --	-- --
IX. Late Cycle: Renter-Racial Mix-Land Use Mix	1 (7.7)	6 (16.7)	13 (28.9)	20 (21.3)
X. Racial Minority Family	3 (23.1)	7 (19.4)	1 (2.2)	11 (11.7)
XI. Racial Minority-Renter-Trans-and Manufacturing Land Use	-- --	1 (2.8)	4 (8.9)	5 (5.3)
XII. CBD-Commercial-Male Space	-- --	3 (8.3)	2 (4.4)	5 (5.3)
XIII. Youth: Public Land (Universities)	-- --	3 (8.3)	-- --	3 (3.2)
XIV. Residual Group	1 (7.77)	2 (5.6)	3 (6.7)	6 (6.4)
XV. Military Reservations	-- --	-- --	-- --	-- --
XVI. Elsewhere San Diego County	1 (7.7)	1 (2.8)	-- --	2 (2.12)
Total	13	36	45	94

Source: Calculated by Author. Chi Square = 33.19; $P < .1566$;
 Contingency Coefficient = .5108; () = Percent of Column Total
 Note: Expected Cell Frequency Less Than Five.

area represents the strong series events in central downtown San Diego while the series rapes in Northern San Diego occur in the ecologic area composed of white renters, primarily in the 25-34 age group (see Figures 7.1, 7.2 and 7.9). Seven of the ecological areas had a majority of their rape activity attributable to the series offenders.

It is quite apparent that the low frequencies do not present strong ecological biases. Pyle's Akron study concluded that the highest rape areas were examples of urban transition, racial transition, and instability.⁵ Perhaps a parallel situation has been found for 1971 in San Diego. The highest rape area (Group IX) consists of an older population (late cycle), renter, and a racial mix with a mixture of different land uses. Thus, the emphasis is on heterogeneity which can be a rough surrogate for transition. Moreover, the relative location of this ecological area is so close to the CBD that Commercial-Male Space (Group XII) would reinforce the notion of transition (Figure 7.9). Thus, rape has a minute discernible bias in the areas of instability.

Figure 7.10 is a map of the sixteen ecological areas discerned for 1974 and 1975. A comparison of the ecological associations of these two years with 1971 is not entirely possible since the factor structures differed and the number of ecologic areas discerned were not identical. But some comparisons are feasible.

The obvious difference from 1971 is that the series offenders limited their assaults to a few areas in 1974 (Table 7.15). In this year, only one ecological grouping had the majority of their rape incidents attributable to the series offenders, the Late-Cycle vs. Youthful Renters.

Legend

1975 San Diego Ecological Areas

Figure 7.10

- I White - Older Family - Upper Income
- II White - Middle Income Family
- III Ethnic Minority - Middle Age Family
- IV Small Household - Single and Multiple Family Dwelling Units
- V Late Cycle vs. Youth Renters
- VI White - Low Income - Renters - Small Household - Transport & Manufacturing Land Use Mix
- VII Late Cycle - Renters - Apartments - Transport & Manufacturing Land Use
- VIII Ethnic Minority - Young Family - Large Area
- IX White - Large Area - Young Family
- X Racial Minority Family
- XI Racial Minority - Renter - Transport & Manufacturing Land Use
- XII Youth - Public Lands (Universities)
- XIII CBD - Commercial - Male Space
- XIV Residual
- XV Transport - Manufacturing - Commercial
- XVI Military Reservations

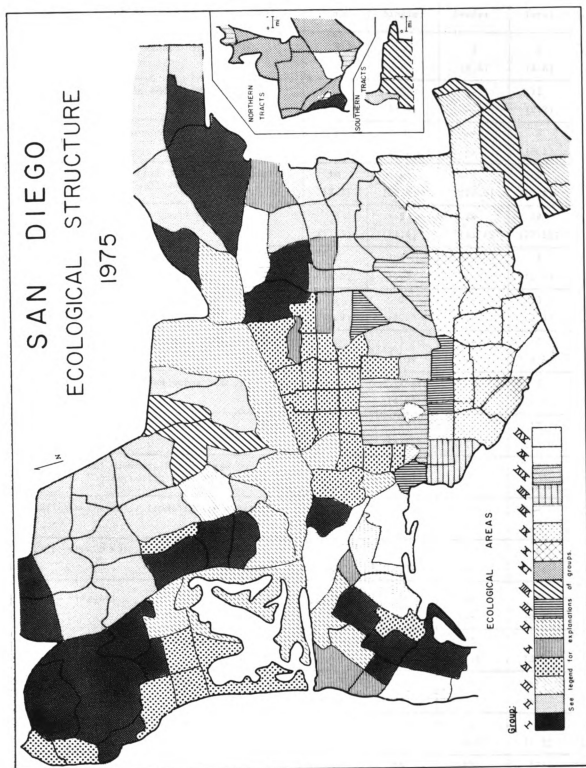


Figure 7.10

Table 7.15--Offender Status and Ecological Structure - 1974.

Social Space	Open	Single	Series	Total
I. White-Older Family-Upper Income	3 (5.8)	-- --	3 (8.6)	6 (4.6)
II. White-Middle Income Family	7 (13.5)	5 (11.4)	-- --	12 (9.2)
III. Ethnic Minority-Middle Age Family	6 (11.5)	2 (4.5)	-- --	8 (6.1)
IV. Small Household-Single and Multiple Family Dwellings	10 (19.2)	6 (13.6)	7 (20.0)	23 (17.6)
V. Late Cycle vs. Youth Renters	6 (11.5)	5 (11.4)	18 (51.4)	29 (22.11)
VI. White-Low Income Renters-Small Household-Transport & Manufacturing + Commercial L. U. Mix	2 (3.8)	1 (2.3)	-- --	3 (2.3)
VII. Late Cycle-Renters-Apts.-Transport & Manufacturing Land Use	1 (1.9)	2 (4.5)	-- --	3 (2.3)
VIII. Ethnic Minority-Young Family-Large Area	1 (1.9)	1 (2.3)	-- --	2 (1.5)
IX. White-Large Area-Young Family	-- --	2 (4.5)	-- --	2 (1.5)
X. Racial Minority Family	9 (17.3)	6 (13.6)	2 (5.7)	17 (13.0)
XI. Racial Minority-Renter-Transport & Manufacturing Land Use	3 (5.8)	4 (9.1)	-- --	7 (5.3)
XII. Youth-Public Lands (Universities)	-- --	-- --	-- --	-- --
XIII. CBD-Commercial-Male Space	-- --	1 (2.3)	-- --	1 (.8)
XIV. Residual	4 (7.7)	4 (9.1)	-- --	8 (6.1)
XV. Transport-Manufacturing-Commercial	-- --	4 (9.1)	3 (8.6)	7 (5.3)
XVI. Military Reservations	-- --	-- --	-- --	-- --
XVII. Elsewhere San Diego County	-- --	1 (2.3)	2 (5.7)	3 (2.3)
Total	52	44	35	131

Source: Calculated by Author Chi Square = 57.47; P < .0008;
 Contingency Coefficient = .55221; () = Percent of Column Total
 Note: Expected Cell Frequency Less Than Five.

Although this ecological grouping exists in two sections of San Diego, the important area for rape in 1974 was the coastal Ocean Beach area in west Central San Diego because of its high concentration of series offenses (Figure 7.5 and 7.10).

The characteristics of this area which make it conducive for rape is the dense housing. The population is bimodal in the sense that it is older family and youthful renters (15-24 years). A most decisive attribute of this area is its beach facilities which attract high volumes of non-residents, hence, an area of high anonymity with a distinctive youth culture.⁶

Not only is this area conducive to over half the series rapes but a rather meaningful proportion of the single and open rapes occur in this space. This situation of high occurrence of all three offender types is valid for the areas defined as being a mixture of single and multiple family dwelling units with a small population per household (Group IV). This is a rather ambiguous ecological area since the census tracts were not grouped on extreme scores so perhaps, this is a transition area which is on the whole a mean or average area.

The major factor to its high or significant rape commission is its diversity and especially the small population per household. This area has the highest proportion of open and single rapes and the second highest proportion of series rapes. This area combined with the previously discussed area accounts for 71.4 percent of the series rapes.

The only ecological parallelism from 1971 is the high proportion of open and single rapes in the ecological area defined as

Racial Minority-Family (Group X). It is the persistence of this area in the two time periods which lends support to the biased victimization of the disadvantaged.

Thus, in 1974, three ecological groupings accounted for over 52 percent of all the rapes (48 percent of the open; 38 percent of the single; and 7.7 percent of the series). In reality, these areas represent extremes: small household occupancy, the old versus the young, and the racial minority. With the exception of the racial minority family area, the other two appear to represent a situation of where one offender status group is of an extreme proportion, the others will also be of significant proportions (ten percent or more). However, another area experienced significant proportions of the open and single events, the white middle income family (Group II, Table 7.15). This development leads one to inquire if this type of space is fulfilling the role of a newly emerging high rape area.

Table 7.16 displays the ecological associations of the offender status groups during 1975. Further support for the impact of the revised rape law is formed when reviewing the ecological distributions for 1975. The most obvious impression relayed is that the single incident rapes dispersed to encompass all ecologic areas. Moreover, the open and series rapes increased their areal occurrences over 1974.

