

***THE GEOGRAPHIC AND TEMPORAL SEQUENCING
OF SERIAL RAPE***

FINAL REPORT

SUBMITTED TO

THE NATIONAL INSTITUTE OF JUSTICE

JULY 15, 1995

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Research conducted under interagency transfer of funds # 91-IJ-R027

162419c2

ACKNOWLEDGEMENTS

The authors would like to thank the National Institute of Justice, which supported this project for three years.

Our two research assistants, Natalie A. Gibbs and Susan L. Trumbetta, spent many, many hours coding the protocol and conducting the statistical analysis, and helping to formulate the conceptual basis of the project. Andrea J. Cummings designed and automated our geographic analysis, produced all of the maps, and edited the final manuscript. Vickie Anderson, the project secretary and data entry operator, organized and tracked the process of coding over 500 protocols, entered them into our database, and maintained the logs and records vital to operating a project of this complexity.

Mr. Ruben Rodriguez, of the National Center for Missing and Exploited Children (NCMEC), volunteered to geocode each and every rape in this dataset, enabling us to do far more analysis than had originally been planned. John Jarvis, FBI, spent many hours obtaining UCR data used in the temporal analysis conducted by Dr. McCleary.

Our Advisory Board, consisting of Paul Brantingham and Patricia Brantingham (Simon Fraser), Richard McCleary (University of California at Irvine), Robert Prentky (Peters Institute), and George Rengert (Temple) provided invaluable encouragement and assistance during the course of the project. Keith Harries (University of Maryland, Baltimore County) consulted with us on the geographical analysis.

Dr. John H. Campbell and Anthony O. Rider at the FBI, and Richard Bonnie, Director of the Institute for Law, Psychiatry, and Public Policy at the University of Virginia, provided crucial support within our own organizations. Dr. Richard Rau, our grant monitor at the National Institute of Justice, similarly offered support and helped to clarify the evolving concepts of study.

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INTRODUCTION

The current study has examined serial rape from an investigatory perspective. It has sought to quantify the behavior manifest by a serial rapist during the course of his serial rapes and to relate this crime scene behavior to patterns in the temporal sequencing and geographical clusterings of his sexual offenses. The sample, collected through the FBI's National Center for the Analysis of Violent Crime (NCAVC), included 108 serial rapists who were responsible for a total of 565 rapes. In the context of the current study, the term "crime scene" is being used to designate any information about the perpetrator or his manner of offending that can be obtained from the victim (or more specifically, the victim statement) prior to the offender's identification and arrest.

The investigatory focus of the study has been on the quantification of crime scene behavior pertinent to all sexual assaults and the exploration of these dimensions of behavior as they may help to inform investigators as to the possible timing of subsequent offenses or the location of the rapist (i.e., the rapist's residence). In this way, it has sought to give some empirical support to the process of criminal investigative analysis conducted by the FBI's Behavioral Science Unit and by its "profiling coordinators" in FBI field offices located across the country.

Theoretically, the study has examined commonalities and differences between the Groth rape typology, currently used by the FBI's Behavioral Science Unit to analyze reports of unsolved rapes, and the Massachusetts Treatment Center (MTC:3) taxonomy, developed by Prentky and Knight (Prentky, Knight, and Rosenberg, 1988) to clinically assess convicted rapists ordered into treatment at the Massachusetts Treatment Center. The application of the crime scene behavioral

scales designed by Warren, Reboussin, Hazelwood, and Wright (1991) to quantify the interaction occurring between a rapist and his victim during a rape as they apply to this sample of serial rapists and as they potentially aid in determining these classifications has also been a focus of inquiry.

This research derives from and is based upon prior research conducted by the FBI on serial rape (Hazelwood and Warren, 1989a; 1989b), as well as academic research concerning taxonomies of rape (Groth, Burgess, and Holmstrom, 1977; Prentky, Knight, and Rosenberg, 1988), investigatory psychology (Canter and Larkin, 1993; Canter and Gregory, in press), cognitive geography (Brantingham and Brantingham, 1984; Rengert and Wasilchick, 1990; LeBeau, 1987a; 1987b), and journey to crime research (Rossmo, 1993; Nichols, 1980; Pyle, 1974; Rhodes and Conly, 1981).

CHAPTER I

REVIEW OF PERTINENT LITERATURE

A. THE NATURE OF CRIMINAL INVESTIGATIVE ANALYSIS (OFFENDER PROFILING)

Ault and Reese (1980), in perhaps the first written piece on offender profiling, argued that "as the crime rate grows in this country and the criminals become more sophisticated, the investigative tools of the investigator must also become more sophisticated" (p. 23). They suggested that the psychological assessment of a crime, or the "profiling" of it, offers one such development, the process having been designed to "identify and interpret certain items of evidence at the crime scene that would be indicative of the personality type of the individual or individuals committing the crime" (p. 23). The authors explained that this type of evidence may not be the physical evidence that is the usual domain of the investigating officer, but rather be aspects of behavior that help to describe the emotions and personality traits of the offender. Ault and Reese defined the crime scene in this context to include the scene of the crime, the victim of the crime, and all other locations involved in the contact between the victim and the perpetrator. Emphasizing that the completeness of the profile depends on the amount of physical and psychological evidence left at the scene of the crime, they delineated a number of factors included in the majority of profiles: the perpetrator's age range, sex, race, marital status, general employment, reaction to questioning by the police, degree of sexual maturity, whether the offender is likely to reoffend, the possibility that he has committed similar offenses in the past, and the likely nature of the offender's criminal history. In describing this process, which ideally

culminates in the recognition of the motive for the crime and therefore the characteristics of a potential perpetrator, Ault and Reese mentioned the old "ockhams razor" rule, a 14th century axiom that suggests that given a number of alternative solutions, the most parsimonious one is usually correct.

In The Mind Hunters (1983), Porter described the early stages in the development of profiling by the Behavioral Sciences Unit of the FBI, terming profiling "the latest weapon in the FBI arsenal" (p. 45). He referenced a number of high-publicity cases in which profiling assisted the investigating officers and, in so doing, identified "a growing number of police officers across the country who think that when it comes to solving certain kinds of crime, profiling can provide crucial help" (p. 45). In discussing the process used in profiling a case, Porter highlighted the importance of detail in the analyses that are conducted: "In working up its profiles, the FBI pays microscopic attention to autopsy reports and to maps and photographs of the crime scene. How the victim was treated reveals a lot about the killer" (p. 44). Citing the relevance of various aspects of the crime scene, such as the mode of killing used, the amount of force inflicted on the victim, or the post-offense behavior of the perpetrator, Porter observed that the "FBI relies less on deep psychological insight than on statistical probabilities, plain common sense, and the experience gained from looking at hundreds of similar cases" (p. 48). Porter described the study of serial murder that was then underway, and explained that the interviews were designed to help the Behavioral Sciences Unit understand "how criminals actually work . . ." (p. 49).

Douglas, Ressler, Burgess, and Hartman (1986) posited a six stage criminal-profile-generating process that conceptually delineated the profiling processes utilized in murder cases by the FBI National Center for the Analysis of Violent Crime. In their paradigm, Stage 1, the

Profiling Input Stage, involves the careful review of all pertinent case information, including a complete description of the crime and a description of the crime scene, background information on the victim, forensic information pertaining to all aspects of the crime, photographs of the crime, and autopsy reports where relevant. Stage 2, the **Decision Process Models Stage**, involves the arranging of the information into meaningful patterns. These patterns involve the type of murder (i.e., mass, spree, and serial), the primary intent of the murder (i.e., criminal, emotional, or sexual), victim risk factors, offense risk level, the potential for escalation, the timing of different aspects of the crime, and location characteristics. Stage Three, the **Crime Assessment Stage**, involves the possible reconstruction "of the sequence of events and the behavior of both the offender and the victim" (p.18). This process focuses on the assessment of motivation as best interpreted given a particular constellation of crime scene dynamics. The fourth stage, the **Criminal Profile Stage**, involves the description of the type of person likely to have committed the crime, given the motivation delimited by the crime scene dynamics. The profile generally includes characteristics and behavior patterns of the perpetrator as well as recommendations for interrogating and apprehending him. In the fifth stage, the **Investigation Stage**, suspects fitting the general profile are evaluated and further information is generated regarding them. Finally, if the profile has proven useful in directing the investigation, the perpetrator is identified and apprehended. In conclusion, the authors suggested that, through continued research both by the FBI's National Center for the Analysis of Violent Crime and professionals in other fields, "the profiling process will continue to be refined and be a viable aid to law enforcement" (p. 27).

In 1987, Hazelwood, Ressler, Depue, and Douglas provided a more experiential description of the profiling process. They suggested that crimes containing indications of mental

or emotional abnormality are most productively profiled. They highlighted the importance of a careful review of all the available information and recommended that a commercial map of the crime area, the victim statement, and information about the victim be included in each profiling request. The authors emphasized that the profiler does not obtain any of this information directly and therefore is dependent on the local police to elicit as much appropriate information as is possible from the victim. In describing the process that is utilized, Hazelwood et al. discussed the importance of investigative and research experience, common sense, intuitiveness, the ability to isolate emotions, the ability to analyze a situation and arrive at logical conclusions, and the ability to reconstruct the crime utilizing the criminal's reasoning process. They referenced an evaluation of the Behavioral Science Unit's "profiling assistance," conducted by the Institutional Research and Development Unit of the FBI, that surveyed user agencies as to the investigative value of profiles in 192 cases. The study found that the profile helped to focus the investigation in 77 percent of the cases and resulted in the identification of the perpetrator in 15 instances. Hazelwood et al., however, also referenced one particularly erroneous profile, emphasizing that it is important that the reader not "misinterpret the value of this very subjective process" as "human behavior is much too complex to categorize simplistically" (p. 147).

In the same publication, Hazelwood and Burgess (1987a) outlined an interview that might be used in collecting the information from a rape victim in such a way as to facilitate an assessment of the motivation for the rape and hence the possible characteristics of the perpetrator. They outlined questions designed to elicit information regarding the manner of approach used by the perpetrator in procuring his victim (i.e., con, blitz, and surprise), the technique used by the perpetrator to maintain control of the victim (i.e., mere presence, threats, or force), the amount of

physical force used by the perpetrator (i.e., minimal to brutal levels), the response of the perpetrator to resistance upon the part of the victim (i.e., cease demands, compromise/negotiate, flee, threats, or force), the presence and kind of sexual dysfunction manifested by the rapist (i.e., erectile insufficiency, premature ejaculation, retarded ejaculation, or conditional ejaculation), the types and sequence of the sexual acts requested or performed by the perpetrator and the apparent intent of these acts (i.e., fantasy, experimentation, or punishment), the verbal statements made or demanded by the perpetrator, the precautionary measures taken by the perpetrator (i.e., novice or experienced), the objects removed from the scene of the crime (i.e., valuables, personal, or evidentiary), and whether there was any experience of the victim that might suggest that she was specifically targeted as a victim. The authors asserted that rape is a sexual act that serves non-sexual needs and maintained that "through an analysis of the offender's verbal, sexual, and physical behavior, it may be possible to determine what needs are being served and to project personality characteristics of the individual having such needs" (p. 167).

Pinizzotto and Finkel (1990), adopting a more empirical stance, examined the process and outcome differences in criminal investigative analysis that were demonstrated by profilers, detectives, psychologists, and students when "profiling" a homicide and case of sexual assault. The authors dated criminal profiling to World War II when the Office of Strategic Services hired William Langer, a psychiatrist, to profile the personality of Adolf Hitler. This process was subsequently first used by the FBI in 1971 in responding to the requests by local law enforcement for assistance in investigating unsolved, violent crimes. Citing the writing of Ault and Reese (1980), the authors observed that the process of profiling involves a five step process: 1) a comprehensive study of the nature of the criminal act and the types of persons who have

committed a particular offense; 2) a thorough study of the particular crime scene in the case; 3) a careful review of the background and activities of the victim and any suspects; 4) formulation of possible motivating factors for all parties involved; and 5) description of the perpetrator based upon overt characteristics associated with the person's probable psychological make-up. In this way, the "what" of the crime is translated into the "why" of the offense from which the "who" of the perpetrator can generically be ascertained.

Based upon this conceptualization of the profiling process, Pinizzotto and Finkel studied the process and outcome among four groups asked to profile a case of murder and sexual assault. They found that the professional profilers were more accurate than the nonprofilers for the sexual assault but not for the murder, a finding that the authors attributed to the limited information available for the homicide both because of sanitation and the lack of a victim to provide detailed information about the process of the offense. In both instances, however, the profilers created profiles that were rated as being richer and more comprehensive, an achievement that seemed to derive not only from the profilers' retention of detail but also from their stronger ability to extract details that would be most helpful in the development of a useful profile. In discussing their findings, Pinizzotto and Finkel commented on the complexity of the profiling process and suggested that it is not simply a unilevel process of analysis that links the what, why, and who of a crime in a linear fashion, but rather "a complex, multilevel series of attributions, correlations, and predictions" that encompass the "what" to "who" loop of assessment. In order to improve the accuracy of profiling, the authors emphasized the importance of base-rates derived from studies that encompass details regarding a large number of a particular type of offender; the development of a system of matrices that structure crime scene details in both convergent and discriminative

lines; the development of research that highlights motivational differences within a particular group of offenders; and the development of a group profiling process that highlights the individualistic strengths of different profilers.

In an article published in 1992 in the FBI's Law Enforcement Bulletin, Douglas and Munn described three aspects of a sexual crime: the modus operandi, the signature, and the staging of the crime. They suggested that these three components have different developmental characteristics and hence differential significance when linking offenses by the same offender. The modus operandi is defined as those behaviors that allow the offender to obtain a victim, complete the crime, and depart the scene of the crime without being identified. Douglas and Munn observed that the modus operandi is "dynamic and malleable" and evolves as the offender gains both experience and confidence. The signature component of a crime represents these ritualistic aspects of the offense that encapsulate the fantasy that lies at the core of the sexual crime. While these behaviors may become more pronounced over time, their essential elements remain consistent as they reflect the static nature of the offender's dynamically determined fantasy life. Staging refers to the changes in a crime scene that are consciously altered prior to notifying the police, either in an attempt to influence the direction of the investigation or in order to avoid embarrassment regarding some aspect of the crime. The authors emphasized the importance of being able to identify these different aspects of a sexual crime and suggested that the signature aspect of the crime is most useful in linking crimes perpetrated by the same offender. Alternatively, changes in the modus operandi can be used to assess the evolving criminal experience of an offender, while indications of staging in a crime scene can alert investigators to the possible involvement of individuals who are intimate with the victim. Douglas and Munn

likened each crime scene to the intricacies embedded in the plot of a play and maintained that "[by] approaching each crime scene with an awareness of these factors, investigators can steadily improve their ability to read the true story of each violent crime scene" (p. 10).

Jackson, Van Den Eshof, and de Kleuver (in press) explored the process of criminal analysis used by trained profilers as one step in the assessment process that preceded the formation of a Crime Analysis Unit for the Netherlands. The study, using an expert/novice paradigm, examined the differences between a novice, an experienced vice detective, and a trained profiler (criminal investigative analyst) in terms of the information examined and the process utilized in assessing a case of sexual homicide. Each of these individuals were videotaped "thinking aloud" about the case as they reviewed all of the relevant information, a process that took each of them almost a week to complete. Based upon an examination of these tapes, the study concluded that there were "a number of important differences between traditional detective work and offender profiling" (p. 14). Jackson et al. observed that in offender profiling, "statistical probability plays a dominant role in the relevant reasoning processes" (p. 9), an assessment process that evolves out of the knowledge gained through the extensive study of a large number of solved crimes of a similar type. The authors noted that this type of probabilistic thinking is "virtually unknown" in everyday detective work, where conclusions are drawn only on the basis of established data derived from forensic evidence. Jackson et al. further observed that the profiling perspective incorporates findings from the behavioral science literature that organizes motivational hypotheses according to crime scene paradigms, such as the organized/ disorganized murder (Hazelwood and Douglas, 1980), the typology of rape (Hazelwood, 1988), and child molesting (Lanning, 1988) developed and utilized by the FBI. Jackson et al. explained that, based

upon the encouraging nature of these findings, a criminal investigative type of analysis similar to that developed by the FBI was established within the Crime Analysis Unit, with subsequent research being initiated to assess the relevance of the FBI's profiling assumptions to the Dutch context.

B. SERIAL RAPE

In 1984, the FBI's National Center for the Analysis of Violent Crime initiated its first study of serial rape. The study was designed to help inform the "criminal investigative analysis" (profiling) that was being developed by the Behavioral Science Unit regarding various types of repetitive, sexual violence. It was based upon in-depth interviews with 41 serial rapists, each of whom was responsible for at least ten rapes prior to his apprehension and who, as a group, were responsible for 837 rapes and 400 attempted rapes (Hazelwood and Burgess, 1987). The study focused upon the developmental antecedents of this behavior, the crime scene correlates of the offenses perpetrated by these offenders, and the means used by the perpetrators to select victims and avoid detection.

Based upon the original data, Hazelwood and Warren (1989a; 1989b) described the 41 serial rapists in terms of their demographic, developmental, and personality characteristics. They reported that many of the rapists appeared relatively normal: they came from average or advantaged homes and, as adults, were intelligent, employed individuals living with others in a family setting. The authors observed, however, that pathology was discerned in the rapists' developmental history: "[f]ew of the men described close relationships with either their mother or their father, a significant number of them had been institutionalized at some point in their adolescence, and an exceedingly high proportion reported sexual abuse as children or adolescents"

(p. 25).

Burgess, Hazelwood, Rokous, Hartman, and Burgess (1989) examined in greater detail the sexual abuse that was reported by the same 41 serial rapists. They found that, as children, 56 percent of the rapists reported having been the victims of either a "forced" or "exploitive" sexual experience, while an additional 20 percent reported having witnessed sexually disturbing events. They observed that the majority of the offenders could recall the age of their first rape fantasy, this varying from age eight to twenty-eight years with a mean of 16.9 years. Approximately half of the rapists also reported involvement as adolescents in sexually abusive behavior toward younger children. In assessing the "linkages" between these experiences, Burgess et al. suggested that early sexual abuse is responded to by reenactment behavior that attempts to "bind the symptoms of stress and trauma. . ." (p. 289). The rapist's preoccupation with sexually aggressive thoughts subsequently expresses itself in the form of early rape fantasies which eventually crystallize into "juvenile behaviors of spying, fetish burglaries, molestations, and rapes" (p. 293).

Hazelwood and Warren (1990) described the criminal behavior of the same 41 serial rapists using, as organizing themes, the dynamics used by criminal investigative analysts in their profiling of rape cases (i.e., the manner of approach, the rapist's method of maintaining control of the victim, the amount of physical force used, the rapist's response to victim resistance, the sequencing of sexual acts, the presence of verbal scripting, and the precautionary measures taken by the offender to avoid detection). They described trends across the rapists' first, middle, and last rapes, observing that the majority of the offenders' rapes were premeditated (55-61 percent) with only a minority being described by the rapists as impulsive (15-22 percent) or opportunistic (22-24 percent). A "surprise" method of approach (44-54 percent) was used more often than a

on" or "blitz" method of approach (24-41 percent), suggesting that the assailant had previously identified his victim and was aware of times when she was typically alone. Threatening rather than physically assaultive behavior was used most often in maintaining control over the victim, and only minimal levels of force (i.e., non-injurious force employed more to intimidate than punish) were used in most of the offenses (75-84 percent). Hazelwood and Warren reported that slightly over a third of the offenders experienced a sexual dysfunction during the offense, with the majority reporting surprisingly low levels of pleasure from the sexual act (i.e., 3.7 on a 10 point scale). According to self-report, only a third of the rapists had consumed alcohol or drugs prior to the offense. The most common post-offense behavior included feelings of remorse and guilt (44-51 percent), following the case in the media (28 percent), and an increase in alcohol and drug consumption (20-27 percent).

Hazelwood, Reboussin, and Warren (1989) focused on the consistency and change in behavior manifest by the rapists during their first, middle, and last offenses. In general, they found that the rapists were consistent in behavior across all three rapes. The findings suggested, however, that while most of the rapists did not increase in the amount of force they used over their first, middle, and last offenses, a minority of the rapists did become more violent over time. When the Non-Increasers and Increasers were compared, no differences were found on most variables, including age at first and last assault, race, marital status, education, military record, the offender's acquaintance with the victim, mean pleasure at first and last assault, sexual abuse of the offender as a child, the general quality of the home environment, and the quality of the offender's relationship with his parents. The Increasers did, however, assault more victims (a mean of 40 as contrasted to a mean of 22 reported for the Non-Increasers), assault more frequently (a mean of

every 19 days as contrasted to every 55 days for the Non-Increasers), inflict more serious injuries during the last offense (9 out of 10 inflicted "moderate" to "life-threatening" injuries), and were rated by the interviewers to have committed more sadistic acts during the last assault. The authors observed that the data also suggest that when the victim resisted, the amount of pleasure experienced by the rapist was greater (for example 4.15 as contrasted to 3.7 on the first assault) and the duration of the rape was longer (for example, 81 minutes versus 26 minutes on the last rape).

Warren, Reboussin, Hazelwood, and Wright (1991) recoded the original data and added to it a new sample of serial rapes described by the victims rather than the perpetrators of the offense. The recoding involved coding each rape on 33 verbal, physical, and sexual scales which assessed the interaction that occurred between the rapist and his victim during the rape. The new data set was derived from victim accounts of a different set of serial rapes submitted to the FBI's National Center for the Analysis of Violent Crime for criminal investigative analysis.

Using discriminant analysis on the scaled variables, Warren et al. (1991) were successful in classifying rapes according to the Groth typology, with 83 percent correct classification using the offender data and 91 percent correct classification using the victim data. They were also able to classify rapists according to the rapist's Increaser/Non-Increaser status (as discussed above), with an overall accuracy of 92 percent using the offender data and 89 percent using the victim data. Variables such as use of bindings, transportation of the victim, the lack of negotiations or reassurance, the presence of demeaning statements to the victim, the tendency of the offender to ask the victim questions and talk about himself, and the duration of the rape proved useful in the classification process. In discussing the results, Warren et al. emphasized that the victim data

cluded only the first rape in a series of rapes perpetrated by the same offender, suggesting that classification or prediction of rape type or Increaser status can be implemented early in a series of offenses, based solely on information supplied by the victim.