The series rapes are similar to 1974 in the sense that over half of the incidents were concentrated in a single ecological area and also that only one ecological grouping had a strong majority of its rape problem attributable to series offenders (Tables 7.15 and 7.16).

Table 7.16--Offender Status and Ecological Structure - 1975.

Social Space	Open	Single	Series	Total
I. White-Older Family-Upper Income	6 (9.7)	2 (2.2)	3 (6.9)	11 (5.7)
II. White-Middle Income Family	11 (17.7)	13 (14.4)	3 (6.9)	27 (13.9)
III. Ethnic Minority-Middle Age Family	3 (4.8)	4 (4.4)	-- --	7 (3.6)
IV. Small Household-Single and Multiple Family Dwellings	14 (22.6)	7 (7.8)	23 (53.4)	44 (22.7)
V. Late Cycle vs. Youth Renters	7 (11.3)	5 (5.6)	3 (6.9)	15 (7.7)
VI. White Low Income Renters-Small Household-Transport & Manufacturing + Commercial Land Use	2 (3.2)	8 (8.9)	3 (6.9)	13 (6.7)
VII. Late Cycle-Renters-Apts.-Transport & Manufacturing Land Use	2 (3.2)	2 (2.2)	2 (4.6)	6 (3.1)
VIII. Ethnic Minority-Young Family-Large Area	4 (6.5)	6 (6.7)	2 (4.6)	12 (6.2)
IX. White-Large Area-Young Family	-- --	6 (6.7)	-- --	6 (3.1)
X. Racial Minority Family	4 (6.5)	13 (14.4)	-- --	17 (8.8)
XI. Racial Minority-Renter-Transport & Manufacturing Land Use	2 (3.2)	3 (3.3)	-- --	5 (2.6)
XII. Youth-Public Lands (Universities)	1 (1.6)	2 (2.2)	-- --	3 (1.5)
XIII. CBD-Commercial-Male Space	4 (6.5)	6 (6.7)	-- --	10 (5.2)
XIV. Residual	1 (1.6)	5 (5.6)	2 (4.6)	8 (4.1)
XV. Transport-Manufacturing-Commercial	1 (1.6)	4 (4.4)	1 (2.3)	6 (3.1)
XVI. Military reservations	-- --	2 (2.2)	-- --	2 (1.0)
XVII. Elsewhere San Diego County	-- --	2 (2.2)	1 (2.3)	5 (2.6)
Total	62	90	43	195

Source: Calculated by Author Chi-Square = 66.29; P < .0008;
 Contingency Coefficient = .50466; () = Percent of Column Total
 Note: Expected Cell Frequency Less Than Five.

But there are significant changes between the years. First, during 1975, there is not a strong secondary area of series events as opposed to 1974 where twenty percent were committed in the small household areas (Group IV). Therefore, in 1975, the balance of the series ranees distributed themselves throughout other ecological areas with no strong biases. Secondly, the strongly predominant series area in 1975 (Group IV): Small Household) was the secondary series area in 1974. Finally, the predominant series area is not accompanied with proportions (ten percent or more) of both the other offender status groups. The major dropout of the high proportion trio is the single incident group.

The open incidents emit some notions of ecological change between 1974 and 1975 (Table 7.15 and 7.16). The small household (IV) areas are constant in their high proportions of open rapes (19.2 percent in 1974 and 22.6 percent in 1975). Another notable constant open occurrence area is the Late Cycle vs. Youth Renters (V - eleven percent both years). This area, during 1975, did not have its high proportion of open rapes accompanied with the strong occurrence of series rapes as was the situation during 1974.

The areas experiencing a notable decrease in open rapes are the Ethnic Minority-Middle Age Family (III) and the Racial Minority Family (X). In one year's time, both areas declined in the frequency and proportions of open rapes (Tables 7.15 and 7.16). The ecological grouping that experienced a numerical and proportional increase was the White Middle Income Family (II - Tables 7.15 and 7.16). Thus, partially validating the speculation of a new emerging rape area. But, reinforcing this speculation is the single rape activity.

During 1975, the White Middle Income Family (II) area doubled its frequency and increased its proportion of single rapes (Tables 7.15 and 7.16). Many ecological groupings experienced an increase in single incident rapes during 1975. However, the important issue is the areas that retained their single rape predominance from 1974.

During 1974, four ecological areas had proportions of single rapes exceeding ten percent: (1) White Middle Income Family (II); (2) Small Household (IV); (3) Late Cycle vs. Youth Renters (V); and (4) Racial Minority Family (X). During 1975, only the first and last ecological areas retained their single rape predominance. An explanation for this phenomenon is lacking. The increased reporting of rape incidents which were previously under-reported because of the rape law and the criminal justice system which reacts to the law did not allow the victim to enter the system totally as a victim which may explain an increase in the white middle income family. However, an explanation for the racial minority family increase is not readily available.

The series rapes in 1975 showed a strong bias towards the Small Household with a mixture of single and multiple family housing units. In the preceding year, this area was of secondary importance and was exceeded by the Late Cycle vs. Youth Renters (V) group. Although the composition of criteria defining those areas may differ, there is one important variable not included in the analysis of variables. Simply, both areas are oriented towards the beach and aquatic recreation areas (see Figure 7.5 and 7.7). Thus, both areas have a high dwelling unit density plus a mixture of older residents

and the young. Moreover, this water orientation attracts large volumes of outsiders to use this amenity. Perhaps, the difference between the two areas lies in their relative saturation of the variables composing the factors leading to their separate groupings.

Thus, one could allege that amenity plus the external usage of this space coupled with the diversity of dwelling units and extreme population age groups generates an environment of fluctuation, change, opportunity, and anonymity which provides a favorable behavior setting for both the series and open (unknown) rapists.

The ecological associations of the single rapes in 1975 are too diverse to formulate a definitive explanation as to their occurrence. The oddity of the numerical and proportional predominance in the white middle income family and racial minority family areas has been stated and shall remain inexplicable.

The open/unknown rapes appear to have tri-modal ecological associations: (1) they are predominant in areas where the series rapes are predominant; (2) they are predominant in areas where there is also a bias in the single rapes; and (3) they are ecologically distributed in a random or infrequent manner. This rather diverse patterning is probably because the open rapes are a composite of the single and series rapes.

Forgetting the offender status groups, rape as an aggregate displays interesting shifts in the predominant ecological areas of occurrence. During 1971, one-third of all the rapes were concentrated in two areas: (1) Late Cycle: Renter-Racial Mix-Land Use Mix (IX); and (2) Racial Minority Family (X - Table 7.14). The first area was

inflated by the series rapes while the latter was inflated by the single rapes.

During 1974, the high rape areas changed somewhat with three accounting for over fifty percent of the rapes. The Small Household (IV) had its rape activity influenced primarily by the open events. The Late Cycle vs. Youth Renters (V) had over half of its activity attributable to the series offenders while the Racial Minority Family (X) had over half of its rapes in the open category (Table 7.15). Thus, three high rape areas (over ten percent of the total) were each inflated by a specific offender status type.

During 1975, only two areas were over ten percent of all the rapes. The highest area, Small Household (IV), was inflated by the series offenses, but also had the highest proportion of open offenses (Table 7.16). The second highest area is the White Middle Income Family (II). Its rape problem was primarily single, but its proportion of open offenses is notable and important. The third highest area was the Racial Minority Family (X), but during this year, the frequency was identical to 1974 (17 cases). However, this area's proportion of all the rapes dropped from thirteen percent to under nine percent. It is significant that this area, which was a high rape area in 1971 and 1974, began a proportional decline in 1975.

This discussion has shown the ecological diversity of rape. As an aggregate, the primary occurrence area shifts from year to year. The final two years witnessed the ecological shifting of primary rape areas coupled with the continued use of the White Middle Income Family and the proportional decline of the Racial Minority area.

Rape differentiated into offender status groups presents a more confusing pattern. The series rapes are the only group which limits their attacks to restricted or few ecological areas. The single events are more ecologically diverse and after 1975 the diversity increased. The open rapes are less diverse in their ecological occurrences than the singles. It would be erroneous to conclude that these two categories are ecologically distinctive. For in reality, the observations are too few or there are too many ecological units. Or perhaps, the ecological diversity of the open and single rapes is a hard and true reality. Therefore, one could assume that previous studies on the ecological associations of rape were in reality biased by the series offenses, because it was shown that the highest rape areas had a majority of their offenses attributable to the series offenders.

Summary

This last hypothesis asserted that significant social and spatial differences emerge when rape is differentiated by offender status or criminal career groups. Socially or criminologically, the groups are distinctive. This relates directly to their composition of relationships and methods of operation (Tables 7.1 to 7.3). The open rapes are almost exclusively stranger and incorporate the most perilous methods. The single rapes are more diverse encompassing all relationships and methods. The series rapes appear similar to the open rapes except for the minute difference in the proportion of stranger cases and more intimate relationships, but the quest for unequivocal individuality had to explore other factors.

The annual frequencies of the offender status groups did not yield group individuality until 1975 (Table 7.4). The measurement of the crime scenes from the CBD in four out of the five years showed significant differences between only two groups and after 1972, the series offenses were the most distant from the CBD (Table 7.5).