Grubin and Gunn (1990) attempted to replicate the Warren et al. (1991) findings reported above regarding Increasers and Non-Increasers, using 11 serial rapists derived from their sample of 142 incarcerated rapists who had been arrested throughout England and Wales. The authors were unable to replicate any of the classificatory features reported in the Warren et al. discriminant analysis, although they did find that Increasers were younger (i.e., a mean age of 23 years as compared to 29 years) and were more likely to prematurely ejaculate during the offense. Grubin and Gunn reported, in fact, that "more gratuitous violence tended to be present in the non-increasing group" (p. 85). In an attempt to explain the different findings, Grubin and Gunn suggested that the FBI sample contained more individuals from "the extreme end of the sadistic spectrum" while their study was made up of "a more general sample of sexual offenders" (p. 85).

Grubin and Gunn also examined differences between their serial rapists (n=37) and the offenders believed to have raped only once (n=105). They found that the serial offenders manifested more premeditation in their offenses, showed a greater tendency toward the enactment of a sexual fantasy, and used weapons and restraints more routinely. There were no significant differences between groups in terms of the amount of violence and humiliation that characterized the rapes and the number of sexual acts performed or requested. Clinically, the serial rapists more frequently suffered from a paraphilia (exhibitionism and voyeurism were most common), reported higher sex drive, and described greater difficulty controlling their sexual urges. Developmentally, a higher proportion of serial rapists (32 percent) reported coming from families

judged to be "severely chaotic." These differences led Grubin and Gunn to conclude that "serial rapists are different from other types of rapists . . . these men show a greater disturbance in their sexual behavior, and the underlying cause of their offending . . . has more to do with sexual elements than any attitudinal or cultural factor" (p. 7).

Warren, Hazelwood, and Reboussin (1991) examined further the sexual behavior patterns of the serial rapist. Starting with the experience of multiple sexual assaults in childhood or adolescence, they found a significant relationship between this type of early sexual trauma and involvement with exhibitionism as an adult. The relationship reported by Ressler, Burgess, and Douglas (1988) between early sexual trauma and bondage sex, fetishism, obscene phone calls, or cross-dressing could not be replicated with the serial rape data. Drawing upon earlier findings by Abel, Becker, Cunningham-Rathner, Mittelman, and Rouleau (1980), Warren et al. also attempted to examine the clustering of multiple paraphilias among the serial rapists. In line with Abel et al.'s earlier research, Warren et al. found that 68 percent of the respondents reported that they had been involved in voyeuristic activities, 41 percent in fetishistic activities, 26 percent in bondage sex, 23 percent in cross-dressing, and 38 percent as having made obscene phone calls. Seven percent of the sample also expressed an interest in coprophilia or urologia while nine percent manifested sexually sadistic behavior during their sexual assaults. The authors observed that these findings "support Abel's earlier observations concerning the multiple occurrence of paraphilic behavior and highlight the importance for informed inquiry by both mental health and law enforcement into the varied nature of the rapist's sexual activity" (p. 23).

TAXONOMIES OF RAPE

1. OFFENDER TAXONOMIES

Over the years, efforts have been made to formulate taxonomies of rape that differentiate rapists according to their motivation for raping. Guttmacher and Weihofen (1952) differentiated the "true sex offender," the "aggressive offender," and the "sadistic rapist." Gebhard, Gagnon, Pomeroy, and Christenson (1965) delineated four categories of rapists: the "double-standard," the "amoral delinquent," the "explosive," and the "assaultive-sadistic" offender.

a. *The Groth Typology*

The classification scheme used by the FBI in its criminal investigative analysis has been the Groth typology as originally formulated by Groth, Burgess, and Holmstrom in 1977. This typology recognizes four main rapist types: the Power-Reassurance rapist, who is characterized motivationally by an effort to restore "disturbing doubts about his sexual inadequacy and masculinity"; the Power-Assertive rapist, who "regards rape as an expression of his virility and mastery and dominance"; the Anger-Retaliatory rapist, who commits rapes as an expression of hostility and rage; and the Anger-Excitation rapist, who experiences pleasure and excitement in response to the victim's suffering.

The Groth framework was subsequently modified by Hazelwood and Burgess (1987) for use specifically in a law enforcement context. Hazelwood (1987), focusing on the crime scene correlates of the various types, suggested that the Power-Reassurance rapist exhibits "pseudo-unselfish" verbal and sexual behavior during the rape, utilizes minimal to moderate levels of force, generally selects his victims prior to the offense through surveillance, uses a "surprise" manner of approach, and generally rapes his victims when they are alone or with small children. According

to Hazelwood, the Power-Reassurance rapist often apologizes to his victim, takes with him some type of souvenir, and is the type of rapist who is most likely to try and recontact his victim following the rape. The Power-Reassurance rapist's pattern of offenses also tends to be consistent and to occur in the same vicinity or in a similar socioeconomic neighborhood.

Hazelwood described the Power-Assertive rapist as being more "selfish" in his behavior and less interested in the comfort or welfare of his victim. He tends to use a "con" type of approach, manifests higher levels of force during the assault, and "will subject the victim to repeated sexual assaults, as this is a further expression of his manliness and of his natural dominance over women" (p. 177).

The Anger-Retaliatory rapist routinely demonstrates excessive levels of force, generally rapes in an impulsive manner that reflects an "emotional outburst" predicated on anger, and uses a "blitz" type of attack which subdues the victim through direct, physical force. The actual sexual assault is often short in duration, with the rapist leaving the victim shortly after he has vented his anger towards her sexually and physically. There is seldom any pattern to his offenses, and he tends to use weapons of opportunity and to attack in a sporadic manner.

Finally, the Anger-Excitation rapist, as described by Hazelwood, rapes in a manner that reflects the sexual excitation he derives from the pain and suffering of his victim. His crimes are carefully planned and methodically executed: "[every] detail of the crime has been carefully thought out and rehearsed either literally or in the offender's fantasies" (p. 180). This type of rapist uses brutal levels of force, at times resulting in murder, and tends to keep his victims incapacitated for hours or days during which time he tortures them and treats them in such a way as to induce psychological despair. Hazelwood asserts that this type of rapist tends to use

ndings, often records the sexual assault, and forces the victim to participate in sexual activities at create pain, humiliation, and degradation.

Hazelwood maintains that these categories of rape have proven quite accurate when applied to cases submitted to the FBI's National Center for the Analysis of Violent Crime. He qualified, however, that "seldom will a rapist commit a crime in a manner that will allow the analyst to classify him clearly or simply as one of the types set forth below. More commonly, the investigator will be confronted with a mixture of types" (p. 176). When faced with this type of behavioral complexity, Hazelwood advocates that the analyst use "common sense" in assessing the various components of the rapist's behavior.

b. MTC:3 System

Over the past five years, a second framework has been expanded and operationalized by Prentky, Cohen, and Seghorn (1985) at the Massachusetts Treatment Center. Drawing upon earlier work by Seghorn and Cohen (1980), Prentky et al. developed a three-tiered decision tree structure that attempted to quantify the three primary components of a rape: the meaning of the aggression in the offense (instrumental vs. expressive); the meaning of the sexuality in the offense (compensatory, exploitative, displaced anger, or sadistic); and the general impulsivity of the offender (low or high). Utilizing data derived from 201 sexual offenders either committed to or released from the Massachusetts Treatment Center, Prentky et al. used multivariate path and cluster analysis to assess the reliability and validity of the taxonomy. The authors concluded that their three major distinctions had "some discriminatory power," but suggested that the taxonomy be further refined to examine life-style impulsivity both in childhood and adulthood; to incorporate the concept of social competence; to create a separate independent axis that focused on sexual

offenses; to replace the aggression axis with the degree of physical injury sustained by the victim; and to further refine the Displaced Anger and Sadistic categories to include both low and high degrees of physical injury. Based upon these refinements, the MTC:3 system currently recognizes nine types of rapist: Opportunistic, high social competence; Opportunistic, low social competence; Pervasively Angry; Overt Sadistic; Muted Sadistic; Non-Sadistic, Sexual, high social competence; Non-Sadistic, Sexual, low social competence; Vindictive, low social competence; and Vindictive, high social competence. (See Figure 1 on next page.)

The types are arranged in this chart so that each type is proximate to the type that is most similar to it in terms of defining variables or characteristics. As indicated, there are four summary categories, Opportunistic, Pervasively Angry, Sexual, and Vindictive, each of which reflects the major motivational theme of the subtypes under it.

Knight and Prentky (1990) described the Opportunistic rape as being impulsive, unplanned, predatory, and situationally determined. The offense contains little gratuitous violence and minimal levels of anger, appearing instead to be organized around the desire for immediate sexual gratification. Devoid of a fantasy substrate, the sexual assault appears to be part of a general pattern of unsocialized behavior and problems with impulse control. The Opportunistic rapist shows little concern for the victim and is intent upon the gratification of his own desires.

According to Knight and Prentky, the Pervasively Angry rapist is motivated by a sense of "undifferentiated anger." Aggression permeates their assaults and violence occurs both gratuitously and in response to victim resistance. Knight and Prentky observed that these offenders are characterized by lifetime difficulties in controlling their aggression. Their attacks on women, while sexual in nature, seem to embody little fantasy material and minimal levels of

MIC:R3

PRIMARY MOTIVATION

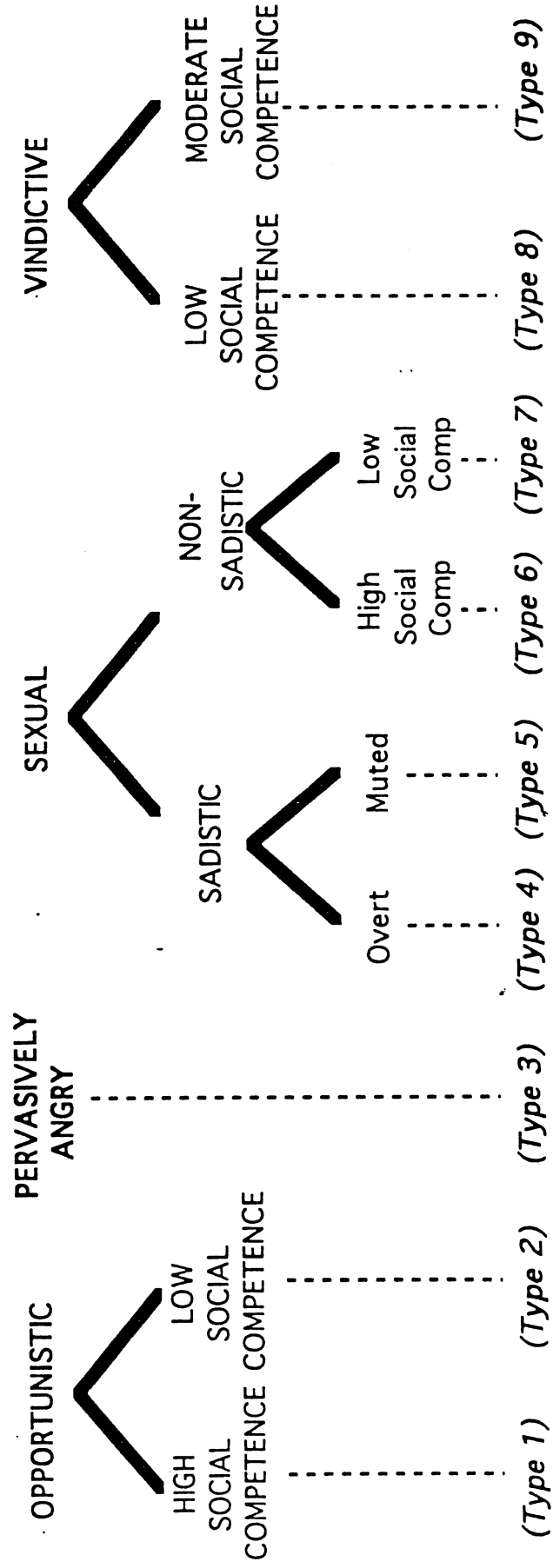


FIGURE COMPILED BY KNIGHT AND PRENTKY

sexualized aggression. Rather than being sexually motivated, the rape appears to embody a pervasive sense of rage that is directed against both men and women.

The Sexualized rapist (i.e., the Overt Sadistic, Muted Sadistic, and the Non-Sadistic types), is motivated by "either protracted sexual or sadistic fantasies or preoccupations that motivate their sexual assaults and influence the way in which their offenses are executed" (p. 45). The organizing themes reflect enduring patterns of sexual preoccupation and the fusion of sexual and aggressive impulses. Knight and Prentky asserted that the overtly sadistic rape is characterized by damaging physical behavior, and the muted sadistic rape by a more symbolic or covert expression of these same impulses. In distinguishing these two types, Knight and Prentky observed that the Overtly Sadistic rapists appear to be "angry, belligerent rapists, who, except for their sadism and the greater planning of their sexual assaults, look very similar to the Pervasively Angry types." In contrast, the "Muted Sadistic types, except for their sadistic fantasies and their slightly higher lifestyle impulsivity, resemble the High Social Competence, Non-sadistic types" (p. 45). Knight and Prentky reported that the assaults of the Non-Sadistic Sexual types are also determined by the perpetrator's fantasy life, but that these fantasies embody more benign perceptions and impressions of sexual and masculine inadequacy. They suggested, in fact, that the Non-Sadistic Sexual rapist manifests the least aggression and, when faced with victim resistance, is the most likely to flee.

Knight and Prentky (1987) described the Vindictive rapist as being motivated by an anger directed exclusively toward women. The rape embodies significant levels of aggression, at times culminating in murder, and reflects apparent efforts to degrade and humiliate the victim. The authors assert that the Vindictive rapist demonstrates little undifferentiated anger or eroticized

gression and, unlike the Pervasively Angry and Overt Sadistic rapist, is not characterized by a pattern of lifestyle impulsivity.

In examining these various sub-types of rapists, Knight and Prentky underscored the importance of both inductive and deductive strategies in theory-building and contextualized their efforts as part of evolving research that attempts to "particularize systems within relatively circumscribed behavioral domains" (p. 48). They observed that these efforts can result in greater precision and homogeneity in understanding offenders, although application to other offense domains can prove difficult, and are best enriched by on-going attempts to relate typologies that classify various types of sexual offenders.

c. The Grubin Typology

Drawing upon Prentky's earlier work, Grubin (1991) used cluster analysis to classify 85 offenders charged with rape. The natures of the rapes included serial rape, group rape, rape of an elderly victim, and rape-murder. Five dimensions of behavior were used in developing the classification system: 1) substance abuse (i.e., the diagnosis of alcohol or drug dependence); 2) life management skills (i.e., the ability to maintain a relationship, the quality of the relationships, employment record, and residential consistency); 3) unsocialized behavior (i.e., the presence of a childhood conduct disorder, life-time history of aggression, and number of criminal convictions); 4) impulsivity in offense (i.e., degree of premeditation); and 5) sexual aggression (i.e., past conviction for sexual violence toward a partner).

Grubin developed a ten-cluster solution with four of the clusters encompassing two-thirds the sample. The first of these, the "Impulsive Addictive" rapist (n=26), was characterized by a high level of substance abuse and moderate life management skills. Antisocial behavior was

common. Eighty percent had convictions for past violence and two thirds reported being violent when "they lost their temper" (p. 14). The sexual offenses manifested by this group involved little planning and often occurred in conjunction with theft. In describing this group, Grubin suggested "the offending of these men can perhaps be seen as that of men who do not consider the consequences of their actions, whether that be to follow an impulse to drink, use drugs, to hit out when frustrated, or to act on sexual desires when circumstances allow it . . ." (p. 14).

The Unsocialized Rapist (n=14) evidenced no problems with substance abuse, but was characterized by high levels of unsocialized behavior. All of the group had past criminal histories, although none had acted out violently against a partner. This cluster also had the largest proportion of group rapists. They reported their sex drive to be high, and one-third were rated as being "preoccupied with sex." They reported conservative attitudes toward women. In terms of offense behavior, the "Unsocialized Rapist" was found to perpetrate unplanned rapes devoid of any attempt to humiliate the victim. Commenting on this group, Grubin observed that they are very similar to the previous group, although their offending seems to be "part of a pattern of general antisocial behavior rather than simply of poor internal control" (p. 15).

The rapists assigned to the "Violent Deviant" (n=23) group were characterized by a low level of substance abuse, few indices of antisocial behavior, good life management skills, and a criminal history of sexual rather than violent crimes. They were described as being "more organized" and "stable" than the other rapists and their modus operandi was termed "unique" because of the degree of planning involved and the absence of burglary as a primary motive. Grubin reported that men in this group were more often diagnosed as suffering from a paraphilic disorder, of having been sexually abused as children, and of having undergone, at some time in the

ast, treatment for sexual problems. He explained that these rapists were termed violent not because of their criminal history, but because of their use of gratuitous violence during their rapes. Conversely, few reported having violent tempers or experiencing difficulty in controlling their tempers in other contexts. Observing that the "Violent Deviant" rapists were responsible for the largest number of sexual offenses, Grubin likened this "group of calculating and organized men to true sex offenders" and asserted that they would "offend in any culture" (p. 16).

Finally, Grubin reported that the Overcontrolled rapists (n=29) were characterized by a low incidence of substance abuse, little history of unsocialized behavior, good life management skills, and the absence of violence against a partner. Their offenses were unplanned and most frequently involved murder. They reported very conservative general attitudes, little or no difficulty in controlling their sexual behavior, and little sexual deviance. Grubin suggested that the offending in this group seem[s] to be explained by a sudden and temporary loss of control in "what are perhaps overcontrolled personalities" (p. 16).

Commenting on the significance of his research, Grubin emphasized the need to "get away from thinking about sex offenders, or rapists, as a single group about which universal statements can be made" (p. 17). Not unlike Knight and Prentky, he emphasized the importance of making distinctions based upon the behavior and motivation of the offender and highlighted the relevance of these distinctions to the accurate assessment of risk, appropriate treatment decision-making, and viable program management.

2. *CRIME SCENE TAXONOMIES*

In contrast to Grubin's efforts to develop offender-based classifications of rapist type, other British researchers have sought to develop classifications of rape based upon crime scene

information alone. Drawing upon the principles of "profiling" delineated by Hazelwood and Burgess (1987), Canter and Heritage (1990) sought to identify empirical patterns that associate certain types of rape behavior with certain types of rapists. As they explained, the "central quest" lay in the "identification of associations between aspects of the offender's characteristics and offense behavior" (p. 190).

In developing their system of analysis, Canter and Heritage identified 33 rape behaviors that were consistently referenced in the victims' accounts of 66 sexual assaults perpetrated by 27 offenders. These dimensions of behavior included variables such as the use of a "confidence" approach, the presence of a surprise attack, the use of blindfolds and bindings, the use of complimentary language, the disturbance of victim clothing, use of a weapon, the use of disguises, vaginal penetration, and anal penetration. These variables were coded as dichotomous variables and were analyzed using facet analysis, a multivariable form of analysis designed to display the spatial contiguity between variables as a measure of their co-occurrence in actual incidents. The analysis suggested a core dynamic of rape made up of five variables (i.e., an impersonal encounter with a victim which involved a surprise attack, disturbances of the victim's clothing, and vaginal intercourse) as well as five additional related areas of emphasis (i.e., attempted intimacy with the victim, sexual behavior, overt violence and aggression, impersonal interaction, and criminal behavior and intent). Each of these components, made up of four to seven variables, occurred clock-wise around the core aspect, visually clustering groups of behaviors most likely to occur in the same offense.

In discussing their analyses, Canter and Heritage observed that the actions on the top half of their spatially determined matrix cover a "variety of sexual activities and the aggressive acts"

(p. 202). Linking these behaviors with Prentky et al.'s (1985) recognition of expressive aggression, they suggested that the factors on the lower half of the matrix involve more instrumental aggression, such as actions "that are very impersonal, criminally oriented" (p. 202). Commenting on the heuristic value of the paradigm, the authors suggested that it may be used in future research to examine how an offender develops over a series of offenses, to determine whether two or more offenses are committed by the same offender, and to correlate crime scene factors with different sets of offender characteristics.

Drawing broadly from the work done by the FBI, Davies (1992) described a "three aspect model" useful in the identification of sexual assaults perpetrated by a single offender. Davies, a forensic biologist, began the development of her behavioral system of classification after discovering that "in a significant percentage of rape cases there is little or no semen, so DNA testing will be either not possible or unsuccessful" (p. 173).

Davies delineated three components of rape: 1) the modus operandi; 2) elements of the offender's "sexual and personal gratification;" and 3) identification of "attitudes" and perceptions regarding "intimacy." The "modus operandi" is comprised of the behaviors utilized by the rapist in planning the offense, controlling the victim, protecting his identity, avoiding arrest, and, in some cases, procuring valuables from the victim. The "sexual and personal gratification" component embodies the sexual dynamics of the rape, (i.e., the sexual problems manifested; the sexual acts performed, attempted, or mentioned; the sexual verbal themes expressed by the offender; practices associated with sexual and personal gratification; indications of paraphilias; and gratuitous violence and verbal cruelty). The "attitude and intimacy" component is relational in nature and includes violence in response to resistance, abuse and swearing, the use of language

to control the victim, curiosity, self-disclosure, compliments, ingratiating behavior, excuses and apologies, expressions of affection expressed or required, and attempts to prolong the relationship.

In discussing these three organizing themes, Davies suggested that they be used as a guide for investigators in procuring victim statements and highlighted, in this context, the importance of recording all remembered conversation "exactly" and "documenting meticulously the victim's thoughts, coping strategies and acts of resistance" (p. 178). Davies also addressed the consistency of these behaviors over successive offenses by the same offender and maintained that the modus operandi evolves over time and can be used to assess the offender's degree of criminal experience. According to Davies, behaviors reflective of the rapist's sexual preferences remain more consistent and can be used to link offenses by the same offender. In particular, Davies asserted that "the more disordered, deviant and violent offenders will be much more consistent and exhibit very distinctive peculiarities" (p. 191). Highlighting the potential variability of human behavior, Davies emphasized the need for further research designed to examine the degree of consistency manifested in these behaviors, to ascertain their relative frequency among offender populations, and to address possible relationships between crime scene behavior and offender characteristics.

D. COGNITIVE MAPPING OF CRIME

Brantingham and Brantingham (1984) were the first to develop the concepts of "cognitive mapping" and "opportunity space" as they apply to criminal behavior. Citing the work of Tolman (1948), they defined cognitive mapping as "the process by which individuals learn about, remember and use knowledge about an area" (p. 358). They observed that an individual's

cognitive map has many dimensions (i.e., color, sounds, and symbols) and reflects the individual's (or in this particular case, the offender's) "overall geographic . . . knowledge of an area." In defining the concept of "opportunity space," they suggested that potential crime victims are not distributed uniformly in space. Rather, it is "the interaction of the location of potential targets and the perpetrator's awareness or activity space that culminates in particular patterns of crime occurrence" (p. 362). From this perspective, Brantingham and Brantingham emphasized that crime occurrence in a city is highly patterned and can be understood only if the "subjective environment" of the perpetrator is appreciated. They emphasized "potential criminals do not search through a whole city for targets, they look for targets within their more restricted awareness space" (p. 365).

Coucelis, Golledge, Gale, and Tobler (1987) examined the Anchor Point hypothesis of cognitive space and the role of these points in organizing spatial cognitive information and structuring mental maps. They discussed the potential significance of "anchor points" as they relate to: properties intrinsic to the object (i.e., person) such as perceptual or symbolic salience; relational-spatial properties, such as location within daily activity space; and relational non-spatial properties, such as actual or potential significance in a person's life. Based upon these characteristics, Coucelis et al. examined three potential relationships between "anchor points" and the definition of individuals' mental mapping. They termed these the Tectonic Plates hypothesis, the Magnifying Glass hypothesis, and the Magnet hypothesis. They reported that the examination of the mental maps of 57 subjects in Goleta, California resulted in a variety of analytic and conceptual problems, but generally resulted in "the preliminary encouraging evidence in favor of the tectonic plates hypothesis . . ." (p. 117). The authors noted that this hypothesis suggests that

major anchor points define associated regions of the mental map and that "cues associated with a particular anchor point will be displaced (distorted) in the same direction as the anchor point itself, so that the whole corresponding region will 'move' in piece, relative to the regions defined by the other anchor points" (p. 107).

In a final report submitted to the U.S. Department of Justice, Rengert and Wasilchick (1990) fit six statistical models to the spatial patterns of individual burglars. Developing the models based in part upon the work of Huff (1984) and Coucelis et al. (1987), they commented upon the ubiquitousness of criminal opportunities, a "distance bias" which motivates a burglar to stay close to important "anchor points," and a "directional preference," wherein a burglar tends to operate in "more familiar rather than less familiar areas" (p. 50). Taking into consideration these factors as well as the behavior of the drug-free and drug-dependent burglar, they proposed six resultant patterns of offending: the Home Uniform pattern, the Drug Uniform pattern, the Home Logit model, the Drug Logit model, the Bimodal, and the Teardrop pattern. In examining the patterning of burglaries perpetrated by a small sample of Philadelphia burglars, they found that one or two models generally resulted in the most correct predictions for each burglar, suggesting that burglars tend to follow replicable decision-rules as they choreograph offenses.

E. GEOGRAPHY OF RAPE

Journey-to-crime studies indicate that the distances travelled by offenders to commit offenses vary according to demographic characteristics of the offender such as age (Nichols, 1980); sex (Rengert, 1975); and race (Pettiway, 1980). The nature of the crime itself also influences this distance factor. Pyle (1974) found that rapists in Akron, Ohio travelled shorter distances than did robbers and burglars, a trend confirmed a few years later by Rhodes and Conly

1981) in Washington, D.C. These authors also found that rape tended to occur in areas characterized by construction, urban renewal, and temporary lodgings.

In a study that looked specifically at rapes over a four year period, LeBeau (1985) found that serial offenders tended to "use repeatedly the same geographic and ecological space." He reported that this geographically specific pattern of offending contributed significantly to changes in the numerical, geographical, and ecological descriptions of rape from one year to the next in various areas throughout San Diego.

In subsequent research, LeBeau (1987a) attempted to differentiate between single, serial, and open (unapprehended) rapists in terms of: 1) the number of locations or "rape scenes" that characterized their offenses; 2) the distance travelled jointly by the rapist and his victim; 3) the average distance between the rapist's residence and the crime scene; and 4) the average distances between crime scenes for the same offender. In his analyses, LeBeau found that single rapists tended to rape non-strangers more often than serial and open offenders, to be involved in up to one different scene with a single victim, and were more likely to choreograph assaults in which the victim travelled with them to different locations. LeBeau hypothesized that each of these characteristics ensured that more "tangible information" about the perpetrator would be obtained from the victim, with this information subsequently contributing to their identification and apprehension. He commented that "this maximization of spatial distance is a potential source of tangible information that leads to an apprehension" (p. 326). LeBeau also found that while serial rapists tended to vary in the distance that they travelled from home in order to rape, they consistently seemed to restrict their attacks to within one-half mile of their previous attacks.

Using the same data set, LeBeau (1987b) used centrography to describe and measure the

spatial and temporal distribution of the San Diego rapes as classified in the earlier analysis (i.e., single, serial, and open or unapprehended). Using the centrophraphic measures of mean center, standard distance, velocity, acceleration, and momentum, he demonstrated that "different classes of offenders have relatively distinctive spatial distributions" and "changes in the spatial distributions of offender classes, through time, are not uniform" (p. 125). Specifically, he found that while the unapprehended offenders showed great spatial stability, the serial offenders appeared "most mobile" and demonstrated a distinct northwest path from the Central Business District. The single-offenders were described by LeBeau as being "an enigma." As he explained, between 1971 and 1974, changes in the mean centers, the mass, the dispersion, the acceleration, and the areas of the ellipses were minimal. However, in 1975, the mean center changed direction to a more northerly and westerly position, doubled in mass (i.e., 44 to 90), doubled in terms of standard distance (2.9 to 6.2 miles), doubled in terms of momentum (136 to 275.9 rape miles), and tripled in terms of the standard deviational ellipse (11.29 to 40.72 square miles). Terming these changes a "spatial explosion," LeBeau hypothesized that a revised rape law that went into effect on January 1, 1975 may have enhanced the reporting of single rapes, hence explaining the onset of such rapid geographical change.

Five years later, LeBeau (1993) presented four case studies from the same sample that looked at the "spatial-temporal analysis of serial rapists." Focusing on the patterning of offenses in terms of both their geographical patterning and their temporal sequencing, he suggested that the choice of crime location evolved out of four distinct factors: spatial knowledge, time, distance, and type of area. In reviewing his four cases, LeBeau descriptively demonstrated the relative importance of these factors in producing the different spatial patterns created by four

rial rapists of different ages and ethnic background. In so doing, he identified a pattern by which each of the rapists eventually backtracked to the area of an earlier offense. Hypothesizing that this tendency may derive from time pressures, rewarding memories, or the exhaustion of spatial knowledge, he emphasized the need for further study of this pattern in order to facilitate the investigation of unapprehended offenders.

Drawing upon the work of Brantingham and Brantingham (1981) and Rengert and Asilchick (1985), Canter and Larkin (1992) explored the spatial activity of 45 British offenders charged with two or more sexual offenses. They hypothesized that two general models might be used to describe the relationship between an offender's area of offending and his home base. The "Commuter Model" assumes that the offender travels away from his home in order to perpetrate his crimes and that his "criminal range" is independent of and an appreciable distance from his home base. The "Marauder Model" assumes a closer relationship between an offender's home and his criminal range and hypothesizes that the offender moves out in a random pattern from his home base in order to commit crimes.

In examining the spatial activity of 45 sexual offenders responsible for a total of 251 sexual offenses, Canter and Larkin found that 91 percent of the offenders did, in fact, have their crimes located within a precise, circular region and that 87 percent of the offenders lived within this circular area. In only six cases did the offender live outside of this area that contained all of his crimes. In two of these instances, the offenses involved picking up a victim in a motor vehicle and transporting her to the site of the assault. In two others, the targeting involved a specific street that lay a considerable distance from the offender's home neighborhood. According to Canter and Larkin, further analysis revealed that the offenders maintained a "safe area" of at least

.61 miles around their home, with the average minimum distance from crime to home being 1.53 miles. In discussing these findings, Canter and Larkin (1993) suggested that "the clarity of these mathematical results is a little short of remarkable for what is regarded as an impetuous, emotional violent crime. . . " (p. 18). They emphasized that "whatever the rapist's experience of committing the crime, there is a basis to his choice of location that can be modeled from relatively logical environmental psychology principles" (p. 18).

In a subsequent set of analyses, Canter and Gregory (in press) examined certain offender and offense characteristics to see if they reduced the area covered by their circle hypothesis. Examining the 251 offenses referenced above, they found that white offenders travelled further than black offenders (i.e., in 80 percent of the assaults, black offenders were found to offend within one half mile of their residence, whereas only 19 percent of the white offenders were found to offend within one half mile of their residences), that offenders who raped on the weekend travelled 2.5 times further than those who raped during the week, and that those offenders who raped out of doors travelled 2.7 times further than those who raped indoors. Canter and Gregory also reported trends in which older offenders travel further than younger offenders. Integrating these findings into a rudimentary expert system, Canter and Gregory were able to reduce the area covered by the Marauder Model from 180 square miles to ten square miles and to classify offenders into the predicted area with 82 percent accuracy. The predicted area was determined by matching each offender according to four characteristics (i.e., age, race, inside/outside, and weekend/weekday) and determining the maximum and minimum distance to the first offense manifested by each of the linked offenders. The authors chose the distance to the first offense as their defining distance because of its perceived psychological and investigatory significance (i.e., it

was thought to be the offense most directly linked to the offender's home base and constituted the location that could be most effectively used by law enforcement in locating and apprehending serial, sexual offenders).

Most recently, Rossmo (1993) applied similar principles to the development of "multivariate spatial" analysis of violent crime. Focusing primarily on serial murder, arson, and rape, he used crime locations to predict "the most probable areas in which the murderer's residence or workplace might be found" (p. 12). His Criminal Geographical Targeting Model derives from a four step process: 1) a delineation of the offender's hunting area calculated from the offender's crime locations; 2) calculation of Manhattan distances from every point on the map to each crime location; 3) the use of the Manhattan distance in a function that assigns each point a value based upon a distance-decay assessment of whether or not the point lies inside a buffer safety zone; and 4) the addition of these multiple values to create a score for each map point wherein the higher the resultant score, the greater the probability that the point contains the offender's home or workplace. Rossmo explained that the derivation of these values creates a three-dimensional probability surface that can be overlaid on a city map in order to direct investigatory efforts as they relate to suspect prioritization, patrol saturation, alternative information system access (e.g., postal code access), and Task Force integration. In discussing the applicability of his Criminal Geographical Targeting system, Rossmo acknowledged that the predictive equation requires six points in order to obtain an acceptable "hit" rate and is best utilized in conjunction with the investigative expertise of experienced law enforcement officers. Rossmo addressed the relevance of environmental criminology to these pursuits and observed that "the offender and the victim have to encounter each other at some point in time and space, and

these points form spatial and temporal patterns" (p. 32).

Davies and Dale (1995) summarized literature relevant to the crime choices manifested by criminals as they negotiate both singular and serial crime. Drawing from selective literature in the fields of criminology, geography, regional planning, cognitive geography, and environmental psychology, they discussed the conceptual relevance of distances, space, time and place, activity patterns, cognitive mapping, crime distribution models, urban crime distributions, target selection models, and the distribution of sexual offenses by a single offender. Empirically, they reported on a preliminary study of the offense patternings of eighty rapists. The authors observed that almost a quarter of the offenders had no fixed address and moved either voluntarily or through incarceration during their rape sequence. They referenced Farrington and Lambert's (1992) observations regarding the high mobility of burglars and violent repeat offenders and suggested that "some degree of transience is fairly typical of a proportion of sexual offenders" (p. 13). Regarding the distance travelled by the rapist, Davies and Dale reported that 29 percent of 315 rapes occurred within a mile of the rapist's residence, 53 percent within two miles of the rapist's residence, and 77 percent within five miles of the rapist's residence. The authors observed that, in several instances, the rape also occurred very close to the rapist's residence, "in the same block of flats, adjacent flats, the same street, and adjacent streets," thereby offering no support for the idea of a "safety zone" as theorized by Brantingham and Brantingham (1981) and identified by Canter and Larkin (1993) and Rossmo (1993). Davies and Dale also reported that in only 40 percent of their cases was the last rape further from the perpetrator's home than the first rape. They examined these 20 cases and suggested that this increase derived from three observable factors (i.e., opportunism, displacement due to police activity and/or media activity, and a change of

sidence during the series). Observing that 60 percent of their cases did not show any increase in distance over time, they concluded that there is also little support for Rossmo's assertion that the journey to crime increases as the criminal career of the offender matures.

Davies and Dale further observed that while the majority of their sample raped close to home, 18 (36 percent) raped ten or more miles from home. They noted that some of these offenders raped while on holidays, while others appeared to be going in search of a particular type of victim: "Presumably any distinctive requirement in victim type may cause an offender to travel longer than average distances; the more obvious required categories being prostitutes, the elderly, the affluent, and the young" (p.15). The authors observed that the remaining long-distance rapes were perpetrated by career criminals who made their living from burglary or robbery and who used vehicles in their offense behavior. Davies and Dale reported that the series of offenses perpetrated by an offender was also usually proximate to other significant locations for that particular offender. They identified present and past residences, school and work locations, and the sites of other non-sexual crimes as significant foci in the designation of sexual offending areas. Finally, the authors identified a subjective sense of well-being associated with a particular area, the importance of a specific location to an offender's internal sexual fantasy, and a preexistent pattern of prowling and associated paraphilic behaviors as being relevant to the decision-making that determines each offender's choice of offense location. In concluding their paper, Davies and Dale suggested that their findings "substantiate the hypothesis that people have internal representations of their world in which significant people and places are very influential, as has been revealed in the offense patterns of the serial offender" (p. 18).

F. THE CRIMINAL HISTORY OF SERIAL RAPISTS

Turner and Ratledge (1982) sought to quantify an offender's criminal history through the development of a composite index of criminality which summarizes the criminal history as a single numeric value. In developing the composite value, the authors identified five dimensions relevant to the relative seriousness of the cumulative history: 1) length of the record; 2) seriousness of each offense listed in the record; 3) dispositional information regarding each offense; 4) patterns of offending; and 5) time between and since the last reported offense. Using these five dimensions, the authors simulated 6,778 criminal histories which were assessed by 226 prosecuting attorneys in Brooklyn, New York. Extrapolating from these ratings, Turner and Ratledge formulated decision-rules that numerically translated each criminal history into a value that equalled the weighting assigned to it by the prosecuting attorneys. From these efforts, the authors concluded that "it is possible to numerically evaluate a criminal history," but also acknowledged the need to integrate a spacing or decay function into the equation, address instances of multiple charges for a single offense, and identify the presence of "attempted" crimes in both the simulated and real criminal histories.

From a somewhat more clinical perspective, Abel, Becker, Mittelman, Cunningham-Rathner, Rouleau, and Murphy (1983) used structured interviews to study 561 sex offenders who had voluntarily presented for treatment. They identified 126 rapists who reported a total of 900 rapes over the course of their sexual offending, equalling a mean of 7.2 rapes per offender. The authors, however, also reported a median of one rape per offender, suggesting that a minority of the rapists are responsible for a majority of the crimes.

Grubin and Gunn (1990) studied the criminal history of 142 single and serial rapists. They

and that 86 percent of the offenders had a criminal history, with 50 percent of them being comprised of four or more convictions. Twenty-nine percent of the sample received their first sentence before the age of twenty. Grubin and Gunn observed that the majority of the past offenses involved some type of theft, although half of the rapists also had convictions for assaultive behavior. The violence was generally directed toward men, although nine percent of the men had convictions for violent offenses against female partners. In analyzing these trends, Grubin and Gunn suggested that they reflect a "pattern of increasing criminality in rapists" (p. 18). They referenced Gibbins, Way, and Soothill (1977), who reported that in 1961, 55 percent of the rapists had a past criminal record with 11 percent convictions for violence. In contrast, Lloyd and Falmesley (1989) reported that in 1973, 70 percent of rapists had criminal histories (26 percent convictions for violent offenses) and in 1985, 80 percent of rapists had criminal histories (42 percent convictions for violent crime), many of which involved histories of ten or more convictions.

Grubin and Gunn indicated that a past history of sexual offending was also common among the single and serial rapists. Thirty percent of the sample had convictions for some type of sexual offense and ten percent had past convictions for rape. Interestingly, six percent of the sample had been acquitted of a serious sexual crime despite a history of sexual offending. The authors suggested that these types of sexual crimes are on the increase and that "the higher incidence of past sexual offending found in more recent samples may indicate an increase in a subgroup of men who are 'true sex offenders' either because of sexual deviance or because of an uncontrolled high sex drive" (p. 21).

When comparing the criminal histories of single and serial rapists, Grubin and Gunn found

that the sexual offending history of the two groups was different. Forty-six percent of the serial rapists had convictions for past sexual offenses, while only 25 percent of the single rapists had been charged with a past sexual offense. The majority of offenses for the serial offenders involved some type of indecent exposure or indecent assault.

Weinrott and Saylor (1991) utilized a computer-administered interview to study the self-reports of past criminal behavior of 99 institutionalized sex offenders, 37 of whom had been charged with rape, attempted rape, or forcible sodomy. They found that their sample of "official" rapists had been formally charged with a mean of 1.8 rapes but reported involvement in 433 rapes or a mean of 11.7 rapes per offender. The authors noted that these same offenders reported 11,000 non-sexual offenses in the year preceding their incarceration. This total represented an average of 304.8 offenses per offender per year, or approximately a crime a day for each of the incarcerated rapists. The nature of the non-sexual offenses varied and included on the average 10.5 different types of offenses, including burglary, robbery, public intoxication, drug sales, arson, auto theft, and aggravated assault. Weinrott and Saylor observed that nearly half of the rapists also reported assaulting a partner or spouse while approximately one-quarter reported hitting a child. In reviewing their findings, the authors concluded that both the rapists and child molesters were "extraordinarily antisocial during the year prior to confinement" and suggested that much of the criminal behavior was unrelated to the sexual crimes for which they were finally incarcerated. They used these findings to argue against criminal specialization and suggested that self-report studies indicate an "iceberg of undocumented offenses beneath the tip of official records" (p. 298).

Van Den Eshof, de Kleuver, Ho Tham, and Zwiers (in press) studied the criminal histories of 81 convicted rapists in an attempt to link criminal antecedents with particular crime

characteristics. They found that, on average, the rapists had 10 prior criminal convictions, 70 percent had been convicted of property crimes, and 40 percent of a prior sexual offense. Interestingly, these rates were no different than those found with a sample of 204 Dutch bank robbers. As emphasized by the authors, "it was the similarity in career patterns that was most striking" (p. 13). Turning to the relationship between specific crime scene behaviors and the existence of a particular type of criminal history, Van Den Eshof et al. found that those who used excessive force when committing a rape more often had a history of other violent crimes than did those who had not used excessive force. They also found that the use of substantial force was significantly related to the presence of opium-related offenses and alcohol-related traffic offenses, although not to the presence of breaking and entering, property, or sexual crimes. In these analyses, the presence of a large number of precautions taken was also related to the length of the criminal history and to the occurrence of indoor rapes with the presence of prior convictions for breaking and entering and burglary. In commenting on these findings, Van Den Eshof et al. observed that "until recently, much of the criminological research into criminal antecedents has been too general and descriptive in nature. If we can develop the skills to examine the relationship between specific characteristics of certain crimes and the characteristics of the perpetrator, however, this type of research could be extremely productive" (p. 15).

CHAPTER II

METHODOLOGY

PURPOSE

The study was designed to help law enforcement in their efforts to identify and apprehend sexual offenders. Because of this focus, data collection focused only on the crime scene information that is available to the police prior to the arrest of a serial offender. The information is distilled from statements provided to the police by the victim of a sexual assault.