The journey to crime measure was explored for the single and series rapes. Only two years had significant differences in distances (Table 7.7). When the travel distances were examined by controlling characteristic methods of operation for each group, only one year produced a significant difference and the remaining four years had extremely weak almost non-descript distance differences (Tables 7.8 and 7.9). The inferences which extended to the open/unknown distances were two in number: (1) the travel distances were not different from the single and series, thus, other factors had to explain the differences in offender status or (2) the single and series distances form a base from which the open/unknown distances were an extreme.

The quest for localizing group individuality was revived by using a social/criminological measure (i.e., mean number of scenes). This measure, which is a surrogate for movement, was a valid discriminator for two groups during 1971 and 1974. The inference was that the series event involved less movement of the victim than the single event. In 1974, the open and series were alike but were completely distinct from the single events (Table 7.10). During 1975, all groups were distinct. Thus, it appeared that this was the measure that may provide individuality. Hence, a spatial measure was utilized, the total distance traveled by the victim and offender jointly (Table

7.11). Three years produced significant differences between two groups. The open offenders moved their victims the least distance as opposed to the single offenders. The inference derived was the less distance the offender moves the victim the less information the victim obtains to report to law enforcement officials. However, in some years, the distances of the series rapes were similar to the distances of the single rapes and in other years, the distances were similar to the open rapes. Thus, it was apparent the victim-offender joint travel was not a significant discriminator for this group.

Census tract maps showing the frequency of rapes and the proportions of the offender status events in each tract were reviewed. It was found that the series offenders for four out of the five years tended to repeat their offenses in the same tract. Moreover, the highest rape tracts were attributable to the series offenders.

The revised rape law of 1975 resulted in the spread of rape to northern San Diego (Figure 7.7). Also, the single rapes appeared to increase and intensify in Central San Diego (Figure 7.6).

Centrographic measures were employed to determine differences in the shape, area, and density of the crime locations for each offender status group. The main centers for each offender group for each year were plotted. It was found that for four out of the five years, the series centers appeared distinct from the other centers by moving in a west and northerly direction. The open rapes appeared distinct for three out of the five years lying almost due north of the CBD base point. The single centers, for the first four years, were in the relatively same space, but after 1975, this center moved

radically northward. It appeared that each group had their own shape bias with the series offenders having a more corridor coefficient of circularity and at the other extreme was the open offenses whose circularity approached normal or a full circle.

The proposed explanation stemmed from the number of offenders. Hence, the series offenders made repeated trips to the same area. The single offenders did not make repeated trips, but just one trip. The difference is in the activity space of the offenders. Thus, the open rapes may be a combination of single and series offenders, thus yielding a more circular shape (Table 7.13).

The area of the standard deviational ellipse was presented for each offender status group for each year. The purpose was to measure the spatial magnitude of each group. From 1971 to 1974, the areas of the groups did not appear to differ that greatly. But after 1975, areas for the single and series ellipses more than doubled, while the open area increased less than four miles. The new rape law was alleged to be the reason for radical magnitude changes for single and series groups (Table 7.13).

The density of the standard ellipse for each offender status group was calculated. For three out of the five years (1971, 1972, and 1974), the series group had the highest density. Thus, empirical evidence was formulated to support the literary assertion of repeated attacks in a small geographic area.

The low series density, during 1973 (.86 rapes/square mile), was explained by the fact that the series offenders used the more mobile methods of operation. Thus, they produced scattered locations

and also produced the lowest frequency of series rapes for the study. The inference is that the more the offender moves the victim the greater the probability of tangible information for the victim to report to law enforcement officials.

The reason for the low series density during 1975 is the same for the low single density and larger area. The revised rape law influenced an increase in reporting which increased the spatial domain of rape. Just as in 1973, when the series rapes were fewer because the offenders adopted the more mobile methods, the series rapes in 1975 did not radically increase because the offenders departed from predominantly stranger victims and preyed on more intimate relationships.

It is assumed that the open rapes, regardless of their densities and areas, are simply events which do not leave the victim with much tangible information.

The final attempt to discern group individuality was launched by comparing the offender status groups and their ecological associations for the years 1971, 1974, and 1975. This failed to separate the three groups. It was found that the highest rape areas are attributable to series offenders, but biases in the open and single rapes were too tenuous to assert.

It was found that the series offenders tend to restrict their assaults to fewer ecological areas as opposed to the single events which were more extensive. During 1974, the open and series offender status groups were responsible for the rape inflation of a specific ecological grouping, but these occurrences are too weak to generalize (Table 7.15).

The offender status groups are socially and spatially distinct. The single is one while the series and open events combine to form the second group. The distinctiveness of the single group is its diversity of relationships, methods of operations, victim-offender movements, and ecological diversity.

The distinctiveness of the open rapes are its anonymity, perilous methods, and minimal movement. The series are similar to the open rapes except for the spatial repetition of assaults. Hence, an ecological bias regardless of the forementioned assertions, the null hypothesis will have to be accepted.

Notes to Chapter VII

¹For a survey of the journey to crime statistics see Gerald Pyle et al., The Spatial Dynamics of Crime, 1974, pp. 142-176.

²Ibid., p. 149.

³Lee, "Analysis and Description of Residential Segregation," 1966, p. 35.

⁴J. Douglas Porteous, Environment and Behavior: Planning and Everyday Urban Life, 1977, pp. 19-30, 93-99, and 208-211.

⁵Pyle, et al., Spatial Dynamics of Crime, 1974, pp. 64-65.

⁶See Frederick P. Stutz, "Communities of the City of San Diego in San Diego: An Introduction to the Region, Phillip R. Pryde, ed. (Dubuque, Iowa: Kendall/Hunt Publishing Company, 1976), p. 204.

CHAPTER VIII

CONCLUSIONS

The four hypotheses tested in this research represent variations in the type, source, and volume of antecedent information which were utilized in the construction of each hypothesis. Hence, the output information from the hypothesis tests has diverse utility.

The first hypothesis which tested the relationship of the spatial order of rape with indices of the spatial variation of the family life cycle and land use structure represents the status quo or the obvious procedure for conducting crime geographic research. However, the incongruence of the variable distributions on the factors relayed the first message that something had changed or was amiss. Potential technical and methodological errors were dismissed by the fact that the regressions for 1974 and 1975, which used the same independent variables, produced different results to the extent that some independent variables changed their relative strengths in explaining and degree or direction of association with the dependent variable (Table 4.2).

An important by-product of the testing of this hypothesis is that the pattern of rape can change from year to year. This brings up the question of the utility of other crime studies which concentrated

on only one year. In this study, aggregate areal data analysis has had considerable utility in showing a different spatial order of rape with the spatial variation of urban family life cycle and land use structure during the passage of one year.

The second hypothesis, pertaining to the differential distance between the participants' residences based on age disparity, involves a more specific aspect of rape. The purpose of this hypothesis was to determine that the concept of family life cycle was inherent in the age interactions of the victims and offenders. There were significant differences in the age disparity distances for only two years (Table 5.2), 1971 and 1974). Thus, the null hypothesis was accepted because the distance-age disparities were not consistent from year to year. The antecedent research assertions of the 15-29 age group as the primary victimization group was verified. Moreover, evidence was presented that the median age of the offender tended to be higher than the victim (Table 5.1).

The third hypothesis is much like the second. The difference is that race-ethnic membership was substituted for age disparity. Only two years showed a significant difference between racial-ethnic interaction and residential distances (Table 5.5, 1972 and 1974). The results in these two years is what was expected; the distance between non-white offenders and white victims' residences was greater than between white offenders and white victims. But still, the distances were not consistently different from year to year. Thus, the null hypothesis was again accepted. There were some important aspatial by-products. First, the proportion of inter-racial rapes (34.6 to 52.6 percent) challenges Amir's finding that rape is primarily

intraracial (93.2 percent).¹ Secondly, by viewing the race-ethnic membership of the victim and offenders through time, significant changes were discerned. One change was that the white majority population increased in its frequency and proportion of victims. The black minority showed a proportional decline in the victim and offender population while the latino minority showed a slight increase in its frequency of victims and a larger numerical and proportional increase in its offender population. Perhaps, the illegal alien problem on the San Diego-Mexican border accounts for the latino increases. The frequency and proportional increases of white victims and offenders during 1975 probably has its explanation in the impact of the revised 1975 rape law which may also explain the proportional decrease of the black offenders (Table 5.4).

The fourth and final hypothesis approaches the more critical and pertinent issues of rape. Moreover, the formulation of this hypothesis was dependent upon information from a variety of academic and non-academic sources.

Analysis of the data revealed that the offender status groups were different. The difference is not only by the criterion of group definition but also because of type and quantity of tangible information the victim can report to the police and the information they can retrieve from the crime scene and from possible witnesses. The important facets about the information are the dimensions and processes that generate it.

The open offender on the social-dimension is overwhelmingly the stranger. Criminologically, he uses the more perilous methods of operation and spatially, he moves his victim the least and commits his

events throughout the urban ecological structure. Thus, anonymity, peril, low mobility, and diversity of areas are his social-spatial characteristics.