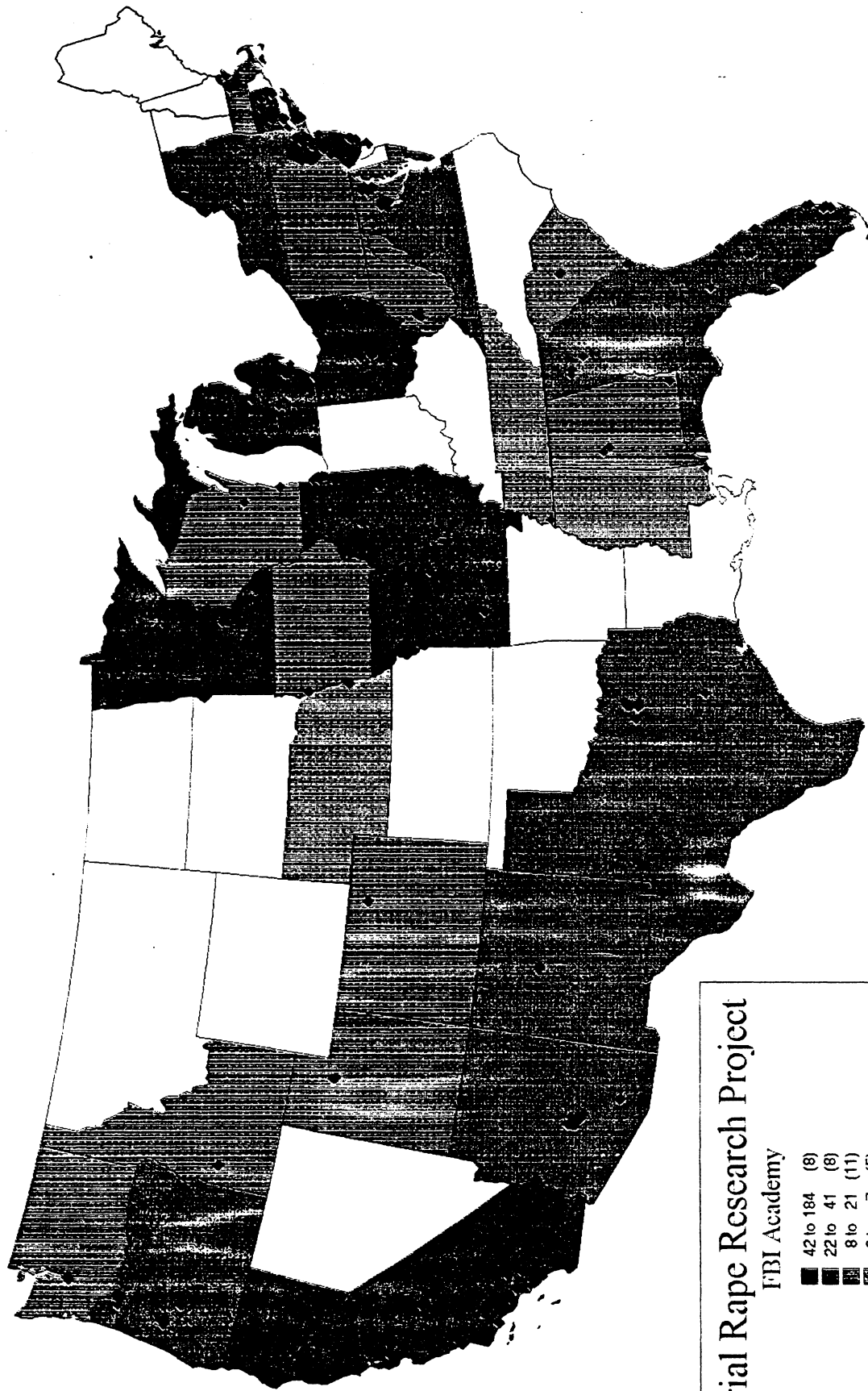
DATA COLLECTION

The study utilizes one primary data set (Data Set I--Victim Statement Data Set (VSDS)), and two secondary data sets (Data Set II--Offender Data Set: Victim Statement (OIDS1) and Offender Interview (OIDS2)) being used periodically to explore and confirm some of the concepts and analyses being explored on the primary data set. Data Set I consists of 108 serial rape cases which were collected from police departments across the country. These cases were acquired through the course "Violence in America," taught four times a year at the FBI Academy in Quantico, Virginia. The course is part of the FBI's eleven-week National Academy program, which is offered to middle-management police from across the country. As part of their participation in the course, the police officers were given the option of either writing a term paper or submitting a solved serial rape case from the files of their own departments or those of another department. They were directed to include in their case summaries: 1) a detailed victim statement for each rape; 2) the police report detailing the series of crimes; and 3) a map showing the location of each rape as well as designations of the home and place of employment of the

rapist. As indicated, this resulted in a total of 108 cases of serial rapists. The total number of rapes in each case ranged from 2 to 17, with the mean number of rapes equal to 5.2 (S.D. = 3.5). It was understood that the cases were submitted by local law enforcement agencies to the FBI, itself a law enforcement agency, for the purpose of research beneficial to law enforcement, and that the FBI would maintain the confidentiality of the information. (See next page for geographical description of cases submitted, courtesy Keith Harries, University of Maryland.)

Computerized criminal histories were obtained for the majority of offenders in this sample. The criminal histories involved multi-state searches and, as such, represent the majority of adult crimes on record for which the rapists had been arrested. These histories were coded by one of the authors (Warren) on the Steadman Scale (Appendix E) as to the seriousness of each offense and on the Turner-Ratlidge Scale (Appendix F) as to seriousness of the entire history.

The Turner-Ratlidge Scale had to be modified for this purpose. The original scale was created using computer-generated criminal histories which were artificially robust in terms of the dispositional data reported. The current study utilized real criminal histories and was consequently plagued with problems of inadequate dispositional information both in terms of the final conviction and the sentence imposed and served. In order to overcome this difficulty, charges rather than convictions were used in calculating the scale's index total. This inflated the index values when compared to those reported by Turner and Ratledge. The index total for each rapist, however, appeared to reliably reflect the relative seriousness of each criminal history and hence was included in the analyses along with the various offense totals (i.e., total violent crimes, total potentially violent crimes, total other crimes against persons, total sex crimes, total property crimes, total drug crimes, total minor charges, and total charges).



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- 42 to 184 (8)
- 22 to 41 (8)
- 8 to 21 (11)
- 3 to 7 (5)
- All others (19)

Data Set II (Offender Data Set: OIDS1 and 2) was collected with a different purpose and in connection with an earlier study. It has been described in a number of publications (e.g., Hazelwood and Warren, 1989a and 1989b; Hazelwood et al., 1989; and Warren et al., 1991). The principal data described in these publications is derived from interviews with 41 incarcerated serial rapists, each of whom had committed at least 10 rapes prior to his apprehension (OIDS2). The interviews were semi-structured, open ended, and the duration ranged from 4.5 to 12.5 hours. The protocol used in the interviews was developed as a collaborative effort between the FBI's National Center for the Analysis of Violent Crime, the University of Pennsylvania School of Nursing, and Boston City Hospital. It included sections on the rapist's developmental, educational, employment, military, psychiatric, sexual, and criminal history, as well as an in-depth review of the rapist's crime scene behavior, manner of victim selection, post-offense behavior, and motives for rape.

Two sets of rape descriptions were assembled from the Offender Data Set. First, a set of rape descriptions was taken from the offender interviews described above. They were the offender's account of his first, middle, and last rapes. These rapes were one of the two sets analyzed by Warren et al. (1991) in their discriminant analyses of rape type and Increase status using the behavioral scales described below. Second, as part of the current study, victim statements generated from offenses perpetrated by this set of offenders were assembled by canvassing the police departments of jurisdictions in which the cases had originally occurred, resulting in 149 victim statements representing 24 rapist cases (OIDS 1). The number of victim statements that could be obtained ranged from one to 15 per case. Only 24 of the original 41 cases could be tracked in this manner, as many of the cases were now quite old and complete case

ords were no longer accessible.

MEASURES

1. *DEPENDENT VARIABLES*

The major dependent variables in the current study quantified the geographic and temporal terms of rapes displayed by each of the 108 serial rapists. Each of these series of rapes perpetrated by a single offender is referred to as a "case." These "cases" contain only completed cases that had been reported to the local police.

a. *Geographical Coding and Variable Construction*

As originally conceived and budgeted, the project did not include any computerized mapping. The intention was to do all the geographical analyses by hand. As time progressed, however, it became clear that computerized coding of the rape locations would significantly improve the precision of the geographic data, expand the types of distances and areas that could be ascertained, and facilitate analysis and display of the data. Contact was subsequently made with the National Center for Missing and Exploited Children (NCMEC) which geocoded the data using NCMEC's digitized maps of the United States.

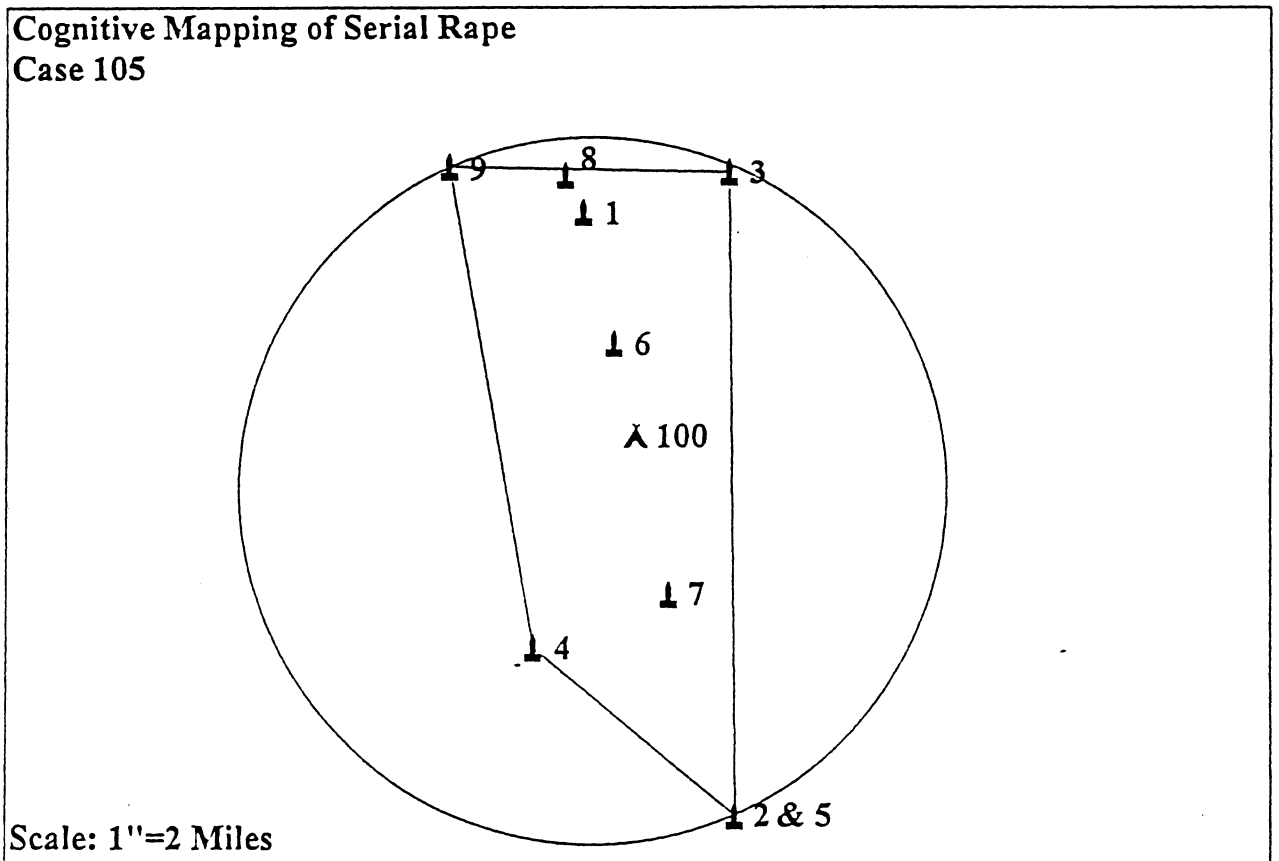
The geocoding included, for every case, the designations of latitudes and longitudes for each of the rape incidents, the rapist's home, the rapist's work location, if any, and any other known locations (for example, other crimes perpetrated by the rapist) relevant to the case. When a rapist had lived at several different locations during the case, all of the residences were entered into the geographical data set, and later analyzed according to the temporally determined rape-residence spatial relationship. In these cases with multiple residences, only the rape-residence pattern with the largest number of rapes was included in the larger data set.

While this geocoding was in progress, the project was able to obtain MapInfo software which was used to process the geocoded data created by NCMEC. It allowed the latitudes and longitudes that represented the rape, residence, and work locations to be transformed into a variety of quantifiable distances and relational patterns that were used in the subsequent analyses.

The geographical database was subsequently integrated with the crime scene database that summarized the rapist's rape behavior on each of the rapes for which there was geographical data. Cases where there was no geographic data on the residence, while satisfactory for inclusion in statistical analyses of the rape database, could not be included in the "geo-rape" database. There were also numerous instances in which particular incidents could not be geocoded, because locations were not given with enough precision (for example, a rape which occurred in a large state park). Sixteen cases were also removed from the main analysis, as they involved rapes occurring over 20 miles (i.e., 21-620 miles) from the rapist's residence; these cases represented travel patterns between cities or across states that were thought to confound the local patterns being exposed in the current study. In the end, the geographic data base consisted of 83 cases in which distance variables could be computed, and 76 cases in which the Convex Hull Polygon (i.e., a shape by definition requiring three points) could be determined.

The maps produced using the MapInfo software package consisted of patterns of points without reference to the surface features of the area being represented (e.g., the contours of a particular city or county). As such, they are referred to in the current study as "mapless maps" (Reboussin, Warren, and Hazelwood, 1993). (See Figure 2.) Each map illustrates one case: that is, the rapist's residence and associated rapes. Quantitatively, the point pattern of the rape locations for each case or for each rapist was summarized using: 1) a number of different

FIGURE 2



distances (i.e., shortest, furthest, and mean distance from residence to rape; distance from each rape to its consecutive rape; and distance from the residence to the centroid of the rapes, etc.); 2) areas (i.e., the area of the polygon that is made up of the rapist's residence and furthest rapes); and 3) relational analyses that looked at the location of the rapist's residence in relation to his rapes. Two types of shapes were used in conducting the relational analyses: the Convex Hull Polygon (CHP) and the "Canter Circle." The Convex Hull Polygon is created by drawing a boundary around the outermost rape points in each case so as to include all of the rape points in that particular case. The Canter Circle (Canter and Larkin, 1993) is drawn by joining as the diameter the two rapes that are the furthest distance from each other in each case. The relational analyses examined whether the rapist lived inside or outside these two areas. Four distinct geographical models were also created by determining whether a particular rapist lived inside or outside the Convex Hull Polygon and whether he travelled relatively short or relatively long distances to perpetrate his crimes. (For further review of the "mapless maps" see Appendix B of this report.)

Finally, the geographical analysis included a process of visual inspection and quantification designed to assess the process of "backtracking" referenced by LeBeau (1993). Backtracking was defined as the rapist's propensity to move increasingly closer to his residence as the sequence of incidents progressed. Backtracking was assessed in the current study using three categories: 1) "zero backtracking," in which the earlier rape was relatively close to the residence with subsequent rapes generally moving further away from the residence; 2) "predominant backtracking," in which the earlier rapes were relatively far from the residence with subsequent rapes moving closer to home; and 3) "random," in which there was no consistent pattern of tracking according to the preceding categorizations. The location of the rapes in terms of their

temporal sequencing was coded using a five point designation which determined whether the rape closest to the residence and furthest from the residence was the first rape, closer to the first, in the middle, closer to the last, or the last rape in the series. The maps were also usually inspected to ascertain predominant patterns manifest in a significant number of cases (e.g., corridors, pie slice, etc.). These were not included in any of the statistical analyses (Reboussin, Warren, and Hazelwood, 1993).

b. Temporal Variables

Temporal information involving the time and date of each rape for each rapist was recorded. These data were analyzed by McCleary, at the University of California, Irvine. The principal dependent measures used in these analyses were the time between incidents (i.e., whether there were any crime scene or demographic factors that predicted the timing of the next rape incident) and the length of the offender's overall rape career (i.e., time between first and last rape). (For a full summary of these results see Appendix C of the report.)

2. INDEPENDENT VARIABLES

The independent variables were derived from the crime scene information that was coded from the victim statements for each rape (i.e., the location of the offense, the rapist's behavior during the offense, and the rapist's choice of a victim) and from the information that could be obtained from the rapist's criminal history (i.e., the rapist's age, race, and prior offense history). It was assumed that the crime scene behavior and criminal history of the rapist embodied motivational and perceptual themes that might be causal in the positioning and timing of each rapist's series of offenses.

As discussed above, one aim of the present study was to compare the modified Groth

taxonomy of rapists, used by the NCAVC (Hazelwood and Burgess, 1987), with the MTC:3 system developed by Prentky and Knight (Prentky, Knight, and Rosenberg 1988). The modified Groth typology has been used extensively by FBI criminal investigative analysts in their "profiling" of serial rape. It has proved useful in organizing observations about the motivation of a rapist responsible for the perpetration of a series of unsolved rapes. The Groth system, however, is a clinically derived taxonomy and, as noted by Hazelwood (1987), fails to produce mutually exclusive categories of rape in the majority of cases. In contrast, the MTC:3 system has developed out of a decade of empirical research and is able to reach more definitive typings of a particular offender. This system, however, makes use of extensive information about the offender in reaching its designation, and hence has not been used by law enforcement in their attempts to understand an unidentified offender. The current study, therefore, sought to examine possible relationships between the modified Groth typology as described by Hazelwood (1987) and the MTC:3 system of classification to see if the more sophisticated MTC:3 system could be modified so as to allow for classification using only information derived from the crime scenes of a particular offender.

As part of this effort, Prentky, Knight, and their associates travelled to Quantico and rated the 41 serial rapists referred to above (i.e., Hazelwood and Warren, 1989, OIDS) according to their MTC:3 system. This allowed for a comparison of the Groth and MTC:3 classifications on the same sample of 41 serial rapists. After the Victim Statement Data Set was compiled (i.e., the sample of 108 serial rapists collected for the current study), the data were also sent to Knight, who attempted to develop translation variables for each of the MTC:3's main discriminating dimensions using only the crime scene information available in the Victim Statement Data Set.

3. *THE PROTOCOL*

A protocol for coding the victim statements was developed by the authors (Appendix A). Part A of the protocol contained 52 multiple-choice items which described the relationship of the victim to the offender; the encounter, rape and drop-off locations; the type of approach used by the rapist to gain proximity to the victim; the use or presence of bindings, weapons, and fetishistic objects; the use of alcohol and drugs by the rapist; the sexual acts performed and sexual functions displayed; victim characteristics; the presence or use of a vehicle; and the types of items removed from the rape site by the perpetrator. Many of these items included sub-parts and when coded, produced 123 variables.

Part B of the protocol contained 58 five-point scales that described the verbal, sexual, and physical interactions that occurred between the rapist and his victim during the rape. Of these, 49 were revisions and expansions of a previous set of scales, described in Warren et al. (1991). The remaining nine scales were retained from the previous study in their identical form.

The revisions of the 1991 scales attempted to correct two difficulties with the original scales. First, a number of the 1991 scales appeared to consist of more than one dimension, so that a "neutral" rating tended to be in the middle of the scale. For example, on the Apologetic-Demanding Scale, if neither of these qualities appeared in the victim statement, raters tended to rate the scale in the middle. These scales were revised so as to be unidimensional. Thus, in the above example, the Apologetic-Demanding Scale became two scales. The Apologetic Scale ranged from 1, "No apologetic statements by rapist," to 5, "Apologies are the primary theme in the rapist's conversation." Similarly, the Demanding Scale ranged from "No demanding statements by rapist" to "Demands are the primary theme in the rapist's conversation." Thus in

the revised scales, when the theme for the scale did not appear in the victim statement, the scale was marked at 1, its lowest point.

The second revision focused on expansions that allowed for the multidimensional measurement of certain key concepts. For example, in the 1991 version, rapist force had been measured with one scale, ranging from "No physical force" to "Victim brutally beaten." The revised scales included Blunt Force, Sadistic Infliction of Pain, and Function of Force Used by Offender (i.e., instrumental or expressive). The original victim injury scale also became three scales: Victim Injury Resulting from Blunt Force, Victim Injury by Other than a Blunt Weapon, and Overall Victim Injury.

In addition to these expansions, certain new topics were assessed. The 1991 scales included no measures of victim resistance. The revised scales contained three resistance scales: Verbal Resistance by the Victim, Nonconfrontative Resistance by the Victim, and Physical Resistance by the Victim. Thus the number of scales grew from 33 in 1991 to 58 in the revised set.

As indicated, these scales were designed to quantify the interaction occurring between the rapist and his victim during the course of the rape. They developed out of the profiling practice of examining the verbal, sexual, and physical dynamics of a sexual crime and were structured for both empirical and applied purposes. Specifically, the scales were coded independently for each rape so that the consistency and change from one rape to the next for the same offender could be examined, as well as the relationship of these dynamics to the subsequent temporal and geographical patterning of the offenses. The applied purpose of the scaling lay in the identification of core aspects of rape relevant to the investigation of the crime and the

viewing of the victim by law enforcement and clinicians associated with rape crisis services.

In analyzing the data, the nominal data contained in part A of the protocol and the interval data contained in part B of the protocol was used both directly and in collapsed form. Thirty-six behavioral variables were created which reflected the rapist's primary behavior over the course of all rapes. These included: 1) manner of approach; 2) use of restraints; 3) presence or use of a weapon; 4) presence or use of a gun; 5) presence of ritual; 6) victim race; 7) crossover in victim location; 8) predominance of indoor/outdoor rapes; 9) predominance of daytime/nighttime rapes; 10) inside/outside the Canter Circle; 11) inside/outside the Convex Hull Polygon; 12) mean level of force; 13) mean level of intentional infliction of pain; 14) mean victim age; 15) oldest victim age; 16) youngest victim age; 17) range of victim age; 18) modal victim age category; 19) offender race; 20) offender age; 21) predominance of weekday/weekend rapes; 22) type of neighborhood; 23) type of entry; 24) sexual dysfunction displayed; 25) type of neighborhood; 26) resistance use; 27) burglary; 28) mean number of maneuvers designed to protect identity; 29) rape duration; 30) others present during the majority of rapes; 31) contact site; 32) method of force used; 33) use of any weapon; 34) transportation of victim; 35) presence of sadistic acts; 36) items removed. The 58 behavioral scales were also factor analyzed and integrated into three composite factor scores, which are described on page 172 and summarized in Table 22.

The rapist's criminal history was quantified according to nine variables: 1) criminal history index (see Appendix F for the Turner-Ratledge Criminal History Index); 2) total violent charges; 3) total potentially violent charges; 4) total number of crimes against persons; 5) total number of crimes; 6) total number of property charges; 7) total number of drug charges; 8) total number of rape and sodomy charges; and 9) total number of criminal charges.

The Increaser/Non-Increaser status of each offender was also reconceptualized. In the earlier research by Warren, et al., 1991, the rapist's Increaser/Non-Increaser status was determined by subtracting the Blunt Force Scale score on the last rape from the Blunt Force Scale score on the first rape. If there was a positive difference, the rapist was determined to be an Increaser, and if there was no difference or a negative difference, the rapist was determined to be a Non-Increaser. This mode of operationalization was appropriate to the original data set in that only data on the rapists' first, middle, and last rape was available. In the current study, the subtraction method was seriously confounded by the varying number of rapes reported or available for the different offenders (i.e., number of rapes = 2 to 17). In order to minimize the effect of this variability, the Increaser/Non-Increaser designation was determined by running a regression of the Blunt Force Scale from first to last rape. Those with a positive slope were designated Increasers and those with zero or a negative slope, Non-Increasers. This same method was used on a factor-analytically derived Composite Force Factor (see page 172), but the results showed less discrimination between Increasers and Non-Increasers (fifty-fifty split) and showed no predictive value on subsequent analyses.

4. *RELIABILITY AND CODING*

The 565 victim statements were coded by two graduate research assistants using the protocol described above. The statements had been sanitized by the data manager and were provided to the coders in random order; they therefore did not know which rapes were part of each case, nor the temporal sequence in which they had occurred. One hundred of the rapes were coded by both research assistants in order to obtain estimates of reliability.

Prior to rating any victim statements, the two research assistants trained on a different set

victim statements not connected with the present study. They rated sets of ten statements and then discussed their ratings with each other and the principal investigators. This process eventually necessitated decisions regarding an objective or interpretive process of rationalization. The strictly objective approach suggested a quantification process in which each type of statement or activity was counted for coding purposes. The interpretive (profiling) approach necessitated an assessment of each behavior in the context of the entire rape. For example, if the rapist made only one statement to the victim during the rape and this statement was of the type "women are disgusting, dirty animals," it would result in a score of 2 on the Hostility Toward Women Scale if a pure counting approach was used and a 5 on the same scale if a relative assessment of themes approach was utilized. The final decision was to go with the interpretive approach, a decision which increased the difficulty of obtaining high rates of reliability which also, it is hoped, helped to determine some of the more subjective processes associated with "profiling," or criminal investigative analysis. When acceptable levels of reliability had been reached, the coding of victim statements for the present study began.

The 100 victim statements used for reliability purposes were interspersed throughout the coding process from beginning to end. The coders had no knowledge of which statements were being used for the reliability assessment. On the first section of the protocol, which contained multiple-choice items describing the rape and its context, kappas could be computed for 106 of 123 variables. The median kappa was .78; for the 10 kappas below .40, the median percent agreement was 95 percent. For the behavioral scales, the second section of the protocol, the median of the correlations was .76; the median percent agreement for the 10 lowest correlations (7 and below) was 79 percent.

The above reliabilities relate to the ratings of individual rapes. It was also of interest to obtain the Groth motivational type for the rapists, as opposed to the rape incidents. This was done by the two research assistants after all the rapes had been rated. A list was produced of each rapist and the rape type for each of his rapes. The two research assistants then agreed on an overall type for the rapist, using the following procedure: if 75 percent or more of the rapes committed by the rapist were of the same type and there were two or less types represented in the rapes of that rapist, the predominant type was assigned. If the rapist did not meet the above criteria, the two coders re-read the victim statements and came to a consensus, based on the change that took place over time and the primary motivation of the rapist across rapes.

5. *DATA ENTRY*

The protocols for each rape and the criminal history summary for each rapist were entered into a database by the project secretary/database manager using the SPSS PC+ version 4.0 data entry module. This database was then transferred to an RS-6000 computer at the University of Virginia, where it was integrated with the geographical data set that had been generated using the MapInfo software package. Data analysis was conducted using SAS and SPSS statistical packages.

CHAPTER III

RESULTS: DESCRIPTIVE STATISTICS

VICTIM STATEMENT DATA SET (DATA SET I): RAPE CHARACTERISTICS BY GROTH RAPE TYPE

Tables 1 through 5 summarize information regarding the 565 rapes that were perpetrated by the 108 serial rapists. Both the nominal data from Section A of the protocol and the interval data from Section B of the report are summarized according to the rape type (Groth) that was attributed to each rape by the coders. These data help to describe the nature of rape and, in particular, the nature of rape perpetrated by serial rapists. These statistics, being rape-wise statistics, do not address characteristics of the rapist or characteristics of the rapist's behavior over time (for these statistics see the following sections).

Table 1 summarizes information regarding the location and timing of the rapes perpetrated by the 108 serial rapists (i.e. the general context in which the rapist encountered the victim, the manner of approach used in gaining access to the victim, and the timing of the rapes in terms of the day of the week and time of the day). Table 2 summarizes the types of sexual acts performed during each of the rapes, the presence of perceived sexual dysfunctions experienced by the rapist during the sexual assault, and the presence of any fetishistic, ritualistic, sadistic, and/or masochistic behavior. Table 3 summarizes information regarding the presence or use of a weapon, the use of restraints, the use of a vehicle in the offense, and the removal of articles from the scene of the rape. Table 4 describes the characteristics of the victims raped by these 108 serial rapists (i.e., their total numbers, average age, race, similarity of race with race of perpetrator, and

living circumstances at the time of the rape). Table 5 describes the scaled items or variables that quantify the interaction occurring between the rapist and his victim during each rape. As indicated, 49 revised scales and nine original scales were used in coding the data.

Interesting observations regarding rapes perpetrated by serial rapists can be gleaned from Tables 1 through 5. To begin, it is clear that serial rapists tend to rape strangers, and that in the majority of these assaults, the victim is raped in the confines of her own home (this is most true in the Anger-Excitation rape and least true in the Anger-Retaliatory rape). The victim is most often taken by surprise, in the early hours of the morning, with greatest frequency on Thursday and Friday nights. (See Table 1.)

The most common sexual acts are fellatio and vaginal intercourse. The Anger-Excitation rape, however, more often than not involves either anal intercourse or inanimate penetration (this pattern has also been noted by Dietz, Hazelwood, and Warren, 1990, and Warren, Reboussin, Hazelwood, and Wright, 1991). Sexual dysfunction (erectile insufficiency and retarded ejaculation) is also most often found among this group. Ritualistic aspects of the rape behavior not directly tied to the modus operandi (i.e., behavior not necessary to obtain a victim, complete the rape, and avoid detection) was observed more often than not in the 565 rapes. It is the impression of the authors that this ritualistic behavior emanates from some fantasy underpinnings to the rape and, as such, represents the "signature" aspect of the crime which remains more consistent across rapes by the same offender. (See discussion of Douglas and Munn, 1992, on pp. 9-10.)

Knives were the most common weapon used in these sexual assaults both to threaten the victim and to inflict injury. Here again, the Anger-Excitation rape involved the highest incidence

TABLE 1

**RAPE CHARACTERISTICS: RELATIONSHIP OF OFFENDER TO
VICTIM, ENCOUNTER SITUATION, INDOOR/OUTDOOR,
LOCATION OF CONTACT SITE, METHOD OF APPROACH,
TIMING: BY RAPE TYPE (GROTH MODIFIED)**

| RAPE CHARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|--|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| Relationship of Offender to Victim: | | | | | |
| Stranger | 236 (91%) | 252 (93%) | 22 (92%) | 10 (91%) | 520(92%) |
| Acquaintance | 3 (1%) | 11 (4%) | 0 (0%) | 0 (0%) | 14 (3%) |
| Friend | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Relative | 0 (0%) | 1 (0%) | 0 (0%) | 0 (0%) | 1 (0%) |
| Missing | 20 (8%) | 7 (3%) | 2 (8%) | 1 (9%) | 30 (5%) |
| Situation Offender Encountered Victim: | | | | | |
| Date Rape | 1 (0%) | 1 (0%) | 0 (0%) | 0 (0%) | 2 (0%) |
| Social Context | 0 (0%) | 5 (2%) | 0 (0%) | 0 (0%) | 5 (1%) |
| Hitchhiking | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Business Context | 7 (3%) | 10 (4%) | 0 (0%) | 0 (0%) | 17 (3%) |
| Jogging/Bike-Riding | 1 (0%) | 1 (0%) | 0 (0%) | 0 (0%) | 2 (0%) |
| Babysitting | 1 (0%) | 2 (1%) | 0 (0%) | 0 (0%) | 3 (1%) |
| Other/Outside | 56 (22%) | 85 (31%) | 12 (50%) | 1 (9%) | 154 (27%) |
| Victim's Home | 175 (68%) | 138 (51%) | 11 (46%) | 10 (91%) | 334 (59%) |
| Other/Missing | 18 (7%) | 29 (11%) | 1 (4%) | 0 (0%) | 48 (9%) |

TABLE 1 (cont'd)

**RAPE CHARACTERISTICS: RELATIONSHIP OF OFFENDER TO
VICTIM, ENCOUNTER SITUATION, INDOOR/OUTDOOR,
LOCATION OF CONTACT SITE, METHOD OF APPROACH,
TIMING: BY RAPE TYPE (GROTH MODIFIED)**

| RAPE CHARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| 3. Indoor/Outdoor Contact Site: | | | | | |
| Inside | 198 (76%) | 175 (65%) | 12 (50%) | 10 (91%) | 395 (70%) |
| Outside | 61 (24%) | 95 (35%) | 12 (50%) | 1 (9%) | 169 (30%) |
| Missing | 0 (0%) | 1 (0%) | 0 (0%) | 0 (0%) | 1 (0%) |
| 4. Location of Initial Contact Site: | | | | | |
| Victim's Home | 181 (70%) | 138 (51%) | 11 (46%) | 10 (91%) | 340 (60.2) |
| Victim's Workplace | 7 (3%) | 11 (4%) | 1 (4%) | 0 (0%) | 19 (3.4) |
| Shopping Area | 3 (1%) | 0 (0%) | 0 (0%) | 0 (0%) | 3 (0.5) |
| School/Playground | 2 (1%) | 0 (0%) | 0 (0%) | 0 (0%) | 2 (0.4) |
| Public Street | 32 (12%) | 72 (27%) | 10 (42%) | 1 (9%) | 115 (20.4) |
| Parking Lot | 6 (2%) | 2 (1%) | 1 (4%) | 0 (0%) | 9 (1.6) |
| Vehicle | 4 (2%) | 4 (2%) | 0 (0%) | 0 (0%) | 8 (1.4) |
| Open/Wooded Area | 1 (0%) | 2 (1%) | 1 (4%) | 0 (0%) | 3 (0.5) |
| Hotel | 3 (1%) | 4 (2%) | 0 (0%) | 0 (0%) | 7 (1.2) |
| Jogging Trail | 3 (1%) | 1 (0%) | 0 (0%) | 0 (0%) | 4 (0.7) |
| Other/Missing | 17 (7%) | 37 (14%) | 1 (4%) | 0 (0%) | 55 (9.8) |

TABLE 1 (cont'd)

**RAPE CHARACTERISTICS: RELATIONSHIP OF OFFENDER TO
VICTIM, ENCOUNTER SITUATION, INDOOR/OUTDOOR,
LOCATION OF CONTACT SITE, METHOD OF APPROACH,
TIMING: BY RAPE TYPE (GROTH MODIFIED)**

| PE ARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|--------------------------------------|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| Method of Approach: | | | | | |
| Deceptive | 36 (14%) | 62 (23%) | 6 (25%) | 1 (9%) | 105 (19%) |
| Surprise | 218 (84%) | 200 (74%) | 11 (46%) | 10 (91%) | 439 (78%) |
| Direct Assault | 5 (2%) | 9 (3%) | 7 (29%) | 0 (0%) | 21 (4%) |
| Missing | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Day of the Week: (p < .01) | | | | | |
| Monday | 38 (15%) | 34 (13%) | 0 (0%) | 0 (0%) | 72 (13%) |
| Tuesday | 34 (13%) | 40 (15%) | 3 (13%) | 0 (0%) | 77 (14%) |
| Wednesday | 43 (17%) | 21 (8%) | 4 (17%) | 3 (27%) | 71 (13%) |
| Thursday | 44 (17%) | 36 (13%) | 4 (17%) | 3 (27%) | 87 (16%) |
| Friday | 34 (13%) | 56 (21%) | 5 (21%) | 1 (9%) | 96 (17%) |
| Saturday | 29 (11%) | 45 (17%) | 4 (17%) | 1 (9%) | 79 (14%) |
| Sunday | 37 (14%) | 37 (14%) | 4 (17%) | 3 (27%) | 81 (14%) |
| Time of the Day: | | | | | |
| 0000 - 0559 | 140 (54%) | 137 (51%) | 7 (29%) | 7 (64%) | 291 (52%) |
| 0600 - 1159 | 28 (11%) | 20 (7%) | 1 (4%) | 0 (0%) | 49 (9%) |
| 1200 - 1759 | 20 (7%) | 27 (10%) | 1 (4%) | 1 (9%) | 47 (8%) |
| 1800 - 2359 | 71 (28%) | 87 (32%) | 15 (63%) | 2 (27%) | 178 (32%) |

TABLE 2

**RAPE CHARACTERISTICS: SEXUAL ASPECTS OF RAPE BY RAPE TYPE
(GROTH MODIFIED)**

| RAPE CHARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---------------------------------|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| 1. Sexual Activities: | | | | | |
| Kissing/Nuzzling | 81 (31%) | 40 (15%) | 1 (4%) | 3 (27%) | 125 (22%) |
| Fondling | 111 (43%) | 58 (21%) | 4 (17%) | 5 (45%) | 178 (32%) |
| Cunnilingus | 51 (20%) | 23 (9%) | 2 (8%) | 1 (9%) | 77 (14%) |
| Fellatio | 99 (38%) | 124 (46%) | 4 (17%) | 6 (55%) | 233 (41%) |
| Vaginal Intercourse | 213 (82%) | 231 (85%) | 16 (67%) | 10 (91%) | 470 (83%) |
| Anal Intercourse | 26 (10%) | 53 (20%) | 2 (8%) | 6 (55%) | 87 (15%) |
| Inanimate Penetration: | | | | | |
| Vaginal | 4 (2%) | 3 (1%) | 0 (0%) | 6 (55%) | 13 (2%) |
| Anal | 1 (0%) | 3 (1%) | 0 (0%) | 3 (27%) | 7 (1%) |
| Digital Penetration | 51 (19%) | 39 (14%) | 4 (17%) | 5 (45%) | 99 (18%) |
| Missing/Not Applicable | 6 (2%) | 3 (1%) | 6 (25%) | 0 (0%) | 15 (3%) |
| 2. Fetishistic Activity: | | | | | |
| Yes | 9 (4%) | 2 (1%) | 0 (0%) | 1 (9%) | 12 (2%) |
| No | 249 (96%) | 269 (99%) | 23 (96%) | 10 (92%) | 551 (98%) |
| Missing | 1 (0%) | 0 (0%) | 1 (4%) | 0 (0%) | 2 (0%) |
| 3. Ritualistic Behavior: | | | | | |
| Yes | 165 (64%) | 122 (45%) | 4 (17%) | 11 (100%) | 302 (54%) |
| No | 93 (36%) | 149 (55%) | 19 (79%) | 0 (0%) | 261 (46%) |
| Missing | 1 (0%) | 0 (0%) | 1 (4%) | 0 (0%) | 2 (0%) |

TABLE 2 (cont'd)

**RAPE CHARACTERISTICS: SEXUAL ASPECTS OF RAPE BY RAPE TYPE
(GROTH MODIFIED)**

| RAPE CHARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---------------------------------|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| . Sadistic Stimulation: | | | | | |
| Yes | 6 (2%) | 13 (5%) | 7 (29%) | 10 (91%) | 36 (6%) |
| No | 253 (98%) | 258 (95%) | 16 (67%) | 1 (9%) | 528 (94%) |
| Missing | 0 (0%) | 0 (0%) | 1 (4%) | 0 (0%) | 1 (0%) |
| . Sexual Dysfunction: | | | | | |
| No Sexual Dysfunction | 179 (69%) | 218 (80%) | 19 (79%) | 5 (46%) | 421 (75%) |
| Erectile Insufficiency | 52 (20%) | 24 (9%) | 4 (17%) | 4 (36%) | 84 (15%) |
| Premature Ejaculation | 6 (2%) | 3 (1%) | 1 (4%) | 0 (0%) | 10 (2%) |
| Retarded Ejaculation | 12 (5%) | 18 (7%) | 0 (0%) | 3 (27%) | 33 (6%) |
| Conditional Impotence | 12 (5%) | 14 (5%) | 0 (0%) | 0 (0%) | 26 (5%) |

TABLE 3

**RAPE CHARACTERISTICS: CONTROL TECHNIQUES AND OTHER ASPECTS
OF THE RAPE BY RAPIST TYPE (GROTH MODIFIED)**

| RAPE CHARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|--|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| 1. Weapons Presence Only (Weapon Not Used, Except to Threaten): | | | | | |
| Gun/Rifle | 34 (13%) | 57 (21%) | 1 (4%) | 1 (9%) | 93 (17%) |
| Knife | 53 (21%) | 47 (17%) | 4 (17%) | 0 (0%) | 104 (18%) |
| Screwdriver | 4 (2%) | 3 (1%) | 0 (0%) | 0 (0%) | 7 (1%) |
| Blunt Instrument | 2 (1%) | 1 (0%) | 0 (0%) | 0 (0%) | 3 (1%) |
| Other | 5 (2%) | 3 (1%) | 1 (4%) | 0 (0%) | 9 (2%) |
| Missing/No Data/ Victim Unsure | 11 (4%) | 19 (7%) | 3 (13%) | 0 (0%) | 32 (6%) |
| Ligature (NOT APPLICABLE) | | | | | |
| 2. Weapon Used: | | | | | |
| Gun/Rifle | 0 (1%) | 2 (1%) | 1 (4%) | 1 (9%) | 3 (1%) |
| Knife | 70 (27%) | 90 (33%) | 6 (25%) | 10 (91%) | 176 (31%) |
| Screwdriver | 1 (0%) | 2 (1%) | 0 (0%) | 0 (0%) | 3 (1%) |
| Blunt Instrument | 0 (0%) | 3 (1%) | 0 (0%) | 0 (0%) | 3 (1%) |
| Ligature | 3 (1%) | 2 (1%) | 1 (4%) | 2 (18%) | 8 (1%) |
| Other | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Missing | 11 (4%) | 19 (7%) | 3 (13%) | 0 (0%) | 32 (6%) |
| 3. Restraints Obtained: | | | | | |
| No Restraints | 174 (67%) | 201 (74%) | 23 (96%) | 4 (36%) | 402 (71%) |
| Available at Scene | 39 (15%) | 40 (15%) | 0 (0%) | 4 (36%) | 83 (15%) |
| Restraints Brought to Scene | 34 (13%) | 21 (8%) | 1 (4%) | 3 (27%) | 59 (10%) |
| Missing | 12 (5%) | 9 (3%) | 0 (0%) | 0 (0%) | 21 (4%) |

TABLE 3 (cont'd)

**RAPE CHARACTERISTICS: CONTROL TECHNIQUES AND OTHER ASPECTS
OF THE RAPE BY RAPIST TYPE (GROTH MODIFIED)**

| RAPE CHARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|--------------------------------------|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| Vehicle Used In Assault: | | | | | |
| Yes | 32 (12%) | 45 (17%) | 5 (21%) | 2 (18%) | 84 (15%) |
| No | 226 (87%) | 222 (82%) | 19 (79%) | 9 (82%) | 476 (84%) |
| Missing | 1 (0%) | 4 (2%) | 0 (0%) | 0 (0%) | 5 (1%) |
| Types of Articles Stolen: | | | | | |
| No Articles Stolen | 127 (49%) | 117 (43%) | 16 (67%) | 6 (55%) | 266 (47%) |
| Money/Credit Cards | 106 (41%) | 122 (45%) | 7 (29%) | 3 (27%) | 238 (43%) |
| Clothing of Victim | 10 (4%) | 24 (9%) | 0 (0%) | 0 (0%) | 34 (6%) |
| Personal Item of Victim | 17 (7%) | 20 (7%) | 2 (8%) | 1 (9%) | 40 (7%) |
| Jewelry | 20 (8%) | 45 (17%) | 1 (4%) | 0 (0%) | 66 (12%) |
| Valuables (Other) | 10 (4%) | 21 (8%) | 0 (0%) | 0 (0%) | 31 (6%) |
| Other | 22 (9%) | 31 (11%) | 2 (8%) | 0 (0%) | 55 (10%) |
| Missing | 5 (2%) | 4 (3%) | 0 (0%) | 1 (9%) | 15 (3%) |
| Substance Use: | | | | | |
| Yes | 33 (13%) | 34 (13%) | 1 (4%) | 4 (36%) | 72 (13%) |
| No | 224 (87%) | 235 (87%) | 22 (92%) | 7 (64%) | 488 (86%) |
| Missing | 2 (1%) | 2 (1%) | 1 (4%) | 0 (0%) | 5 (1%) |

TABLE 4

**RAPE CHARACTERISTICS: VICTIM ATTRIBUTES BY RAPE TYPE
(GROTH MODIFIED)**

| VICTIM CHARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| 1. Age of Victims: | | | | | |
| Up to 13 | 11 (4%) | 11 (4%) | 1 (4%) | 0 (0%) | 23 (4%) |
| 14 - 20 | 51 (20%) | 66 (24%) | 6 (25%) | 2 (18%) | 125 (22%) |
| 21 - 27 | 64 (25%) | 78 (29%) | 5 (21%) | 5 (45%) | 152 (27%) |
| 28 - 35 | 52 (20%) | 54 (20%) | 3 (13%) | 1 (9%) | 110 (20%) |
| 36 - 42 | 18 (7%) | 18 (7%) | 1 (4%) | 0 (0%) | 37 (7%) |
| 43 - 50 | 5 (2%) | 8 (3%) | 1 (4%) | 0 (0%) | 14 (3%) |
| 51 - 58 | 7 (3%) | 6 (2%) | 2 (8%) | 0 (0%) | 15 (3%) |
| 59 - 66 | 7 (3%) | 5 (2%) | 1 (4%) | 0 (0%) | 13 (2%) |
| 67+ | 17 (6%) | 5 (2%) | 3 (13%) | 1 (9%) | 26 (5%) |
| Missing | 27 (10%) | 20 (7%) | 1 (4%) | 2 (18%) | 50 (9%) |
| 2. Race of Victims: | | | | | |
| White | 187 (72%) | 169 (62%) | 13 (54%) | 9 (82%) | 378 (67%) |
| Black | 22 (9%) | 66 (24%) | 4 (17%) | 0 (0%) | 92 (16%) |
| Hispanic | 4 (2%) | 6 (2%) | 3 (13%) | 0 (0%) | 13 (2%) |
| Asian | 3 (1%) | 2 (1%) | 0 (0%) | 0 (0%) | 5 (1%) |
| Native American | 0 (0%) | 1 (0%) | 1 (4%) | 0 (0%) | 2 (0%) |
| Other | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| Missing | 43 (17%) | 27 (10%) | 3 (13%) | 2 (18%) | 75 (13%) |
| 3. Racial Cross-Over: ($p = .03$) | | | | | |
| V/P Same Race | 101 (39%) | 121 (45%) | 6 (25%) | 7 (64%) | 235 (42%) |
| V/P Different Race | 55 (21%) | 71 (26%) | 10 (42%) | 1 (9%) | 137 (24%) |
| Missing | 103 (40%) | 79 (30%) | 8 (33%) | 3 (27%) | 193 (34%) |