The single offender on the social dimension is more diverse. Criminologically, he employs the less perilous methods. Spatially he entails more movement of the victim. His acts are committed throughout the ecological structure. Thus, the characteristics of this offender group are combinations of more non-stranger relationships, less perilous methods, and more spatial movement of the victim. The diversity of ecological areas is not an asset or liability because the previous factors are the ones which generate the information about the single rapists.

The series rapist is on the average like the open rapists in three respects: he is (1) predominantly a stranger; (2) employs the more perilous methods of operation; and (3) moves his victim less than the single rapist. But, the dimensions that abort his criminal career are: he (1) is not always a stranger to his victim (1975); (2) sometimes moves his victim more than the single and open rapists (1973); and (3) uses the same geographic space repeatedly or simply patterns himself in the urban ecological structure.

Disregarding the social-criminological dimension and speaking only in geographic terms: (1) the open rapist exercises minimal spatial movement of his victim but commits his assault in a variety of spaces; (2) the single rapist employs the ecological variety of the open rapist but employs more spatial movement of his victim; and (3) the series rapist, on the whole, patterns himself in the same space. Even though this hypothesis has to be rejected, based on the

longitudinal requirements in which the hypothesis was couched, more research is needed in this area. The results would probably have been different had either of the two occurred: (a) the hypothesis was restricted to one year; or (b) the hypothesis was tested for more than five years.

Intervening Variables

It is quite obvious that the fifth hypothesis of this research should have been that the revised 1975 California rape law had a significant impact on the social and spatial composition of rape. During 1975, there was an increase in the non-stranger relationships followed by an increase in the more alleged victim complicity methods of operation which accounts for more scenes in the crime and the spatial explosion of rape incidents to encompass the previously and relatively docile Northern San Diego.

The revised rape law is the only tangible intervening variable in this study which has been the alleged explanation for the social-spatial composition of rape during 1975. But it is curious why the mid-year of this study, 1973, had the lowest frequency of rape cases (87). A valid speculation for the low occurrence in 1973 may pertain to the public awareness of rape. Possibly we can assume that 1971 was the year where rape started to become a controversial issue manifest in the forms of increased media coverage ranging from the factual to the sensational coupled with the emergence and increase of feminist groups who are largely responsible for rape becoming a highly emotional, controversial, and publicized issue. Therefore, starting in 1971, there was a continuous growth of rape information which increased the public's awareness of the crime. Thus, by 1973,

the public had received an abundance of rape information. Hence, the possible situation was that many females became aware of the disadvantages of reporting a rape (e.g., past sexual experience revealed) that they were reluctant to report it.

The reporting situation started to change in 1974 when the California Legislature began the proceedings on revising the rape laws. This culminated in the form of a revised law which went into effect on January 1, 1975. Although this is a highly speculative proposition, it may serve as a foundation for future research.

The year to year instability of the rape data may be caused by other factors besides a revised rape law and increased information diffusion which may impede incident reporting. Policy and operational changes in the police department may have a significant impact on the volume and characteristics of reported rapes. Likewise, the activities of rape crisis centers may also have an influence on reporting. The policies of both organizations were not addressed in this research. However, such a path of inquiry would be most appropriate for future research. The only potential policy inference resulting from this research, is that revised rape laws may well have a significant and immediate impact on the spatial-social composition of reported rapes.

The social-spatial components of rape disclosed in this study have produced many questions or hypotheses for future research. The production of these questions and hypotheses are due in part to the data employed. The source of rape data for this study came directly from the original case complaints, and police files, and not the overly generalized statistics which simply list undifferentiated rape by areal units.

The first recommendation for future study is to utilize the traffic zones or census blocks instead of census tracts. Such areal units would provide more incisive socio-economic and land use associations with the spatial order of rape.

This change in scale would permit intensive studies of the micro-geography of particular crime site types (i.e., single family dwelling-multiple family dwelling). This procedure would hold true for the micro-spatial interaction of initial meeting places, crime scenes, and after scenes.

Assuming a larger data base, one could construct hypotheses pertaining to the spatial patterns of specific methods of operation, victim offender relationship, and most importantly the offender status. Another potential avenue is to examine the diurnal variation of specific rape types. Since the victims' account of the incident represents a larger sample, more studies should isolate solely on the victim and search for differences in activity spaces, social class, and age. Any of the forementioned hypotheses or objectives should only be pursued one at a time for as is evident from this research, rape is a very complex phenomenon.

The second recommendation is that law enforcement agencies should reorganize their rape data which are available for public examination. If annual rape summaries were categorized by offender status, victim-offender relationship, method of operation, and qualified cartographically in geographic space, then the public would know how much of the rape problem is a public problem. Moreover, by qualifying the rape problem by geographic space relays to the public that rape is

not ubiquitous. Thus, the fear of rape can possibly be reduced in certain areas.

The third recommendation is that the academic criminal justicians should start to utilize the spatial perspective. This perspective actually defines the magnitude of a rape or any crime problem. Conversely, the geographer interested in crime research should start utilizing the perspectives in criminal justice and understand the operational and policy issues in different law enforcement settings. The purpose is to realize that problems in the so-called "real world" have multiple perspectives for their causation and control.² The important message relayed from this research is that rape is not static, spatially or socially. When more geographers depart from studying crime aggregates or types and start with the crime specifics, they will undoubtedly have to incorporate the perspectives of other disciplines. Regardless of the hypotheses in this research, it was proven that rape has its significant spatial and social characteristics. Hence, adequate crime research in the future has to incorporate both perspectives. Obviously, one important problem is that rape is such a highly emotional issue that trying to find adequate scientific explanation is difficult.

Notes to Chapter VIII

¹Amir, Patterns in Forcible Rape (1971), pp. 44-45.

²See D. T. Herbert, "Social Deviance in the City: A Spatial Perspective," in Spatial Perspectives on Problems and Policies, eds. by D. T. Herbert and R. J. Johnston (New York: John Wiley & Sons, 1976), p. 119.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Abler, Ronald; Adams, John S.; and Gould, Peter. Spatial Organization: The Geographer's View of the World. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1971.
- Agopian, Michael; Chappell, Duncan; and Geis, Gilbert. "Inter-racial Forcible Rape in a North American City." In Victimology, edited by Israel Drapkin and Emiliano Viano, pp. 93-102. Lexington, Mass.: Lexington Books, 1974.
- Amir, Menachem. Patterns In Forcible Rape. Chicago: University of Chicago Press, 1971.
- Arkin, Herbert and Colton, Raymond R. Statistical Methods. 5th ed. New York: Barnes & Noble Books, 1970.
- Berry, Brian J. L. "The Logic and Limit of Comparative Factorial Ecology." Economic Geography 47 (1971): 209-219.
- Blalock, Hubert M., Jr. Social Statistics. 2nd ed. New York: McGraw-Hill Book Company, 1972.
- Boggs, Sarah Lee. "The Ecology of Crime Occurrence in St. Louis: A Reconceptualization of Crime Rates and Patterns." Ph.D. dissertation, Washington University, 1964.
- Brodyaga, Lisa; Gates, Margaret; Singer, Susan; Tucker, Marna; and White, Richardson. Rape and Its Victims: A Report for Citizens, Health Facilities and Criminal Justice Agencies. Washington, D.C.: National Institute of Law Enforcement and Criminal Justice, 1975.
- Brown, Brenda A. "Crime Against Women Alone: Systems Analysis of MPD Sex Crime Squad's 1973 Rape Investigations." Mimeographed. Memphis, Tenn.: Memphis Police Department, 1974.
- Buck, George A. Police Crime Analysis Unit Handbook. Washington, D.C.: National Institute of Law Enforcement and Criminal Justice, 1973.

- Bureau of the Census. Census of Population and Housing: 1970 Census Tracts Final Report PHC(1)-188. San Diego, California SMSA. Washington, D.C.: U.S. Government Printing Office, 1970.
- Carter, Ronald L. and Hill, Kim Quaile. "The Criminal's Image of the City and Urban Crime Patterns." Social Science Quarterly 57 (December 1976): 595-602.
- Chappell, Duncan; Geis, Gilbert; Schafer, Stephen; and Siegel, Larry. "Forcible Rape: A Comparative Study of Offenses Known to Police in Boston and Los Angeles." In Studies in the Sociology of Sex, edited by James M. Henslin, pp. 169-170. New York: Appleton-Century-Crofts, 1971.
- _____. ; Schram, Donna; Ulberg, Cy; Albi, Frank; Fogarty, Faith; Forrest, Linda; and Trafford, Claudine. Forcible Rape: A National Survey of the Responses by Police. Police Volume 1. Washington, D.C.: National Institute of Law Enforcement and Criminal Justice, 1977.
- Cliff, Andrew D.; Haggett, Peter; Ord, J. Keith; Bassett, Keith A.; and Davies, Richard B. Elements of Spatial Structure: A Quantitative Approach. Cambridge, England: Cambridge University Press, 1975.
- Cottell, Louis C. "Rape: The Ultimate Invasion of Privacy." FBI Law Enforcement Bulletin, May 1974: 2-6.
- Coulson, Michael R. C. "The Distribution of Population Age Structures in Kansas City." Annals of the Association of American Geographers 58 (1968): 155-176.
- Curtis, Lynn. "Rape, Race and Culture: Some Speculations in Search of a Theory." In Sexual Assault. The Victim and the Rapist, edited by Marcia Walker and Stanley L. Brodsky, pp. 117-134. Lexington, Mass.: D. C. Heath and Company, 1976.
- Draper, Norman and Smith, Harry. Applied Regression Analysis. New York: John Wiley & Sons, Inc., 1966.
- Erlanson, Otto A. "The Scene of Sex Offenses." Journal of Criminal Law and Criminology 31 (1946): 339-342.
- Everitt, John C. "Community and Propinquity in a City." Annals of the Association of American Geographers 66 (1976): 104-116.
- _____. "Liberation or Restriction? The Job as an Influence on Urban Environmental Perception and Behavior." Antipode: A Radical Journal of Geography 6 (July 1974): 20-25.
- Federal Bureau of Investigation. Crime in the United States 1975: Uniform Crime Reports. Washington, D.C.: U.S. Government Printing Office, 1976.