TABLE 4 (cont'd)

**RAPE CHARACTERISTICS: VICTIM ATTRIBUTES BY RAPE TYPE
(GROTH MODIFIED)**

| VICTIM CHARACTERISTICS | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| Living Situation: | | | | | |
| Alone | 50 (19%) | 27 (10%) | 4 (17%) | 2 (18%) | 83 (15%) |
| Group | 4 (2%) | 3 (1%) | 0 (0%) | 1 (9%) | 8 (1%) |
| Family | 96 (37%) | 104 (38%) | 6 (25%) | 5 (45%) | 211 (37%) |
| Roommate | 18 (7%) | 25 (9%) | 1 (4%) | 2 (18%) | 46 (8%) |
| Other | 0 (0%) | 2 (1%) | 0 (0%) | 0 (0%) | 2 (0%) |
| Missing | 91 (35%) | 110 (41%) | 13 (54%) | 1 (9%) | 215 (38%) |
| Indication of Specific Victim Selection: | | | | | |
| Yes | 43 (17%) | 37 (14%) | 3 (13%) | 6 (55%) | 89 (16%) |
| No | 215 (83%) | 233 (86%) | 21 (88%) | 5 (45%) | 474 (84%) |
| Missing | 1 (0%) | 1 (0%) | 0 (0%) | 0 (0%) | 2 (0%) |

TABLE 5

**RAPE CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES
BY RAPIST TYPE (GROTH MODIFIED)**

| RAPE SCALE | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|--|---------------------------------------|---------------------------------------|--------------------------------------|---------------------------------------|--------------------------|
| 1. Verbal Scales: | | | | | |
| Personal Information (p = .0004) | | | | | |
| Mean | 1.7 | 1.4 | 1.2 | 1.9 | 1.68 |
| S.D. | (1.1) | (0.8) | (0.5) | (1.0) | (0.9) |
| Excuses (p = .007) | | | | | |
| Mean | 1.3 | 1.1 | 1.1 | 1.4 | 1.2 |
| S.D. | (0.5) | (0.4) | (0.3) | (0.7) | (0.5) |
| Self-Promotion (p = .7253) | | | | | |
| Mean | 1.1 | 1.1 | 1.0 | 1.2 | 1.1 |
| S.D. | (0.4) | (0.4) | (0.2) | (0.4) | (0.4) |
| Self-Deprecating (p = .002) | | | | | |
| Mean | 1.2 | 1.0 | 1.0 | 1.0 | 1.1 |
| S.D. | (0.5) | (0.2) | (0.0) | (0.0) | (0.4) |
| Sensitivity to Victim (p = .0001) | | | | | |
| Mean | 2.3 | 1.4 | 1.1 | 1.6 | 1.8 |
| S.D. | (1.0) | (0.6) | (0.3) | (0.7) | (1.0) |
| Inquisitive (p = .0001) | | | | | |
| Mean | 1.7 | 1.3 | 1.1 | 1.6 | 1.5 |
| S.D. | (1.0) | (0.8) | (0.3) | (0.9) | (0.9) |
| Complimentary to Victim (p = .0001) | | | | | |
| Mean | 1.2 | 1.0 | 1.00 | 1.3 | 1.1 |
| S.D. | (0.6) | (0.3) | (0.0) | (0.7) | (0.5) |
| Hostility/Women (p = .0001) | | | | | |
| Mean | 1.1 | 1.5 | 1.8 | 2.6 | 1.4 |
| S.D. | (0.4) | (0.9) | (1.3) | (1.4) | (0.8) |
| Hostility/General (p = .56) | | | | | |
| Mean | 1.0 | 1.1 | 1.1 | 1.0 | 1.1 |
| S.D. | (0.2) | (0.4) | (0.4) | (0.0) | (0.3) |
| Reassuring (p = .0001) | | | | | |
| Mean | 2.1 | 1.3 | 1.1 | 1.6 | 1.7 |
| S.D. | (1.0) | (0.6) | (0.3) | (0.7) | (0.9) |

TABLE 5 (cont'd)

**RAPE CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES
BY RAPIST TYPE (GROTH MODIFIED)**

| PE SCALE | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---|------------------------------|------------------------------|-----------------------------|------------------------------|------------------|
| Verbal Scales (cont'd): | | | | | |
| Apologetic (p = .0002) | | | | | |
| Mean | 1.2 | 1.0 | 1.0 | 1.2 | 1.1 |
| S.D. | (0.5) | (0.2) | (0.0) | (0.6) | (0.4) |
| Demands (p = .0001) | | | | | |
| Mean | 3.1 | 3.3 | 2.5 | 3.5 | 3.2 |
| S.D. | (0.8) | (0.9) | (1.1) | (0.7) | (0.9) |
| Threats (p = .0001) | | | | | |
| Mean | 2.0 | 2.4 | 2.0 | 2.8 | 2.2 |
| S.D. | (0.9) | (1.1) | (1.0) | (1.7) | (1.0) |
| Sexually-Oriented Speech (p = .0007) | | | | | |
| Mean | 1.7 | 1.6 | 1.5 | 2.8 | 1.7 |
| S.D. | (1.0) | (0.9) | (0.7) | (1.3) | (1.0) |
| Verbal Scripting (p = .0002) | | | | | |
| Mean | 1.1 | 1.1 | 1.0 | 1.6 | 1.1 |
| S.D. | (0.3) | (0.5) | (0.2) | (1.2) | (0.4) |
| Demeaning Scripting (p = .0007) | | | | | |
| Mean | 1.0 | 1.1 | 1.0 | 1.3 | 1.1 |
| S.D. | (0.1) | (0.4) | (0.2) | (0.7) | (0.3) |
| Scripting to Compliment Rapist (p = .15) | | | | | |
| Mean | 1.0 | 1.1 | 1.0 | 1.2 | 1.0 |
| S.D. | (0.2) | (0.3) | (0.0) | (0.6) | (0.3) |
| Behavioral Scripting (p = .02) | | | | | |
| Mean | 1.6 | 1.6 | 1.2 | 2.3 | 1.6 |
| S.D. | (0.9) | (0.9) | (0.5) | (1.7) | (0.9) |
| Verbal Negotiation (p = .0007) | | | | | |
| Mean | 1.2 | 1.1 | 1.0 | 1.1 | 1.1 |
| S.D. | (0.5) | (0.3) | (0.0) | (0.3) | (0.4) |

TABLE 5 (cont'd)

**RAPE CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES
BY RAPIST TYPE (GROTH MODIFIED)**

| RAPE SCALE | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---|------------------------------|------------------------------|-----------------------------|------------------------------|------------------|
| 2. Physical Scales: | | | | | |
| Blunt Force (p = .0001) | | | | | |
| Mean | 1.1 | 1.3 | 3.1 | 2.5 | 1.4 |
| S.D. | (0.4) | (0.7) | (1.0) | (0.9) | (0.8) |
| Victim Injury/Blunt Force (p = .0001) | | | | | |
| Mean | 1.1 | 1.2 | 2.5 | 2.1 | 1.3 |
| S.D. | (0.4) | (0.5) | (0.8) | (0.7) | (0.6) |
| Victim Injury/Other than Blunt Force (p = .0001) | | | | | |
| Mean | 1.7 | 1.8 | 2.5 | 2.7 | 1.8 |
| S.D. | (0.6) | (0.6) | (1.4) | (0.9) | (0.7) |
| Total Victim Injury (p = .0001) | | | | | |
| Mean | 1.3 | 1.5 | 3.0 | 2.5 | 1.5 |
| S.D. | (0.5) | (0.7) | (0.9) | (0.7) | (0.7) |
| Bindings (p = .004) | | | | | |
| Mean | 1.6 | 1.5 | 1.1 | 2.2 | 1.5 |
| S.D. | (0.9) | (0.9) | (0.4) | (1.1) | (0.9) |
| Binding Materials (p = .0008) | | | | | |
| Mean | 1.6 | 1.4 | 1.1 | 2.3 | 1.5 |
| S.D. | (1.0) | (0.8) | (0.6) | (1.5) | (0.9) |
| Sadistic Infliction of Pain (p = .0001) | | | | | |
| Mean | 1.1 | 1.1 | 2.2 | 3.4 | 1.2 |
| S.D. | (0.3) | (0.5) | (1.4) | (1.0) | (0.6) |
| Function of Force (p = .0001) | | | | | |
| Mean | 1.2 | 1.4 | 4.0 | 2.3 | 1.4 |
| S.D. | (0.4) | (0.8) | (1.1) | (1.1) | (0.9) |
| Captivity (NS) | | | | | |
| Mean | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| S.D. | (0.0) | (0.0) | (0.0) | (0.0) | (0.0) |

TABLE 5 (cont'd)

**RAPE CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES
BY RAPIST TYPE (GROTH MODIFIED)**

| BEHAVIORAL SCALE | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---|------------------------------|------------------------------|-----------------------------|------------------------------|------------------|
| Physical Scales (cont'd): | | | | | |
| Effort Not to Harm (p = .0001) | | | | | |
| Mean | 1.5 | 1.2 | 1.0 | 1.4 | 1.3 |
| S.D. | (0.8) | (0.4) | (0.0) | (0.5) | (1.0) |
| Transportation of Victim (p = .78) | | | | | |
| Mean | 1.3 | 1.4 | 1.3 | 1.6 | 1.4 |
| S.D. | (1.0) | (1.0) | (0.9) | (1.4) | (0.9) |
| Rapist's Efforts to Protect Identity (p = .0001) | | | | | |
| Mean | 2.2 | 2.0 | 1.5 | 2.6 | 2.0 |
| S.D. | (0.9) | (0.8) | (0.6) | (0.8) | (0.9) |
| Duration of Assault (p = .05) | | | | | |
| Mean | 2.2 | 2.1 | 1.8 | 2.6 | 2.1 |
| S.D. | (1.0) | (0.9) | (1.0) | (1.0) | (1.0) |
| Macho Behavior (p = .0001) | | | | | |
| Mean | 2.3 | 3.7 | 3.9 | 3.7 | 3.1 |
| S.D. | (1.0) | (1.0) | (1.0) | (0.9) | (1.2) |
| Planning of Rape (p = .0001) | | | | | |
| Mean | 3.2 | 3.0 | 2.7 | 3.8 | 3.1 |
| S.D. | (0.7) | (0.8) | (0.9) | (0.6) | (0.7) |
| Humiliation of Victim (p = .0001) | | | | | |
| Mean | 1.2 | 1.7 | 1.8 | 3.8 | 1.5 |
| S.D. | (0.4) | (1.0) | (1.3) | (0.8) | (0.9) |
| Enjoyment (p = .0001) | | | | | |
| Mean | 1.3 | 1.2 | 1.0 | 2.0 | 1.2 |
| S.D. | (0.7) | (0.5) | (0.2) | (1.2) | (0.6) |

TABLE 5 (cont'd)

**RAPE CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES
BY RAPIST TYPE (GROTH MODIFIED)**

| RAPE SCALE | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|---|------------------------------|------------------------------|-----------------------------|------------------------------|------------------|
| 3. Sexual Behavior: | | | | | |
| Kissing (p = .005) | | | | | |
| Mean | 1.3 | 1.2 | 1.0 | 1.5 | 1.2 |
| S.D. | (0.7) | (0.6) | (0.0) | (1.0) | (0.6) |
| Nuzzling (p = .0001) | | | | | |
| Mean | 1.4 | 1.1 | 1.0 | 1.1 | 1.2 |
| S.D. | (0.7) | (0.5) | (0.2) | (0.3) | (0.6) |
| Fondling (p = .0001) | | | | | |
| Mean | 1.7 | 1.3 | 1.4 | 1.8 | 1.5 |
| S.D. | (1.0) | (0.7) | (1.0) | (0.9) | (0.9) |
| Fellatio (p = .05) | | | | | |
| Mean | 1.5 | 1.6 | 1.3 | 2.0 | 1.6 |
| S.D. | (0.8) | (0.8) | (0.7) | (1.3) | (0.8) |
| Cunnilingus (p = .002) | | | | | |
| Mean | 1.3 | 1.1 | 1.1 | 1.2 | 1.2 |
| S.D. | (0.6) | (0.3) | (0.3) | (0.4) | (0.5) |
| Anal Sex (p = .0001) | | | | | |
| Mean | 1.1 | 1.3 | 1.1 | 1.8 | 1.2 |
| S.D. | (0.3) | (0.6) | (0.3) | (1.0) | (0.5) |
| Vaginal Sex (p = .02) | | | | | |
| Mean | 2.3 | 2.2 | 1.9 | 2.9 | 2.3 |
| S.D. | (1.0) | (0.9) | (0.7) | (1.3) | (0.9) |
| Foreign Object Penetration (p = .0001) | | | | | |
| Mean | 1.0 | 1.0 | 1.0 | 2.2 | 1.1 |
| S.D. | (0.2) | (0.2) | (0.0) | (1.1) | (0.3) |
| Digital Penetration (p = .12) | | | | | |
| Mean | 1.3 | 1.2 | 1.3 | 1.6 | 1.2 |
| S.D. | (0.6) | (0.6) | (0.7) | (0.8) | (0.6) |

TABLE 5 (cont'd)

**RAPE CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES
BY RAPIST TYPE (GROTH MODIFIED)**

| BEHAVIORAL SCALE | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|----------------------------------|------------------------------|------------------------------|-----------------------------|------------------------------|------------------|
| Resistance Scales: | | | | | |
| Verbal | | | | | |
| Resistance (p = .004) | | | | | |
| Mean | 2.4 | 2.1 | 2.1 | 2.8 | 2.3 |
| S.D. | (1.2) | (1.2) | (1.4) | (1.2) | (1.3) |
| Non-Confrontative | | | | | |
| Resistance (p = .09) | | | | | |
| Mean | 1.3 | 1.2 | 1.3 | 1.6 | 1.3 |
| S.D. | (0.6) | (0.6) | (0.7) | (0.8) | (0.6) |
| Physical | | | | | |
| Resistance (p = .12) | | | | | |
| Mean | 1.6 | 1.6 | 2.1 | 1.7 | 1.6 |
| S.D. | (0.9) | (1.1) | (1.2) | (1.0) | (1.0) |
| Rapist Response to Victim | | | | | |
| Resistance (p = .0001) | | | | | |
| Mean | 1.8 | 2.0 | 3.2 | 2.8 | 2.0 |
| S.D. | (0.8) | (1.1) | (1.5) | (1.3) | (1.1) |
| Attitude Scales: | | | | | |
| Complimentary/Demeaning | | | | | |
| About Self (p = .03) | | | | | |
| Mean | 3.1 | 3.0 | 3.0 | 2.0 | 3.0 |
| S.D. | (0.4) | (0.4) | (0.2) | (0.3) | (0.4) |
| Anger (p = .0001) | | | | | |
| Mean | 1.8 | 2.9 | 4.4 | 3.8 | 2.5 |
| S.D. | (0.8) | (1.0) | (0.7) | (1.0) | (1.1) |
| Complimentary/Demeaning | | | | | |
| About Victim (p = .0001) | | | | | |
| Mean | 2.8 | 3.4 | 3.8 | 4.4 | 3.2 |
| S.D. | (0.6) | (0.6) | (0.7) | (0.5) | (0.7) |

TABLE 5 (cont'd)

**RAPE CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES
BY RAPIST TYPE (GROTH MODIFIED)**

| RAPE SCALE | POWER- REASSR. (n=259) | POWER- ASSERT. (n=271) | ANGER- RETAL. (n= 24) | ANGER- EXCITN. (n= 11) | TOTAL (n=565) |
|--------------------------------------|------------------------------|------------------------------|-----------------------------|------------------------------|------------------|
| 5. Previous Scales (cont'd): | | | | | |
| Apologetic/ Demanding (p = .0001) | | | | | |
| Mean | 3.6 | 4.0 | 3.6 | 4.0 | 3.8 |
| S.D. | (0.7) | (0.5) | (0.7) | (0.5) | (0.6) |
| Profanity (p = .0001) | | | | | |
| Mean | 1.3 | 1.9 | 2.3 | 2.9 | 1.7 |
| S.D. | (0.7) | (1.2) | (1.2) | (1.6) | (1.1) |
| Victim Selection (p = .0001) | | | | | |
| Mean | 2.9 | 2.6 | 2.5 | 3.6 | 2.7 |
| S.D. | (1.0) | (1.1) | (1.2) | (0.8) | (1.1) |
| Planning of Rape (p = .0001) | | | | | |
| Mean | 3.2 | 3.0 | 2.8 | 4.0 | 3.1 |
| S.D. | (0.7) | (0.8) | (1.0) | (0.5) | (0.8) |
| Injuries (p = .0001) | | | | | |
| Mean | 1.7 | 2.1 | 4.8 | 4.6 | 2.1 |
| S.D. | (1.1) | (1.4) | (0.5) | (0.5) | (1.4) |
| Sensitive/ Macho (p = .0001) | | | | | |
| Mean | 2.4 | 3.8 | 4.3 | 3.7 | 3.2 |
| S.D. | (0.7) | (0.7) | (1.3) | (0.8) | (1.0) |

actual use of a knife. Guns were used by a significant minority of the rapists, but only to threaten the victim; in only three rapes was a gun actually used on the victim. In about one-quarter of the rapes, restraints were used to control the victim; in a minority of instances, the restraints were brought to the scene of the crime by the rapist. More often the restraints were aimed at the scene of the crime. No articles were stolen in almost half of the rapes. In the other half of the rapes, money, credit cards and jewelry were the most common type of articles taken. Personal items of the victim (i.e., souvenirs) were taken in less than ten percent of the rapes. Substance use during the rape was uncommon, although almost one-third of the Anger-Excitation rapes involved levels of substance use perceivable by the victim. (See Table 3.)

The majority of women raped by this particular group of rapists were aged fourteen through thirty-five (the modal age range was 21 through 27 years). White women represented almost two-thirds of the victims, with racial cross-overs (between the victim and perpetrator) occurring in one-third of the rapes. In only a minority of instances did the rapist give any indication to his victim that he had selected her with any specificity. (See Table 4.)

The majority of the 58 behavioral scales used to quantify the interaction occurring between the victim and the perpetrator demonstrated significant differences across the various rape types. These differences suggest that rapes can be differentiated according to certain key concepts and that resultant differences appear on many of the quantifiable behavioral dimensions. Of particular relevance to those interested in advising women about resistance strategies was the finding that the different types of rape encapsulated significant differences in the rapist's response to resistance by the victim. The Power-Reassurance rape was characterized by more sensitivity toward the victim, more attempts to be reassuring, a greater sense of inquisitiveness and

negotiation, more "nuzzling," and a greater interest in cunnilingus. The Anger-Retaliatory rape was characterized by elevated levels of blunt force, blunt force injury, overall victim injury, the expressive use of force, "macho" behavior, a more exaggerated response to physical resistance, and general anger. The Anger-Excitation rape involved more self-disclosure by the perpetrator, more excuses, more hostility toward women, more demands, more threats, more sexually oriented speech, more verbal scripting, more demeaning scripting, more scripting designed to compliment the rapist, more behavioral scripting, more victim injury from non-blunt force, greater use of bindings, more sadistic infliction of pain, more frequent transportation of a victim, more attempts to protect identity, greater duration of the assault, more planning of the rape, more humiliation of the victim, more enjoyment by the perpetrator, more fellatio, more anal intercourse, more foreign object penetration, more digital penetration, more response to verbal and non-confrontative resistance, more demeaning statements about the victim, more demands, more profanity, and more planning. Interestingly, the Power-Assertive rape showed no distinct behavior characteristics, suggesting that it is defined more by its position between the other types of rape than by its unique characteristics per se. (See Table 5.)

Many of the original assertions made by Hazelwood (1987) based upon his investigatory experience were determined using quantifiable scales in the current data. The Power-Reassurance rape contained minimal levels of force, more pre-selected victims, apologies to the victim, and the assault of women in the vicinity of their own homes. The Power-Assertive rape was characterized by a deceptive form of approach and higher levels of violence. The Anger-Retaliatory (n=4) rape contained the most extreme forms of violence, the least amount of planning, and the shortest duration. The Anger-Excitation (n=7) rape was carefully planned, more frequently used bindings,

longer duration, and was organized by more sexual acts designed to inflict pain.

The reliability of the coding and the differences on crime scene variables observed across different rape types suggests: 1) that crime scene information obtained from the text of the statement can be used to sort rapes into a number of minimally homogeneous groups; and that these groups can be arranged according to certain themes that emanate from the Groth typology that seeks to describe rapist characteristics or motivations. In this regard, it is important to emphasize, however, that the two systems of sorting (i.e., type of rape as contrasted to type of rapist) are not necessarily the same, as one predominant type of rapist may commit different types of rapes over the course of his rape career. This topic is explored further in Chapter VII, which examines the consistency and change manifest by a rapist across a number of offenses. The importance of these differences in rape behavior as they may help to inform, predict or identify identifiable differences among rapists is also explored further below.

VICTIM STATEMENT DATA SET (DATA SET I): RAPIST CLASSIFICATION

Table 6 summarizes the numerous types of rapist classification used in the current study.

These include:

1. the Groth composite classification that derived from a "clinical" assessment of the various offenses perpetrated by a single offender in both Data Set I (VSDS) and Data Set II (OIDS);
2. determination of the MTC:3 classification by Prentky and Knight on the original sample of 41 serial rapists (i.e., Data Set II, OIDS);
3. the offender's "Increaser/Non-Increaser" status determined by regressing the sequence number of the rape against the Blunt Force Scale only and the Blunt Force composite factor (i.e., factor analytically derived) in Data Set I and Data Set II;
4. designation of each rapist as being primarily an indoor or outdoor offender;

TABLE 6

**RAPIST CHARACTERISTICS: TYPING ACCORDING TO THE GROTH,
MTC:3, INCREASER/NON-INCREASER, INDOOR/OUTDOOR, INSIDE/OUTSIDE
CONVEX HULL, GEOGRAPHICAL MODELS,
AND COMMUTER/MARAUDER CLASSIFICATIONS**

| | DATA SET I | DATA SET II | DATA SET III |
|--|-------------------|--------------------|--------------------|
| | (VSDS) (n=108) | (OIDS 1) (n=24) | (OIDS 2) (n=41) |
| CLINICAL TYPE: | | | |
| Power-Reassurance | 43 (40%) | 8 (33%) | --- |
| Power-Assertive | 54 (50%) | 14 (58%) | --- |
| Anger-Retaliatory | 4 (4%) | 0 (0%) | --- |
| Anger-Excitation | 7 (6%) | 2 (8%) | --- |
| MTC:3 CLASSIFICATION: (n=41)* | | | |
| Opportunistic/High Comp | --- | --- | 5 (12%) |
| Opportunistic/Low Comp | --- | --- | 5 (12%) |
| Pervasively Angry | --- | --- | 2 (5%) |
| Sadistic Overt | --- | --- | 5 (12%) |
| Sadistic Muted | --- | --- | 4 (10%) |
| Sexual/High Comp | --- | --- | 12 (29%) |
| Sexual/Low Comp | --- | --- | 4 (10%) |
| Vindictive/High Comp | --- | --- | 3 (7%) |
| Vindictive/Low Comp | --- | --- | 1 (3%) |
| INCREASER/NON-INCREASER STATUS: (n=108) | | | |
| Blunt Force Scale Regression | | | |
| Increasers | 27 (25%) | 8 (33%) | --- |
| Non-Increasers | 81 (75%) | 16 (67%) | --- |
| Force Composite Regression | | | |
| Increasers | 54 (50%) | 11 (46%) | --- |
| Non-Increasers | 54 (50%) | 13 (54%) | --- |

*Categories 1, 2, 3, and 8 also include cases with more sexualized behavior than was anticipated.
Categories 1, 2, 4, and 6 include cases matched to the "nearest type."

TABLE 6 (cont'd)

**RAPIST CHARACTERISTICS: TYPING ACCORDING TO THE GROTH,
MTC:3, INCREASER/NON-INCREASER, INDOOR/OUTDOOR, INSIDE/OUTSIDE
CONVEX HULL, GEOGRAPHICAL MODELS,
AND COMMUTER/MARAUDER CLASSIFICATIONS**

| | DATA SET I | DATA SET II | DATA SET III |
|---|------------|-------------|--------------|
| | (VSDS) | (OIDS 1) | (OIDS 2) |
| | (n=108) | (n=24) | (n=41) |
| INDOOR/OUTDOOR RAPES: (n=108) | | | |
| Predominantly Indoor | 66 (61%) | --- | --- |
| Predominantly Outdoor | 42 (39%) | --- | --- |
| INSIDE/OUTSIDE CONVEX HULL: (n=76) | | | |
| Inside | 18 (24%) | --- | --- |
| Outside | 58 (76%) | --- | --- |
| GEOGRAPHICAL MODEL: (n=76) | | | |
| Model 1 | 10 (13%) | --- | --- |
| Model 2 | 8 (11%) | --- | --- |
| Model 3 | 28 (37%) | --- | --- |
| Model 4 | 30 (39%) | --- | --- |
| COMMUTERS/MARAUDERS: (n=76) | | | |
| Commuters | 39 (51%) | --- | --- |
| Marauders | 37 (49%) | --- | --- |

residence);

7. the designation of the rapist as being either a "Commuter" or "Marauder" as defined by Canter and Larkin (1993).

A number of general observations can be made about these different classification schemes. As found in earlier research, the majority of rapists fell in the Power category (90 percent) of rape (i.e., Power-Reassurance and Power-Assertive), with only 10 percent falling within the two Anger categories (i.e., Anger-Retaliatory and Anger-Excitation). It can be seen that the majority of rapists also did not escalate in their use of violence; using the Blunt Force Scale Regression method, only 25 percent of the rapists were determined to be Increasers. Interestingly, the Convex Hull Polygon and Canter Circle resulted in different relational descriptions of the 76 geographical cases. The Convex Hull covers a substantially smaller area than that covered by the Canter Circle and resulted in a breakdown according to which 24 percent of the rapists lived inside this area and 76 percent outside of the area created by their offense pattern. In striking contrast to the data published by Canter and Larkin (1993), only one-half of the rapists in the current sample lived inside the larger Canter Circle (Marauders), while one-half lived outside this particularly spatial area (Commuters).

As discussed on page 51, one exploratory part of this study involved having the 41 original serial rape cases (OIDS 2) coded by Knight and Prentky using the MTC:3 classification. This coding could only be conducted on this particular data set, as it alone contained the offender information required to complete the MTC:3 coding as currently defined. It was anticipated that this coding might help to inform the bootstrapping from the Groth to the MTC:3 system discussed in detail in Appendix D. As can be seen, this identified the sexualized, high competency rapist as

g the most frequent rapist type in the original sample of 41 serial rapists. Interestingly, Atky and Knight found the entire sample to be more highly sexualized than the rapists coded at Massachusetts Treatment Center, and had to create a new designation to reflect this unique characteristic of the current sample. This difference suggests that serial rapists who have committed 10 or more rapes manifest different rapist types, but are alike in the more extreme end of their sexualizing behavior. This observation may have etiological significance in understanding the highly repetitive form of sexual offending.

VICTIM STATEMENT DATA SET (DATA SET D): CLASSIFICATION OF RAPISTS ACCORDING TO GROTH TYPOLOGY, INCREASER/NON-INCREASER STATUS, INDOOR/OUTDOOR, CONVEX HULL POLYGON, GEOGRAPHICAL MODELS, AND COMMUTER/MARAUDER DISTINCTIONS

Table 7 summarizes modal variable values and Table 8 summarizes mean scale scores for 108 serial rapists according to their clinical type as defined by the Groth typology. As indicated earlier, rapist clinical type was derived from a review of all the rapes perpetrated by a single offender and was coded both to capture the most common and/or progressively apparent type of rape being manifest by the offender (see page 57 for a full explanation of this variable).

As indicated in Table 7, the majority of the demographic and modal variables are not significantly different across the three categories of rapists. The three groups (i.e., the Power-Assurance, Power-Assertive, and Anger-Combined) did not differ significantly in terms of their criminal history, total number of rapes, timing of their offenses (daytime/nighttime or weekday/weekend), location of their offenses (indoor/outdoor), or in terms of their victim

TABLE 7**RAPIST CHARACTERISTICS: DEMOGRAPHICS AND MODAL CHARACTERISTICS
OF RAPES BY RAPIST TYPE**

| MODAL VARIABLES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMBINED (n=11) | TOTAL (n=108) |
|---|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------|
| 1. Rapist Age*: (p = .71) | | | | |
| Under 26 | 15 (41%) | 20 (43%) | 6 (54%) | 41 (43%) |
| 26 + | 22 (60%) | 27 (57%) | 5 (46%) | 54 (57%) |
| 2. Rapist Race*: (p = .02) | | | | |
| White | 21 (62%) | 14 (33%) | 7 (70%) | 42 (49%) |
| Minority | 13 (38%) | 28 (67%) | 3 (30%) | 44 (51%) |
| 3. Total Rapes: (p = .44) | | | | |
| 2 - 4 | 22 (51%) | 30 (56%) | 8 (73%) | 60 (73%) |
| > 4 | 21 (49%) | 24 (44%) | 3 (27%) | 48 (27%) |
| 4. Criminal History: | | | | |
| Criminal History Index (p = .91) | | | | |
| Mean | 866.62 | 795.48 | 768.27 | 820.84 |
| S.D. | (607.49) | (1049.68) | (431.09) | (829.79) |
| Total Violent Crimes (p = .91) | | | | |
| Mean | 1.22 | 1.28 | 1.00 | 1.22 |
| S.D. | (1.65) | (2.21) | (1.41) | (1.91) |
| Total Potentially Violent Crimes (p = .61) | | | | |
| Mean | 2.08 | 2.26 | 1.18 | 2.06 |
| S.D. | (2.31) | (4.01) | (1.25) | (3.20) |

TABLE 7 (cont'd)

**APIST CHARACTERISTICS: DEMOGRAPHICS AND MODAL CHARACTERISTICS
OF RAPES BY RAPIST TYPE**

| MODAL VARIABLES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMBINED (n=11) | TOTAL (n=108) |
|--|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------|
| Criminal History (cont'd): | | | | |
| Total Other Crimes | | | | |
| Against Person (p = .38) | | | | |
| Mean | 1.51 | 0.51 | 1.18 | 0.98 |
| S.D. | (5.08) | (0.88) | (1.66) | (3.28) |
| Total Sexual Crimes (p = .60) | | | | |
| Mean | 6.14 | 4.91 | 5.00 | 5.40 |
| S.D. | (5.05) | (6.51) | (2.24) | (5.60) |
| Total Property Crimes (p = .18) | | | | |
| Mean | 5.12 | 3.34 | 6.09 | 4.38 |
| S.D. | (5.01) | (0.50) | (9.74) | (5.45) |
| Total Drug Crimes (p = .96) | | | | |
| Mean | 0.41 | 0.34 | 0.36 | 0.37 |
| S.D. | (1.07) | (0.87) | (1.21) | (0.98) |
| Total Minor Crimes (p = .98) | | | | |
| Mean | 1.35 | 1.25 | 1.18 | 1.28 |
| S.D. | (2.50) | (0.50) | (1.94) | (2.80) |
| Total Charges (p = .49) | | | | |
| Mean | 18.08 | 14.11 | 16.00 | 15.87 |
| S.D. | (15.69) | (14.68) | (13.92) | (14.96) |
| Modus Operandi: | | | | |
| Contact Site* (p = .42) | | | | |
| Victim's Residence | | | | |
| or Workplace | 29 (67%) | 30 (57%) | 8 (73%) | 67 (63%) |
| Other | 14 (33%) | 23 (43%) | 3 (27%) | 40 (37%) |

TABLE 7 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHICS AND MODAL CHARACTERISTICS
OF RAPES BY RAPIST TYPE**

| MODAL VARIABLES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMBINED (n=11) | TOTAL (n=108) |
|---------------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------|
| 5. Modus Operandi (cont'd): | | | | |
| Location (p = .73) | | | | |
| Indoors | 28 (65%) | 31 (57%) | 7 (64%) | 66 (61%) |
| Outdoors/Variable | 15 (35%) | 23 (43%) | 4 (36%) | 42 (39%) |
| Approach Method (p = .07) | | | | |
| Surprise | 36 (84%) | 36 (67%) | 6 (55%) | 78 (72%) |
| Other | 7 (16%) | 18 (33%) | 5 (45%) | 30 (28%) |
| Bindings (p = .25) | | | | |
| Bindings Used | 8 (19%) | 8 (15%) | 4 (36%) | 20 (19%) |
| Bindings Not Used | 35 (81%) | 46 (85%) | 7 (64%) | 88 (81%) |
| Knife Used/Displayed (p = .08) | | | | |
| Yes | 19 (44%) | 29 (54%) | 9 (82%) | 57 (53%) |
| No | 24 (56%) | 25 (46%) | 2 (18%) | 51 (47%) |
| Gun Used/Displayed (p = .82) | | | | |
| Yes | 5 (12%) | 8 (15%) | 2 (18%) | 15 (14%) |
| No | 38 (88%) | 46 (85%) | 9 (82%) | 93 (86%) |
| Sexual Ritual (p = .28) | | | | |
| Yes | 30 (70%) | 32 (59%) | 9 (82%) | 71 (66%) |
| No | 13 (30%) | 22 (41%) | 2 (18%) | 37 (34%) |
| Victim Race* (p = .56) | | | | |
| White | 34 (81%) | 40 (77%) | 10 (91%) | 84 (80%) |
| Minority | 8 (19%) | 12 (23%) | 1 (9%) | 21 (9%) |
| Day/Night (p = .54) | | | | |
| Daytime/Variable | 9 (21%) | 12 (22%) | 4 (36%) | 25 (23%) |
| Nighttime | 34 (79%) | 42 (78%) | 7 (64%) | 83 (77%) |

TABLE 7 (cont'd)

**APIST CHARACTERISTICS: DEMOGRAPHICS AND MODAL CHARACTERISTICS
OF RAPES BY RAPIST TYPE**

| DAL VARIABLES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMBINED (n=11) | TOTAL (n=108) |
|--|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------|
| Modus Operandi (cont'd): | | | | |
| Weekday/Weekend (p = .81) | | | | |
| Weekdays | 24 (56%) | 30 (56%) | 5 (46%) | 59 (55%) |
| Weekends/Variable | 19 (44%) | 24 (44%) | 6 (54%) | 49 (45%) |
| Articles Taken (p = .70) | | | | |
| Yes | 18 (42%) | 26 (48%) | 4 (36%) | 48 (44%) |
| No | 25 (58%) | 28 (52%) | 7 (64%) | 60 (56%) |
| Transportation (p = .43) | | | | |
| Yes | 5 (12%) | 8 (15%) | 3 (27%) | 16 (15%) |
| No | 38 (88%) | 46 (85%) | 8 (73%) | 92 (85%) |
| Sexual Dysfunction (p = .07) | | | | |
| Yes | 11 (26%) | 8 (15%) | 5 (46%) | 24 (22%) |
| No | 32 (74%) | 46 (85%) | 6 (54%) | 84 (78%) |
| Substance Use (p = .83) | | | | |
| Yes | 5 (12%) | 8 (15%) | 1 (9%) | 14 (13%) |
| No | 38 (88%) | 46 (85%) | 10 (91%) | 94 (87%) |
| Percent Rapes With Anal Intercourse/Inanimate Object Penetration (p = .00001) | | | | |
| Mean | 10.72 | 16.20 | 50.45 | 17.51 |
| S.D. | (19.81) | (19.83) | (30.16) | (23.77) |
| Victim Age (p = .26) | | | | |
| Mean | 31.02 | 28.24 | 26.00 | 29.46 |
| S.D. | (13.68) | (10.44) | (11.50) | (12.19) |
| Oldest Victim* (p = .69) | | | | |
| Under 40 | 25 (60%) | 32 (59%) | 8 (73%) | 65 (61%) |
| 40 + | 17 (40%) | 22 (41%) | 3 (27%) | 42 (39%) |

TABLE 7 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHICS AND MODAL CHARACTERISTICS
OF RAPES BY RAPIST TYPE**

| MODAL VARIABLES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMBINED (n=11) | TOTAL (n=108) |
|------------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------|
| 5. Modus Operandi (cont'd): | | | | |
| Youngest Victim* (p = .42) | | | | |
| Under 19 | 24 (57%) | 25 (46%) | 7 (64%) | 56 (52%) |
| 19 + | 18 (43%) | 29 (54%) | 4 (36%) | 51 (48%) |
| Victim Age Range* (p = .21) | | | | |
| 0 - 16 | 18 (43%) | 26 (48%) | 8 (73%) | 52 (49%) |
| 17 + | 24 (57%) | 28 (52%) | 3 (27%) | 55 (51%) |

Note: * indicates missing data for that variable.

2 percent) and the Anger-Combined (70 percent) rapists were white, while the majority of the Lower-Assertive rapists were non-white¹ (67 percent). These differences do not reflect differences in the number of whites (n=42) and minorities (n=44) in the sample, as the two groups were almost equally represented. They also do not reflect coding biases as the two coders coded the rapes while ignorant as to the race of the perpetrator. The finding that the majority of the Anger-Combined rapists were white parallels an earlier study by two of the authors (Dietz, Hazelwood, and Warren, 1990) which found that 29 of the 30 sexually sadistic criminal offenders who were studied were white.

The second significant difference involves the frequency with which the perpetrator committed anal intercourse. As indicated in Table 7, the Anger-Combined rapist perpetrated rapes that included anal penetration 50 percent of the time, while the other two groups perpetrated anal rapes in only 10 to 16 percent of their offenses. This finding also brings to mind the Dietz et al. study referenced above, which found that the majority of sexually sadistic offenders showed a preference for anal intercourse. The authors hypothesized that this preference embodied the control (through the infliction of pain) and degradation that seemed to lie at the core of the sexually sadistic arousal pattern.

Table 7 also reflects certain trends in terms of the manner of approach, the use of a knife, and the presence of a sexual dysfunction across the three groups. Once again, the Anger-Combined group demonstrated the significant differences (i.e., approach strategies beyond that of surprise, the presence or display of a knife during the rape, and the manifestation of some type of observable sexual dysfunction).

The non-white rapists consisted of three Hispanics (6 percent) and forty-one African American males (94 percent).

These findings suggest, as mentioned in the description of the rape-wise analyses (in which the unit of analyses are the individual rapes perpetrated by the rapists, and not characteristics of the rapists themselves), that the Anger-Combined rapist is quite distinctive in his behavior and more easily distinguishable from the Power-Reassurance and Power-Assertive rapists than they are from each other. The Power-Reassurance and Power-Assertive categorizations, at least in the current sample, seem to be significantly influenced by socio-cultural influences associated with race.

The overall nature (or lack thereof) of these findings also suggests that the Groth typology might be somewhat limited in terms of its usefulness in organizing observations regarding aspects of a rapist's history or behavior. The three groups were not found to be significantly different in terms of the perpetrator's age, the victim's age, the perpetrator's criminal history, or the total number of rapes perpetrated by each offender--characteristics that are important in the construction of a criminal investigative profile. This finding may be an artifact of having to collapse many of the variables into dichotomous categories in order to test for significance, a statistical maneuver that may camouflage more subtle behavioral distinctions in the data. More likely, it reflects the difficulty of finding relevant distinctions when attempting to characterize individuals according to fairly simplistic paradigms. It would seem more likely that certain behaviors or dimensions of behaviors encapsulated in these classifications (i.e., the amount of gratuitous violence, the sophistication of the planning, and the use of bindings) may hold the greatest potential for discovering empirical links between the characteristics of an offender and his crime scene behavior. Interestingly, this type of approach would, however, circumvent the "why" of the "what-why-who" process of deduction (see discussion of Pinizzotto and Finkel, 1990, on p.

id, in bypassing the motivational level of meta-analysis, seek to discover singular correlations might ultimately be of more limited use to law enforcement in trying to determine a yet identified individual.

Table 8 highlights 22 scales that demonstrate significant differences across the three rapist s. These scales are not dissimilar to those reported in the previous section that looked at rences in rape type as contrasted to rapist type. As indicated, the Power-Reassurance rapist aracterized by greater sensitivity, inquisitiveness, and reassurance towards his victim; a ngness to engage in verbal negotiation with the victim; and more extensive efforts to protect dentity. Upon review, these dynamics do seem to suggest a less hostile motivation for the al assault and the potential for a less aggressive outcome. Unexpectedly, the Power- ssurance rapist also manifested more extensive efforts to protect his identity. This may reflect s impulsive manner of attack, a desire for more prolonged interaction with the victim, or a ency to select victims that are more familiar and, therefore, more likely to identify the rapist.

As in the earlier analyses, the Power-Assertive rapist is the least unique in terms of his all behavioral pattern. He is perceived as being particularly "macho" and demanding and, e more violent than the Power-Reassurance rapist, he inflicts fewer injuries and uses lower ls of violence than the Anger category of rapists.