- Goldstein, Herman. Policing a Free Society. Cambridge, Mass.: Ballenger Publishing Company, 1977.
- Hach, Schuyler W.; Cornier, William H.; and Bounds, William G. Jr. Reading Statistics and Research. New York: Harper & Row Publishers, 1974.
- Harries, Keith D. "The Geography of American Crime." The Journal of Geography (April 1971), 204-213.
- Harvey, David. Explanation in Geography. London: Edward Arnold Publisher LTD., 1969.
- Hayford, Alison M. "The Geography of Women: An Historical Introduction." Antipode: The Journal of Radical Geography 6 (July 1974): 1-19.
- Heiges, Harvey. "The Economic Base of San Diego County." In San Diego: An Introduction to the Region, edited by Phillip R. Pryde, pp. 137-148. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1976.
- Herbert, David. "Social Deviance in the City: A Spatial Perspective." In Social Areas in Cities Volume 2: Spatial Perspectives on Problems and Policies, edited by D. T. Herbert and R. J. Johnston, pp. 103-119. London: John Wiley & Sons, 1976.
- Herbert, David. Urban Geography: A Social Perspective. New York: Praeger Publishers, 1973.
- Horgan, John J. Criminal Investigation. New York: McGraw-Hill Book Company, 1974.
- Hulquist, John; Holmes, John; and Brown, Lawrence A. Centro: A Program for Centographic Measures. Discussion Paper No. 21. Ohio State University: Department of Geography, 1971.
- King, Leslie J. Statistical Analysis in Geography. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1969.
- Lee, Douglas B. Analysis and Description of Residential Segregation. Ithaca, N.Y.: Cornell University Center for Housing and Environmental Studies, 1969.
- Lesney, Katherine M. Lieutenant: Women's and Children's Service Section. Detroit Police Department, Interview September 16, 1975.
- Lowe, John C. and Moryodas, S. The Geography of Movement. Boston, Mass.: Houghton Mifflin Company, 1976.

- Macdonald, John. Rape Offenders and Their Victims. Springfield, Ill.: Charles C. Thomas Publishers, 1971.
- Morrill, Richard L. and Wohlenberg, Ernest H. The Geography of Poverty in the United States. New York: McGraw-Hill Book Company, 1971.
- _____. "The Negro Ghetto: Problems and Alternatives." The Geographical Review 55 (1965): 339-361.
- Murdie, Robert A. "The Social Geography of the City: Theoretical and Empirical Background." In Internal Structure of the City: Readings on Space and Environment, edited by Larry S. Bourne, pp. 279-290. New York: Oxford University Press, 1971.
- Nelson, Steven and Amir, Menachem. "The Hitchhike Victim of Rape: A Research Report." In Victimology: A New Focus, Volume 5, edited by Israel Drapkin and Emiliano Viano, pp. 47-64. Lexington, Mass.: D.C. Heath and Company, 1973.
- Neter, John and Wasserman, William. Applied Linear Statistical Models. Homewood, Ill.: Richard D. Irwin, Inc., 1974.
- O'Hara, Charles E. Fundamentals of Criminal Investigation. 2nd ed. Springfield, Ill.: Charles C. Thomas Publishers, 1971.
- Olson, Lynn and Stiers, Janice. Rape. Washington, D.C.: National League of Cities, 1974.
- Pantoleoni, C. A., and Bigler, James C. California Criminal Law and Guide for Policeman. Englewood Cliffs, N.J.: Prentice-Hall Inc., 1969.
- Pattison, William D. "The Four Traditions of Geography." In Geographical Research and Writing, edited by Robert W. Durrenberger, pp. 85-95. New York: Thomas Y. Crowell Company, 1971.
- Phillips, Phillip D. "Risk-Related Crime Rates and Crime Patterns." Proceedings of the Association of American Geographers 5 (1973): 221-224.
- Porteous, J. Douglas. Environment & Behavior. Reading, Mass.: Addison-Wesley Publishing Company, 1977.
- Pryde, Phillip R. "Introduction." In San Diego: An Introduction to the Region, edited by Phillip R. Pryde, pp. 1-10. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1976.
- Pyle, Gerald F.; Hanten, Edward W.; Williams, Patricia Garstang; Pearson, Allen L.; Doyle, J. Gary; and Kwofie, Kwame. The Spatial Dynamics of Crime. Chicago: University of Chicago, Department of Geography Research Paper No. 159, 1974.

- Robinson, Arthur and Sale, Randall D. Elements of Cartography. 3rd ed. New York: John Wiley & Sons Inc., 1969.
- Robinson, Boyd. Robinson Street Map of San Diego County. 5th ed. Torrance, Calif.: Robinson Rating Service, 1975.
- Rose, Harold M. The Black Ghetto: A Spatial Behavioral Perspective. New York: McGraw-Hill Book Company, 1971.
- _____. "The Development of an Urban Subsystem: The Case of the Negro Ghetto." Annals of the Association of American Geographers 60 (1970): 1-17.
- Rossi, Peter H. Why Families Move. Glencoe, Ill.: Free Press, 1971.
- Salins, Peter D. "Household Location Patterns in American Metropolitan Areas." Economic Geography 47 (1971): 234-248.
- San Diego City Planning Department: Data Services. "A Brief Statistical Analysis of San Diego's People and Housing as Identified by the 1975 Special Census." Mimeographed. San Diego, California, October 28, 1975.
- San Diego County Comprehensive Planning Organization. "1971 Land Use Survey." Mimeographed. San Diego, California, April 1972.
- _____. "1975 Land Use Survey." Mimeographed. San Diego, California, April 1976.
- Schilder, Charles. Lieutenant: Commander-Homicide and Sex Crimes Unit. San Diego Police Department. Interview: March 18, 1976.
- Selkin, James. "Rape." Psychology Today (January 1975), pp. 70-74.
- Schmid, Calvin F. "Urban Crime Areas, II." American Sociological Review 25 (October 1960): 655-678.
- Shaw, C. R. and McKay, H. D. Delinquency Area. Chicago: University of Chicago Press, 1929.
- Shevky, Esherf and Bell, Wendell. Social Area Analysis. Stanford, Calif.: Stanford University Press, 1955.
- Simmons, James W. "Changing Residence in the City: A Review of Intra-urban Mobility." Geographical Review 58 (1968): 622-651.
- Sööt, Siim. Methods and Measures of Centrography: A Critical Survey of Geographic Applications. Paper Number 8. The University of Illinois at Urbana-Champaign: Occasional Publication of the Department of Geography, 1975.
- State of California. California Penal Codes. Sacramento, Calif.: 1975.

- Stephenson, Larry K. "Spatial Dispersion of Intra-Urban Juvenile Delinquency." The Journal of Geography 73 (March 1974): 20-26.
- Stofle, Herman. "Rape Reduction Program." Mimeographed. Columbus, Ohio: Columbus Police Department, January 1974.
- Stutz, Frederick P. "Adjustment and Mobility of Elderly Poor Amid Downtown Renewal." Geographical Review 56 (1976): 391-400.
- _____. "Communities of the City of San Diego." In San Diego: An Introduction to the Region, edited by Phillip R. Pryde, pp. 187-206. Dubuque, Iowa: Kendall/Hunt Publishing Company, 1976.
- _____. and Hinshaw, Philip L. San Diego CBD: A Walking Tour. San Diego, Calif.: Geography Department, San Diego State University, 1974.
- Thomas, Edwin. "Maps of Residuals from Regression." In Spatial Analysis: A Reader in Statistical Geography, edited by Brian J. L. Berry and Duane F. Marble, pp. 326-352. Englewood Cliffs, N.J.: Prentice-Hall Inc., 1968.
- Timms, D. W. G. The Urban Mosaic: Towards a Theory of Residential Differentiation. London: Cambridge University Press, 1971.
- Truscott, Lucian K. "Rape: The Liberals' Law and Order Issue." Qui: For the Man of the World, February 1976, pp. 44-46 & 105-108.
- Von Hentig, Hans. "The Sex Ratio." Social Forces 30 (1951): 443-449.
- Ward, J. H. "Hierarchical Grouping to Optimize an Objective Function." Journal American Statistical Association 58 (1963): 236-244.
- Weis, Kurt and Borges, Sandra S. "Victimology and Rape: The Case of the Legitimate Victim." Issues in Criminology 8 (1973): 71-115.
- Weston, Paul B. and Wells, Kenneth M. Criminal Investigation: Basic Perspectives. Englewood Cliffs, N.J.: Prentice-Hall Inc., 1970.
- White, Clyde R. "The Relation of Felonies to Environmental Factors in Indianapolis." Social Forces 10 (1932): 408-513.
- Women's and Children's Service Section. "Rape a Brief Profile." Mimeographed. Detroit, Mich.: Detroit Police Department, 1974.

Yeates, Maurice. An Introduction to Quantitative Analysis in Human Geography. New York: McGraw-Hill Book Company, 1974.

Yuill, Robert S. "The Standard Deviation Ellipse; an Updated Tool for Spatial Description." Geografiska Annaler 53B (1971): 28-39.

APPENDICES

APPENDIX A

SAN DIEGO POLICE DEPARTMENT FORMS

VICTIM INDEMNIFICATION NOTICE REQUIRED: YES ☐ NO ☐
SAN DIEGO POLICE DEPARTMENT CRIME REPORT

CASE NO

(LEAVE ANY SPACE NOT APPLICABLE TO SPECIFIC CRIME BLANK)										
TYPE OF CRIME (ONE OFFENSE ONLY)										
DATE AND TIME REPORTED			FIRM NAME, IF COMMERCIAL CRIME				LOCATION OF OCCURRENCE (OR ADDRESS)			
			OCCURRENCE DAYLIGHTY ☐ DARKNESS ☐ UNKNOWN ☐		TYPE OF LOCATION					
MONTH	DATE	YEAR	DAY OF WK	TIME						
VICTIM'S NAME			RESIDENCE ADDRESS				RESIDENCE PHONE	BUSINESS PHONE	EXT.	
VICTIM'S OCCUPATION, BUSINESS NAME, AND ADDRESS						VICTIM ADVISED TO CONTACT DETECTIVES ☐ YES ☐ NO		VICTIM'S CONDITION	RACE SEX AGE	
PERSON REPORTING CRIME TO POLICE DEPT			RESIDENCE ADDRESS				RESIDENCE PHONE	BUSINESS PHONE	EXT.	
PERSON WHO SECURED PREMISES			RESIDENCE ADDRESS				RESIDENCE PHONE	BUSINESS PHONE	EXT.	
PERSON WHO DISCOVERED CRIME			RESIDENCE ADDRESS				RESIDENCE PHONE	BUSINESS PHONE	EXT.	
WITNESS' NAME (OTHER THAN ABOVE)			RESIDENCE ADDRESS				RESIDENCE PHONE	BUSINESS PHONE	EXT.	
			RESIDENCE ADDRESS				RESIDENCE PHONE	BUSINESS PHONE	EXT.	
POINT WHERE ENTRANCE WAS MADE			INVESTIGATIVE OR LAB PERSONNEL NOTIFIED (NAME)				VALUE OF PROPERTY			
METHOD USED TO GAIN ENTRANCE			EXACT WORDS USED BY SUSPECT				CASH NOTES \$			
TOOLS, WEAPON, OR FORCE USED (EXPLAIN)							JEWELRY \$			
							PREC MET \$			
							FURS \$			
EXACT LOCATION OF PROPERTY WHEN STOLEN			WHERE WERE OCCUPANTS AT TIME OF OFFENSE				CLOTHING \$			
APPARENT MOTIVE - TYPE OF PROPERTY TAKEN OR OBTAINED			TRADEMARK OF SUSPECT(S) - ACTIONS OR CONVERSATIONS				OFFICE EQUIPT \$			
VEHICLE USED BY SUSPECT(S) - YEAR, MAKE, BODY TYPE, COLOR, LICENSE NUMBER, AND ANY OTHER IDENTIFYING MARKS							TV RADIOS \$			
							CAMERAS \$			
							FIREARMS \$			
IDENTIFY SUSPECTS ARRESTED BY NAME, BOOKING NUMBER AND CHARGE(S)			LIST OTHER SUSPECTS HERE ONLY IF ARREST WARRANTED OTHERWISE LIST BELOW				HOUSEHOLD GOODS \$			
							CONSUMABLE GOODS \$			
							LIVESTOCK \$			
DETAILS DESCRIBE EVIDENCE SUMMARIZE DETAILS NOT GIVEN ABOVE ITEMIZE AND DESCRIBE ANY PROPERTY OBTAINED INCLUDING SERIAL NUMBER AND VALUE UNDERLINE PROPERTY WITH SERIAL NUMBER							MISC \$			
THIS REPORT CONTAINS PROPERTY WITH SERIAL NUMBERS ☐ YES ☐ NO							TOTAL \$			

LOCATION WHERE REPORT TAKEN		EVIDENCE OR PROPERTY IMPOUNDED ☐ YES ☐ NO		PROPERTY TAG NUMBER(S)	
INTERVIEWING OFFICER(S)		BADGE	DIV.	APPROVED	SEAT OF OCC. DETECTIVE(S) ASSIGNED
PD-116 (REV. 5-76) USE FORM PD 153 FOR ADDITIONAL INFORMATION IF NEEDED		ADDITIONAL FORM USED ☐ YES ☐ NO		TYPE OF CRIME	

SAN DIEGO POLICE DEPARTMENT
MEDICAL EXAMINATION REPORT

NAME _____	RACE _____	AGE _____	MALE _____ FEMALE _____	SINGLE _____ MARRIED _____ DIVORCED _____ WIDOWED _____
ADDRESS _____		OCCUPATION _____		
PLACE OF EXAMINATION _____	SAN DIEGO, CALIF. _____	DATE _____	AM _____ PM _____	
REASON FOR EXAMINATION _____				

DATE INCURRED _____		AM _____	PLACE _____	
PM _____				
VICTIM'S OR SUSPECT'S STATEMENT _____				

FINDINGS _____				

CONCLUSION _____				

EVIDENCE OF ALCOHOL, NARCOTIC OR OTHER DRUG USAGE _____				

EXAMINED AT REQUEST OF AND WITH CONSENT OF _____				
EXAMINED IN PRESENCE OF _____				

Examining Physician M.D.

APPENDIX B

DATA COLLECTION FORM

RAPE DATA COLLECTION FORM

INCIDENT# _____

STATUS OF INCIDENT(check)

☐ Founded
☐ Unfounded
☐ Open
☐ Cleared by Arrest
☐ Exceptional Clearance

Time

_____ Hour
 _____ Day of Wk.
 _____ Date
 _____ Month
 _____ Year

OTHER FELONY(check)

☐ Homicide
☐ B&E
☐ Robbery(indoors)
☐ Robbery(outdoors)
☐ Other(specify) _____

Location of Crime: Block # _____ / Street _____ Beat # _____ Census Tract _____

Type of Location(check)

☐ Victim Residence: _____ Victim Place of Sojourn(Hotel) _____ Offender Residence _____
☐ Offender place of Sojourn. _____ Automobile. _____ Indoors(place of work, public Bldg)
☐ Open Space(park, playground, recreation area). _____ Street(alley, vacant lot)
other(specify): _____

Victim Data (note: if more than one victim fill out supplement) No. of Victims _____

Residence: Block # _____ / Street _____ / City _____ Beat # _____ Census Tract _____

Race _____ Age _____ Occupation _____

Marital Status(check): _____ Single; _____ Married; _____ Separated; _____ Widowed; _____ Divorced

Offender Data: (note: if more than one offender fill out supplement) No. of Offenders _____

Residence: Block # _____ / Street _____ / City _____ Beat # _____ Census Tract _____

Location of Arrest Block # _____ / Street _____ / City _____ Beat # _____ Census Tract _____

Race: _____ Age: _____ Occupation: _____

RAPE DATA COLLECTION FORM

page 2 of INCIDENT# _____

Offender Data(cont.)

Marital Status(check): _____ Single; _____ Married; _____ Separated; _____ Widower; _____ Divorced
 No. of Prior Arrests _____. Convictions _____. No. for Rape: Arrests _____. Convic. _____.
VICTIM-OFFENDER RELATIONSHIP(check)

_____ 1. Stranger: no previous contact existed and no acquaintanceship established before the offense of offender is known only visually to the victim.

_____ 2. Acquaintanceship: offender becomes known to the victim just before the offense or she has some prior knowledge about his residence, place of work or nickname, but now specific relationship exists.

_____ 3. Neighbor: close neighbor or victim saw the offender before and crossed his way many times.

_____ 4. Close friend or boy friend: offender often in victim's home or dated with her or having close, direct or frequent relationships with her

_____ 5. Family Friend: offender is friend of one of victim's family member, often at her home, trusted.

_____ 6. Family Relative: (Specify) _____

INITIAL MEETING PLACE

Location: _____ Block # _____ Street _____ Beat # _____ Census Tract _____

Type of Location(check)

_____ 1. Victim Residence: _____ 2. Victim Place of Sojourn: _____ 3. Offender Residence
 _____ 4. Offender Place of Sojourn: _____ 5. Victim in Transit(____)(a) hitch hiking,
 _____(b) waiting for bus or taxi, _____(c) in a parking lot, _____(d) victim walking on the
 street, _____(e) offender jumps into victim's car). _____ 6. Party: _____ 7. Indoors(place of
 work, store, public building). _____ 8. Bar; _____ 9. Outdoor recreation area(park, public pool,
 playground, etc.). _____ 10. Other(specify) _____

AFTER SCENE

Location: _____ Block # _____ Street _____ Beat # _____ Census Tract _____

Type of Location: use the same categories as in location of crime _____
 Other(specify) _____

RAPE DATA COLLECTION FORM

page 3 of INCIDENT# _____

VICTIM CONDITION(check)	OFFENDER CONDITION(check)	SEXUAL HUMILIATION(check)
___ Intoxicated	___ Intoxicated	___ Fellatio
___ Mentally Impaired	___ Mentally Impaired	___ Cunnilingus
___ Physically Handicapped	___ Physically Handicapped	___ Anal Intercourse
___ Narcotics or drug user	___ Narcotics or drug user	___ Repeated Intercourse
___ Normal	___ Normal	Other(specify) _____

NON-PHYSICAL FORCE(check)

___ Tempting-the victim is offered money or a ride; the offender tries to interest by verbal or non-verbal means.

___ Coercion- the victim is threatened with bodily harm or other kinds of verbal violence are employed by the offender.

___ Intimidation- physical gestures and verbal threats

___ Intimidation with a weapon or object

PHYSICAL FORCE(check)

___ Roughness- holding, pushing

___ Beating - non-brutal(slapping)

___ Beating - brutal (slugging, kicking, beating by fists repeatedly).

___ Choking or Gagging

___ Victim wounded with weapon.

VICTIM BEHAVIOR(check)

___ Submission - verbal protests

___ Tries to talk the offender out of committing the act or tells a false story

___ Screaming and Fighting with the offender

___ Victim attempts to escape

Length of time victim in the custody of the offender _____ (approximate)

Reason for any lag time in reporting the incident _____

Comments: _____

ARRESTEE
INFORMATION:

BKG # _____

SDP # _____

OFFENDER APPROACH TO VICTIMVictim Residence

- ____ 1. Break and Entry
- ____ 2. Forced Entry
- ____ 3. Follow Victim
- ____ 4. Victim Jumped near D.U.
- ____ 5. Offender gains entrance by ruse.
- ____ 6. Performing Legitimate Service

Offender Residence

- ____ 1. Victim attends party @ Offender residence.
- ____ 2. Victim is a solicitor
- ____ 3. Victim brought by friend to Offen. Res.
- ____ 4. Alleged Employment(i.e., baby sitting).
- ____ 5. Other _____

Victim in Transit

- ____ 1. Victim Hitchhiking
- ____ 2. Victim waiting for bus or taxi
- ____ 3. Offender hides in Victim's car
- ____ 4. Victim kidnapped in Parking lot
- ____ 5. Offender jumps into victim's car at intersection or traffic light
- ____ 6. Victim jumped while walking on the street.
- ____ 7. Victim stops auto for alleged malfunction.
- ____ 8. Offender solicits Victim aid while she is walking on the street.

Indoors besides participants residences

- ____ 1. Victim meets offender in Bar
- ____ 2. Victim meets offender at Party
- ____ 3. Victim accosted at Place of work
- ____ 4. Victim accosted in Public building

Open Space

- ____ 1. Victim jumped in park or open area
- ____ 2. Offender engages in prior conversation in park or open area
- ____ 3. Victim jumped at the Beach
- ____ 4. Victim meets offender at the Beach

Supplement Arrest Data: #Misd. _____ # Fel. _____ # Years Parole _____ & Probation _____
 #Misd. Sex Offen. _____ # Fel.(rape) _____ (for rape) _____ (for rape) _____

Other Information _____

APPENDIX C

INTERCORRELATION MATRICES: 1971 AND 1975

APPENDIX C
INTERCORRELATION MATRICES: 1971 AND 1975

Independent Variables and Abbreviations

1. Single Family Dwelling	SFD
2. Multiple Family Dwelling	MFD
3. Commercial	Comm.
4. Manufacturing	MFG.
5. Public	Pub
6. Recreation	Rec
7. Transportation	Trans.
8. Vacant Land	VL
9. Net Density	NDEN
10. Total Population	TPOP
11. Latino	Latino
12. Black	Black
13. Children (0-16)	0-14
14. Young (15-24)	15-24
15. Late Young (25-34)	25-34
16. Middle (35-44)	35-44
17. Late-Middle (45-64)	45-64
18. Late-Stage (65 Years or Older)	01D
19. Sex Ratio	SR

20. Youth Sex Ratio	YSR
21. Young Female	YF
22. Young Male	YM
23. Population/Household	PPH
24. Median Income	MI
25. Lower Income	LI
26. Lower Middle Income	LMI
27. Upper Income	UI
28. Welfare	Wel
29. Male Unemployment	MUN
30. Female Unemployment	FUN
31. Males Not in Labor Force	MNLF
32. Females Not in Labor Force	FNLF
33. Renters	Rent
35. Structures 5 or More Dwelling Units	APTS

San Diego 1971: Intercorrelation Matrix of Census and Land Use Data

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SFD	1.00												
2. MFD	-.33	1.00											
3. Comm	.10	-.05	1.00										
4. MFG	-.20	-.07	-.04	1.00									
5. Pub	-.13	-.11	.00	-.01	1.00								
6. Rec	-.16	-.05	.03	.00	-.02	1.00							
7. Trans	-.27	.04	-.04	.66	.03	-.03	1.00						
8. VL	-.32	-.37	-.07	-.03	-.06	-.08	-.04	1.00					
9. NDEN	-.16	-.02	-.03	-.01	.21	-.01	-.02	-.09	1.00				
10. TPOP	.23	-.19	.07	-.22	.00	-.06	-.16	.15	-.05	1.00			
11. Latino	-.21	.19	-.09	-.01	-.02	-.02	.10	-.22	-.01	-.07	1.00		
12. Black	-.02	.04	-.08	-.06	.10	-.03	.05	-.08	.00	.04	.28	1.00	
13. 0-16	.04	-.32	.06	-.11	-.06	-.16	-.08	.37	-.20	.30	.29	.33	1.00
14. 15-24	-.06	.18	-.01	-.01	.49	.00	.08	-.17	.06	-.13	-.08	-.03	-.43
15. 25-34	-.11	.16	.00	.09	.41	-.00	.16	-.17	.04	-.09	-.07	-.03	-.50
16. 35-44	.03	-.39	.06	.18	-.12	.02	.12	-.13	-.06	.17	-.07	-.04	.53
17. 45-64	.21	.07	-.02	.08	-.24	.17	.01	-.31	.02	-.24	-.23	-.19	-.68
18. OLD	-.07	.41	-.10	-.07	-.15	.09	-.10	-.25	.22	-.26	-.11	-.17	-.75
19. SR	-.23	-.13	.37	.14	.07	.17	.13	-.11	.45	-.18	.02	.02	-.20
20. VSR	-.13	-.10	.45	.09	.09	.20	.05	-.16	.67	-.21	-.06	.04	-.31
21. YF	-.05	.29	.11	-.13	.42	-.01	-.10	-.22	-.04	-.07	-.02	-.07	-.45
22. YM	-.06	.05	.04	.08	.48	.03	.00	-.11	.14	-.17	-.12	.03	-.35
23. PPH	.17	-.42	-.48	-.13	-.10	-.16	-.13	.40	-.23	.35	.12	.22	.93
24. MI	.34	-.38	-.43	-.23	-.12	-.00	-.28	.32	-.05	.27	-.40	-.27	.16
25. LI	-.30	.51	.55	-.08	-.02	.11	.00	-.42	.11	-.24	.51	.31	-.19
26. LMI	.37	-.35	-.47	-.19	-.18	-.14	-.23	.36	-.20	.35	-.29	-.15	.43
27. UI	.06	-.17	-.18	.32	-.02	.12	.21	.07	-.04	.02	-.30	-.20	-.21
28. We1	-.14	.40	.33	-.06	-.01	-.01	.08	-.35	.05	-.09	.67	.61	.08
29. Mun	-.28	.43	.40	-.15	.16	.17	.00	-.25	.18	-.15	.30	.19	-.25
30. Fun	-.05	.20	.08	-.21	-.03	.02	.00	-.13	-.00	.07	.42	.24	.18
31. MNLF	-.21	.09	.46	-.10	.32	.03	-.05	-.12	.73	-.14	.02	.04	-.44
32. FNLF	-.17	-.08	.02	-.10	-.02	-.02	-.11	.20	-.04	-.02	.20	-.01	.16
33. Rent	-.34	.55	-.62	.19	.03	.13	.17	-.49	-.00	-.18	.25	.04	-.43
34. APTS	-.32	.43	.63	.00	.05	.20	.01	-.33	.34	-.02	-.02	-.17	-.58

1971 Cont.

	14	15	16	17	18	19	20	21	22	23	24
14. 15-24	1.00										
15. 25-34	.90	1.00									
16. 35-44	-.53	-.43	1.00								
17. 45-64	-.12	-.30	-.18	1.00							
18. OLD	.02	-.12	-.59	.56	1.00						
19. SR	-.02	-.02	.20	.20	.02	1.00					
20. VSR	.04	.04	.06	.23	.20	.87	1.00				
21. YF	.90	.81	-.60	-.07	.09	-.18	-.17	1.00			
22. YM	.93	.85	-.40	-.14	-.04	.10	.22	.69	1.00		
23. PPH	-.49	-.40	.63	-.52	-.73	-.23	-.32	-.48	-.42	1.00	
24. MI	-.12	-.40	.47	.16	-.18	-.22	-.21	-.27	-.34	.41	1.00
26. LI	.10	.12	-.54	.02	.38	.15	.13	.22	-.08	-.40	-.73
26. LMI	.03	-.17	.38	-.16	-.39	-.30	-.24	-.26	-.22	.55	.40
27. UI	-.15	-.18	.28	.02	.04	.00	-.02	-.12	-.08	-.03	.61
28. Wel	-.03	-.00	-.28	-.07	.08	-.06	-.07	.11	-.02	-.10	-.51
29. Mun	.07	.29	-.36	.01	.19	.30	.26	.19	.31	-.40	-.52
30. Fun	.00	-.00	-.10	-.19	-.05	-.14	-.19	.08	-.08	.08	-.19
31. MNLF	-.11	.15	-.32	.14	.44	.42	.57	.19	.38	-.49	-.21
32. FNLF	.04	-.36	.01	-.10	.19	-.14	-.05	-.25	-.19	.17	.20
33. Rent	.06	.26	-.47	.07	.46	.16	.18	.26	.03	-.60	-.66
34. Apts	-.01		-.31	.24	.24	.38	.40	.20	.06	-.63	-.36
	25	26	27	28	29	30	31	32	33	34	
25. LI	1.00										
26. LMI	-.58	1.00									
27. UI	-.47	-.22	1.00								
28. Wel	.65	-.39	-.34	1.00							
29. Mun	.56	-.41	-.31	.47	1.00						
30. Fun	.37	-.23	-.17	.42	.22	1.00					
31. MNLF	.15	-.42	.01	.12	.34	-.21	1.00				
32. FNLF	-.00	-.20	.25	.01	-.21	.14	.30	1.00			
33. Rent	.75	-.61	-.20	.42	.41	.16	.15	-.18	1.00		
34. Apts	.47	-.45	-.07	.09	.44	-.06	.34	-.17	.72	1.00	

San Diego 1975: Intercorrelation Matrix of Census and Land Use Data

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. SFD	1.00												
2. MFD	-.34	1.00											
3. Comm	-.38	.18	1.00										
4. MFG	-.23	-.15	-.03	1.00									
5. Pub	-.13	-.07	-.00	-.09	1.00								
6. Rec	-.16	-.09	.03	-.07	-.07	1.00							
7. Trans	-.42	.12	.15	.53	-.01	-.05	1.00						
8. VL	-.27	-.32	-.37	-.07	-.05	-.07	-.13	1.00					
9. NDEN	-.23	-.07	.29	-.01	.04	-.05	-.00	-.01	1.00				
10. TPOP	-.09	-.21	-.25	-.17	-.11	.02	-.21	.48	-.00	1.00			
11. Latino	-.24	.22	.15	.36	-.03	-.11	.33	-.13	.01	-.06	1.00		
12. Black	.00	-.00	-.03	.06	.15	-.09	.05	-.00	-.04	-.06	.34	1.00	
13. 0-14	.04	-.25	-.40	.00	-.08	-.08	-.09	.41	-.11	.40	.31	.40	1.00
14. 15-24	-.06	.17	-.07	-.14	.46	-.06	-.06	-.04	-.15	-.06	-.02	-.02	-.17
15. 25-34	-.18	.22	-.00	-.19	.37	-.08	-.11	-.02	-.03	.05	-.09	-.12	-.21
16. 35-44	.06	-.38	-.26	-.00	-.17	.07	-.05	.32	.14	.29	-.04	.05	.54
17. 45-64	.34	-.14	.04	.02	-.17	.02	-.13	-.21	.05	-.29	-.14	-.17	-.40
18. Old	-.02	.34	.25	-.02	-.11	.11	-.02	-.35	.05	-.33	-.10	-.19	-.72
19. SR	-.26	-.09	.51	.14	.15	-.02	.28	-.11	.60	-.13	.07	-.02	-.24
20. YSR	-.20	-.02	.54	.06	.14	-.02	.13	-.15	.55	-.12	-.00	-.06	-.30
21. YF	-.04	.17	-.09	-.18	.44	-.08	-.14	-.00	-.18	-.01	-.02	-.01	-.13
22. YM	-.08	.16	-.05	-.09	.46	-.04	.01	-.09	-.12	-.11	-.02	-.02	-.20
23. PPH	.16	-.38	-.51	.01	-.00	-.04	-.01	.40	-.11	.34	.11	.28	.84
24. MI	.29	-.41	-.41	-.20	-.11	.11	-.36	.36	-.08	.31	-.44	-.29	.24
25. LI	-.32	.49	.40	.12	.14	-.03	.22	-.42	.12	-.38	.47	.25	-.34
26. LMI	.29	-.33	-.37	-.09	-.10	-.09	-.32	.31	-.19	.26	-.27	-.10	.33
27. UI	.19	-.26	-.22	-.13	-.07	.18	-.22	.15	-.03	.14	-.33	-.27	.01
28. Wel	-.22	.20	-.07	.09	.18	-.09	.30	-.11	.02	-.12	.66	.61	.18
29. Mun	-.30	.27	.54	.16	.11	-.03	.17	-.26	.43	-.24	.36	.25	-.19
30. Fun	-.19	.20	.34	.17	.07	-.03	.06	-.20	.34	-.19	.13	.10	-.25
31. MNLF	-.15	-.08	.32	.02	.14	-.02	-.02	-.00	.43	.01	.19	.20	.06
32. FNLF	-.08	-.13	-.07	.03	-.00	.00	-.11	.16	.18	.14	.32	.26	.52
33. Rent	-.37	.55	.41	.03	.22	.03	.12	-.36	-.02	-.28	.20	-.05	-.43
34. Apts	-.26	.42	.28	-.07	.27	.05	.03	-.23	-.09	-.17	-.11	-.23	-.55

1975 Cont.

	14	15	16	17	18	19	20	21	22	23	24
14. 15-24	1.00										
15. 25-34	.83	1.00									
16. 35-44	-.43	-.48	1.00								
17. 45-64	-.33	-.49	.17	1.00							
18. OLD	-.21	-.17	-.49	.39	1.00						
19. SR	-.22	-.03	-.06	.02	.02	1.00					
20. VSR	-.22	.04	-.10	.00	.00	.88	1.00				
21. YF	.97	.83	-.43	-.34	-.21	-.29	-.26	1.00			
22. YM	.97	.80	-.41	-.31	-.20	-.15	-.16	.91	1.00		
23. PPH	-.07	-.26	.56	-.31	-.76	-.19	-.28	-.06	-.07	1.00	
24. MI	-.12	-.25	.58	.32	-.33	-.13	-.24	-.09	-.14	.41	1.00
25. LI	.15	.24	-.57	-.11	.50	.27	.31	.12	.17	-.58	-.84
26. LMI	-.03	.03	.30	.02	-.40	-.32	-.30	.00	-.06	.34	.31
27. UI	-.10	-.27	.39	.37	-.08	-.12	-.11	-.10	-.10	.19	.86
28. Wel	.04	-.03	-.15	-.16	-.00	.12	.04	.03	.05	.00	-.53
29. Mun	-.02	.15	-.20	-.07	.22	.67	.62	-.07	.01	-.37	-.60
30. Fun	.00	.11	-.15	.03	.27	.54	.51	-.02	.04	-.38	-.40
31. MNLF	-.27	-.07	-.00	-.08	.09	.62	.83	-.27	-.27	-.02	-.17
32. FNLF	-.35	-.32	.19	-.14	-.12	.19	.30	-.33	-.36	.40	.08
33. Rent	.39	.52	-.59	-.23	.41	.02	.07	.38	.39	-.63	-.62
34. Apts	.42	.50	-.42	-.11	.36	-.07	-.01	.41	.41	-.58	-.32
	25	26	27	28	29	30	31	32	33	34	
25. LI	1.00										
26. LMI	-.53	1.00									
27. UI	-.59	-.09	1.00								
28. Wel	.55	-.40	-.38	1.00							
29. Mun	.71	-.44	-.42	.48	1.00						
30. Fun	.54	-.37	-.24	.32	.77	1.00					
31. MNLF	.28	-.23	-.10	.21	.51	.35	1.00				
32. FNLF	.03	-.13	.10	.18	.17	.02	.64	1.00			
33. Rent	.73	-.40	-.39	.28	.39	.31	-.04	-.22	1.00		
34. APTS	.36	-.14	-.19	-.18	.07	.09	-.18	.25	.72	1.00	

MICHIGAN STATE UNIVERSITY LIBRARIES



3 1293 03085 7290