As mentioned above, the Anger category of rapists demonstrates the most unique set of ing characteristics. As a group, they present as being more hostile and are involved in both al scripting and scripting designed to humiliate the victim. This type of rapist also uses higher ls of force; inflicts more injury both generally and in terms of non-blunt force injury; and is e frequently involved in the sadistic infliction of pain. The Anger rapists tend to more often

TABLE 8

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF RAPES BY RAPIST TYPE (GROTH MODIFIED)**

| INTERACTIONAL SCALES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMB. (n=11) | GRAND MEAN (n=108) |
|--------------------------------------|--------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| 1. Verbal Scales: | | | | |
| Personal Information (p = .54) | | | | |
| Mean | 1.59 | 1.54 | 1.75 | 1.58 |
| S.D. | (.63) | (.52) | (.74) | (.58) |
| Excuses (p = .14) | | | | |
| Mean | 1.19 | 1.15 | 1.33 | 1.18 |
| S.D. | (.23) | (.24) | (.50) | (.28) |
| Self-Promotion (p = .73) | | | | |
| Mean | 1.09 | 1.10 | 1.15 | 1.10 |
| S.D. | (.19) | (.25) | (.22) | (.23) |
| Self-Deprecating (p = .17) | | | | |
| Mean | 1.12 | 1.04 | 1.06 | 1.07 |
| S.D. | (.27) | (.14) | (.13) | (.20) |
| Sensitivity to Victim (p = .0001) | | | | |
| Mean | 2.17 | 1.60 | 1.68 | 1.84 |
| S.D. | (.58) | (.47) | (.43) | (.58) |
| Inquisitive (p = .07) | | | | |
| Mean | 1.69 | 1.43 | 1.37 | 1.53 |
| S.D. | (.74) | (.48) | (.38) | (.60) |
| Complimentary to Victim (p = .41) | | | | |
| Mean | 1.21 | 1.11 | 1.16 | 1.15 |
| S.D. | (.49) | (.25) | (.32) | (.37) |
| Hostility/Women (p = .0001) | | | | |
| Mean | 1.15 | 1.48 | 1.74 | 1.37 |
| S.D. | (.21) | (.55) | (.63) | (.49) |
| Hostility/General (p = .41) | | | | |
| Mean | 1.02 | 1.05 | 1.05 | 1.04 |
| S.D. | (.08) | (.13) | (.12) | (.11) |
| Reassuring (p = .0001) | | | | |
| Mean | 1.94 | 1.48 | 1.50 | 1.67 |
| S.D. | (.59) | (.45) | (.37) | (.55) |

TABLE 8 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF RAPES BY RAPIST TYPE (GROTH MODIFIED)**

| INTERACTIONAL SCALES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMB. (n=11) | GRAND MEAN (n=108) |
|---|--------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| Verbal Scales (cont'd): | | | | |
| Apologetic (p = .61) | | | | |
| Mean | 1.11 | 1.11 | 1.18 | 1.11 |
| S.D. | (.21) | (.24) | (.35) | (.24) |
| Demands (p = .77) | | | | |
| Mean | 3.07 | 3.11 | 3.00 | 3.09 |
| S.D. | (.44) | (.62) | (.40) | (.53) |
| Threats (p = .11) | | | | |
| Mean | 2.09 | 2.31 | 2.39 | 2.23 |
| S.D. | (.54) | (.58) | (.72) | (.58) |
| Sexually-Oriented Speech (p = .65) | | | | |
| Mean | 1.62 | 1.61 | 1.79 | 1.63 |
| S.D. | (.71) | (.52) | (.62) | (.61) |
| Verbal Scripting (p = .009) | | | | |
| Mean | 1.07 | 1.11 | 1.38 | 1.12 |
| S.D. | (.21) | (.22) | (.67) | (.30) |
| Demeaning Scripting (p = .05) | | | | |
| Mean | 1.04 | 1.06 | 1.20 | 1.06 |
| S.D. | (.12) | (.16) | (.43) | (.19) |
| Scripting to Compliment Rapist (p = .48) | | | | |
| Mean | 1.04 | 1.06 | 1.11 | 1.06 |
| S.D. | (.17) | (.15) | (.22) | (.17) |
| Behavioral Scripting (p = .32) | | | | |
| Mean | 1.70 | 1.52 | 1.55 | 1.59 |
| S.D. | (.75) | (.47) | (.69) | (.62) |
| Verbal Negotiation (p = .01) | | | | |
| Mean | 1.22 | 1.07 | 1.08 | 1.13 |
| S.D. | (.33) | (.19) | (.14) | (.26) |

TABLE 8 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF RAPES BY RAPIST TYPE (GROTH MODIFIED)**

| INTERACTIONAL SCALES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMB. (n=11) | GRAND MEAN (n=108) |
|---|--------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| 2. Physical Scales: | | | | |
| Blunt Force (p = .0001) | | | | |
| Mean | 1.19 | 1.41 | 1.91 | 1.37 |
| S.D. | (.30) | (.49) | (.44) | (.47) |
| Victim Injury/Blunt Force (p = .0001) | | | | |
| Mean | 1.15 | 1.30 | 1.71 | 1.28 |
| S.D. | (.22) | (.36) | (.39) | (.35) |
| Victim Injury/Other than Blunt Force (p = .0001) | | | | |
| Mean | 1.63 | 1.79 | 2.28 | 1.78 |
| S.D. | (.39) | (.38) | (.73) | (.46) |
| Total Victim Injury (p = .0001) | | | | |
| Mean | 1.32 | 1.51 | 2.17 | 1.50 |
| S.D. | (.30) | (.39) | (.62) | (.45) |
| Bindings (p = .14) | | | | |
| Mean | 1.55 | 1.44 | 1.90 | 1.53 |
| S.D. | (.75) | (.65) | (.79) | (.71) |
| Binding Materials (p = .08) | | | | |
| Mean | 1.55 | 1.40 | 2.01 | 1.52 |
| S.D. | (.80) | (.70) | (1.21) | (.82) |
| Sadistic Infliction of Pain (p = .0001) | | | | |
| Mean | 1.05 | 1.22 | 1.95 | 1.22 |
| S.D. | (.16) | (.40) | (.75) | (.46) |
| Function of Force (p = .0001) | | | | |
| Mean | 1.23 | 1.51 | 2.22 | 1.47 |
| S.D. | (.38) | (.48) | (.68) | (.54) |
| Captivity | | | | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 |
| S.D. | (.00) | (.00) | (.00) | (.00) |

TABLE 8 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF RAPES BY RAPIST TYPE (GROTH MODIFIED)**

| INTERACTIONAL SCALES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMB. (n=11) | GRAND MEAN (n=108) |
|---|--------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| 2. Physical Scales (cont'd): | | | | |
| Effort Not to Harm (p = .0006) | | | | |
| Mean | 1.50 | 1.20 | 1.25 | 1.33 |
| S.D. | (.48) | (.26) | (.33) | (.39) |
| Transportation of Victim (p = .57) | | | | |
| Mean | 1.28 | 1.44 | 1.55 | 1.39 |
| S.D. | (.83) | (.96) | (1.04) | (.92) |
| Rapist's Efforts to Protect Identity (p = .03) | | | | |
| Mean | 2.14 | 1.80 | 1.98 | 1.95 |
| S.D. | (.58) | (.62) | (.79) | (.64) |
| Duration of Assault (p = .67) | | | | |
| Mean | 2.14 | 2.14 | 2.35 | 2.16 |
| S.D. | (.76) | (.71) | (.82) | (.74) |
| Macho Behavior (p = .0001) | | | | |
| Mean | 2.49 | 3.35 | 3.26 | 3.00 |
| S.D. | (.66) | (.65) | (.42) | (.75) |
| Planning of Rape (p = .36) | | | | |
| Mean | 3.07 | 2.96 | 3.22 | 3.03 |
| S.D. | (.63) | (.60) | (.64) | (.62) |
| Humiliation of Victim (p = .0001) | | | | |
| Mean | 1.20 | 1.54 | 2.36 | 1.49 |
| S.D. | (.29) | (.53) | (1.08) | (.63) |
| Enjoyment (p = .97) | | | | |
| Mean | 1.24 | 1.25 | 1.22 | 1.24 |
| S.D. | (.37) | (.36) | (.27) | (.35) |
| 3. Sexual Behavior: | | | | |
| Kissing (p = .28) | | | | |
| Mean | 1.37 | 1.23 | 1.27 | 1.29 |
| S.D. | (.46) | (.37) | (.52) | (.42) |

TABLE 8 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF RAPES BY RAPIST TYPE (GROTH MODIFIED)**

| INTERACTIONAL SCALES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMB. (n=11) | GRAND MEAN (n=108) |
|-------------------------------------|--------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| 3. Sexual Behavior (cont'd): | | | | |
| Nuzzling (p = .21) | | | | |
| Mean | 1.37 | 1.21 | 1.23 | 1.28 |
| S.D. | (.60) | (.31) | (.35) | (.45) |
| Fondling (p = .65) | | | | |
| Mean | 1.57 | 1.50 | 1.41 | 1.52 |
| S.D. | (.52) | (.60) | (.32) | (.54) |
| Fellatio (p = .98) | | | | |
| Mean | 1.53 | 1.55 | 1.56 | 1.54 |
| S.D. | (.61) | (.53) | (.79) | (.58) |
| Cunnilingus (p = .46) | | | | |
| Mean | 1.22 | 1.15 | 1.08 | 1.17 |
| S.D. | (.49) | (.23) | (.23) | (.36) |
| Anal Sex (p = .0001) | | | | |
| Mean | 1.13 | 1.19 | 1.69 | 1.22 |
| S.D. | (.29) | (.30) | (.76) | (.40) |
| Vaginal Sex (p = .60) | | | | |
| Mean | 2.28 | 2.21 | 2.41 | 2.26 |
| S.D. | (.72) | (.56) | (.60) | (.63) |
| Foreign Object | | | | |
| Penetration (p = .0001) | | | | |
| Mean | 1.02 | 1.02 | 1.25 | 1.04 |
| S.D. | (.08) | (.08) | (.42) | (.16) |
| Digital Penetration (p = .22) | | | | |
| Mean | 1.22 | 1.25 | 1.43 | 1.25 |
| S.D. | (.28) | (.37) | (.57) | (.36) |
| 4. Resistance Scales: | | | | |
| Verbal Resistance (p = .82) | | | | |
| Mean | 2.40 | 2.30 | 2.31 | 2.34 |
| S.D. | (.68) | (.82) | (1.10) | (.79) |

TABLE 8 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF RAPES BY RAPIST TYPE (GROTH MODIFIED)**

| INTERACTIONAL SCALES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMB. (n=11) | GRAND MEAN (n=108) |
|---------------------------------|--------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
|---------------------------------|--------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|

Resistance Scales (cont'd):**Non-Confrontative****Resistance ($p = .34$)**

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 1.25 | 1.31 | 1.41 | 1.30 |
| S.D. | (.26) | (.38) | (.53) | (.35) |

Physical Resistance ($p = .61$)

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 1.64 | 1.71 | 1.52 | 1.66 |
| S.D. | (.61) | (.66) | (.33) | (.61) |

Rapist Response to Victim**Resistance ($p = .19$)**

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 1.97 | 2.07 | 2.39 | 2.07 |
| S.D. | (.54) | (.73) | (.83) | (.68) |

Previous Scales:**Complimentary/Demeaning****About Self ($p = .09$)**

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 3.05 | 2.96 | 2.97 | 3.00 |
| S.D. | (.19) | (.19) | (.10) | (.19) |

Anger ($p = .0001$)

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 2.00 | 2.72 | 3.36 | 2.50 |
| S.D. | (.57) | (.50) | (.48) | (.69) |

Complimentary/Demeaning**About Victim ($p = .0001$)**

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 2.93 | 3.28 | 3.66 | 3.18 |
| S.D. | (.41) | (.31) | (.47) | (.43) |

Apologetic/Demanding**($p = .03$)**

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 3.62 | 3.81 | 3.81 | 3.73 |
| S.D. | (.34) | (.32) | (.50) | (.36) |

Profanity ($p = .0001$)

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 1.31 | 1.83 | 2.03 | 1.64 |
| S.D. | (.40) | (.67) | (.79) | (.64) |

Victim Selection ($p = .12$)

| | | | | |
|-------------|--------------|--------------|--------------|--------------|
| Mean | 2.75 | 2.50 | 3.01 | 2.65 |
| S.D. | (.90) | (.84) | (.61) | (.85) |

TABLE 8 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF RAPES BY RAPIST TYPE (GROTH MODIFIED)**

| INTERACTIONAL SCALES | POWER- REASSR. (n=43) | POWER- ASSERT. (n=54) | ANGER COMB. (n=11) | GRAND MEAN (n=108) |
|---|--------------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|
| 5. Previous Scales (cont'd): | | | | |
| Planning of Rape ($p = .27$) | | | | |
| Mean | 3.00 | 2.92 | 3.25 | 2.99 |
| S.D. | (.57) | (.90) | (.71) | (.93) |
| Injuries ($p = .0001$) | | | | |
| Mean | 1.67 | 2.26 | 3.52 | 2.15 |
| S.D. | (.57) | (.90) | (.66) | (.93) |
| Sensitive/Macho ($p = .0001$) | | | | |
| Mean | 2.56 | 3.47 | 3.49 | 3.11 |
| S.D. | (.51) | (.54) | (.46) | (.68) |

use bindings in their rapes; they are significantly more interested in anal intercourse and penetration with an inanimate object; and they seem intent upon expressing anger, humiliating their victims, and demanding certain behaviors and responses from them.

These results do suggest varying types of motivations for the common crime of rape. Some rapists seem to be interested in creating a fairly mutual interaction with their victim; others in expressing certain "macho" forms of behavior; and others in humiliating and physically and sexually endangering their victim. As noted above, these differences do not, however, correlate with the offender's criminal history variables nor with the overall number of rapes perpetrated by the rapist. Some preliminary work by Prentky, Knight, Lee, and Cerce (1995) does suggest, however, that some dimensions of rape type (e.g. level of impulsivity) are correlated with different rates of recidivism, a possibility that suggests that dimensions of rape type rather than rape type per se might prove useful for these correlational and predictive inquiries.

Table 9 summarizes the demographic and modal variables for the Increasers and Non-Increasers. As detailed on page 55, the Increaser/Non-Increaser status of a rapist was determined by regressing changes in the score on the Blunt Force Scale for each rape by the sequence number of the rape for each offender. As indicated, this resulted in 27 of the rapists being designated as Increasers and 81 as Non-Increasers in the current study.

The Increaser/Non-Increaser distinction resulted in a number of significant differences on the demographic and modal variables. To begin, the Increasers were found to be predominantly white; of 19 Increasers for whom racial information was known, only 4 (21 percent) were Hispanic or African-American. Given this finding, the original sample of 41 serial rapists on which this distinction was first derived was reexamined in terms of its racial make-up, and a

TABLE 9

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES BY INCREASER STATUS**

| INCREASE IN BLUNT FORCE | | | |
|---|--------------|---------------|------------------|
| MODAL VARIABLES | NO (n=81) | YES (n=27) | TOTAL (n=108) |
| 1. Rapist Age*: (p = .76) | | | |
| Under 26 | 30 (42%) | 11 (46%) | 41 (43%) |
| 26 + | 41 (58%) | 13 (54%) | 54 (57%) |
| 2. Rapist Race*: (p = .003) | | | |
| White | 27 (40%) | 15 (79%) | 42 (49%) |
| Minority | 40 (60%) | 4 (21%) | 44 (51%) |
| 3. Total Rapes: (p = .002) | | | |
| 2 - 4 | 51 (63%) | 9 (33%) | 60 (73%) |
| > 4 | 30 (37%) | 18 (67%) | 48 (27%) |
| 4. Criminal History: | | | |
| Criminal History Index (p = .26) | | | |
| Mean | 876.06 | 645.14 | 820.84 |
| S.D. | (912.34) | (454.20) | (829.79) |
| Total Violent Crimes (p = .10) | | | |
| Mean | 1.41 | 0.67 | 1.22 |
| S.D. | (2.10) | (1.05) | (1.91) |
| Total Potentially Violent Crimes (p = .08) | | | |
| Mean | 2.39 | 1.08 | 2.06 |
| S.D. | (3.52) | (1.67) | (3.20) |

TABLE 9 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES BY INCREASER STATUS**

| MODAL VARIABLES | <u>INCREASE IN BLUNT FORCE</u> | | |
|-------------------------------------|--------------------------------|---------------|------------------|
| | NO (n=81) | YES (n=27) | TOTAL (n=108) |
| Criminal History (cont'd): | | | |
| Total Other Crimes | | | |
| Against Person ($p = .54$) | | | |
| Mean | 1.10 | 0.63 | 0.98 |
| S.D. | (3.73) | (1.24) | (3.28) |
| Total Sexual Crimes ($p = .60$) | | | |
| Mean | 5.58 | 4.88 | 5.40 |
| S.D. | (5.88) | (4.78) | (5.60) |
| Total Property Crimes ($p = .46$) | | | |
| Mean | 4.59 | 3.63 | 4.38 |
| S.D. | (4.89) | (6.92) | (5.45) |
| Total Drug Crimes ($p = .10$) | | | |
| Mean | 0.46 | 0.08 | 0.37 |
| S.D. | (1.09) | (.41) | (0.98) |
| Total Minor Crimes ($p = .09$) | | | |
| Mean | 1.56 | 0.46 | 1.28 |
| S.D. | (3.11) | (1.28) | (2.80) |
| Total Charges ($p = .09$) | | | |
| Mean | 17.41 | 11.33 | 15.87 |
| S.D. | (15.72) | (11.59) | (14.96) |
| Modus Operandi: | | | |
| Contact Site* ($p = .34$) | | | |
| Victim's Residence | | | |
| or Workplace | 48 (60%) | 19 (70%) | 67 (63%) |
| Other | 32 (40%) | 8 (30%) | 40 (37%) |

TABLE 9 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES BY INCREASER STATUS**

| | <u>INCREASE IN BLUNT FORCE</u> | | |
|------------------------------------|--------------------------------|---------------|------------------|
| MODAL VARIABLES | NO (n=81) | YES (n=27) | TOTAL (n=108) |
| 5. Modus Operandi (cont'd): | | | |
| Location (p = .04) | | | |
| Indoors | 45 (56%) | 21 (78%) | 66 (61%) |
| Outdoors/Variable | 36 (44%) | 6 (22%) | 42 (39%) |
| Approach Method (p = .08) | | | |
| Surprise | 55 (68%) | 23 (85%) | 78 (72%) |
| Other | 26 (32%) | 4 (15%) | 30 (28%) |
| Bindings (p = 1.00) | | | |
| Bindings Used | 15 (19%) | 5 (19%) | 20 (19%) |
| Bindings Not Used | 66 (81%) | 22 (81%) | 88 (81%) |
| Knife Used/Displayed (p = .58) | | | |
| Yes | 37 (46%) | 14 (52%) | 57 (53%) |
| No | 44 (54%) | 13 (48%) | 51 (47%) |
| Gun Used/Displayed (p = .26) | | | |
| Yes | 13 (16%) | 2 (7%) | 15 (14%) |
| No | 68 (84%) | 25 (93%) | 93 (86%) |
| Sexual Ritual (p = .73) | | | |
| Yes | 54 (67%) | 17 (63%) | 71 (66%) |
| No | 27 (33%) | 10 (37%) | 37 (34%) |
| Victim Race* (p = .09) | | | |
| White | 61 (76%) | 23 (92%) | 84 (80%) |
| Minority | 19 (24%) | 2 (8%) | 21 (9%) |
| Day/Night (p = .09) | | | |
| Daytime/Variable | 22 (27%) | 3 (12%) | 25 (23%) |
| Nighttime | 59 (73%) | 24 (88%) | 83 (77%) |

TABLE 9 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES BY INCREASER STATUS**

| | <u>INCREASE IN BLUNT FORCE</u> | | |
|---|--------------------------------|---------------|------------------|
| MODAL VARIABLES | NO (n=81) | YES (n=27) | TOTAL (n=108) |
| Modus Operandi (cont'd): | | | |
| Weekday/Weekend (p = .91) | | | |
| Weekdays | 44 (54%) | 15 (56%) | 59 (55%) |
| Weekends/Variable | 37 (46%) | 12 (44%) | 49 (45%) |
| Articles Taken (p = .07) | | | |
| Yes | 40 (49%) | 8 (30%) | 48 (44%) |
| No | 41 (51%) | 19 (70%) | 60 (56%) |
| Transportation (p = .53) | | | |
| Yes | 70 (86%) | 22 (82%) | 16 (15%) |
| No | 11 (14%) | 5 (18%) | 92 (85%) |
| Sexual Dysfunction (p = .59) | | | |
| Yes | 19 (24%) | 5 (19%) | 24 (22%) |
| No | 62 (76%) | 22 (81%) | 84 (78%) |
| Substance Use (p = .74) | | | |
| Yes | 11 (14%) | 3 (11%) | 14 (13%) |
| No | 70 (86%) | 24 (89%) | 94 (87%) |
| Percent Rapes With Anal Intercourse/Inanimate Object Penetration (p = .23) | | | |
| Mean | 15.93% | 22.26% | 17.51% |
| S.D. | (22.49) | (27.15) | (23.77) |
| Victim Age (p = .96) | | | |
| Mean | 28.56 | 28.72 | 29.46 |
| S.D. | (14.88) | (15.18) | (12.19) |
| Oldest Victim* (p = .007) | | | |
| Under 40 | 55 (68%) | 10 (38%) | 65 (61%) |
| 40 + | 26 (32%) | 16 (62%) | 42 (39%) |

TABLE 9 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES BY INCREASER STATUS**

INCREASE IN BLUNT FORCE

| MODAL VARIABLES | NO (n=81) | YES (n=27) | TOTAL (n=108) |
|------------------------------------|----------------------|-----------------------|--------------------------|
| 5. Modus Operandi (cont'd): | | | |
| Youngest Victim* (p = .78) | | | |
| Under 19 | 43 (53%) | 13 (50%) | 56 (52%) |
| 19 + | 38 (47%) | 13 (50%) | 51 (48%) |
| Victim Age Range* (p = .23) | | | |
| 0 - 16 | 42 (52%) | 10 (39%) | 52 (49%) |
| 17 + | 39 (48%) | 16 (62%) | 55 (51%) |

Note: * indicates missing data for that variable.

ilar racial pattern was observed. In the original study of 41 serial rapists, 35 of the rapists were white, 5 were black, and 1 was Hispanic. The 10 Increasers identified in this sample were white. This finding suggests a fundamental difference in the rape behavior of white and minority rapists, with the white rapists more often escalating in the amount of blunt force used from first to last rape. White and minority rapists do not, however, differ on the amount of blunt force used at time of the first rape, thereby suggesting that changes across the series of rapes rather than differences in static levels of blunt force are responsible for these differences.

As indicated in Table 9, Increasers also committed significantly more rapes (67 percent of Increasers had more than four victims), but surprisingly showed a trend toward having less extensive general criminal histories. They demonstrated a trend towards fewer minor, drug-related, violent, potentially violent, and total number of crimes when compared to the Non-Increasers. While one cannot conclude, definitively, the meaning of this trend, it would seem to suggest that the Increasers are not generic criminals per se but offenders who are particularly interested in various forms of sexual violence. The Non-Increasers appear to be more diversified and more consistently involved in the full spectrum of criminal offending. Certain aspects of the rapist's modus operandi also differentiate between the two groups. Increasers routinely rape their victims indoors (78 percent of Increasers rape predominantly indoors) and rape more victims over age of 40 years (62 percent), despite no difference in their own age when compared to the Non-Increasers. The data also demonstrate trends which suggest that the Increasers more often use a surprise approach, rape more exclusively during the nighttime, predominantly rape white victims, and more often do not take items from their victims. These differences, again, point to the specificity of the Increasers' rape behavior and argue against a more impulsive and more

generic type of criminal offending.

Table 10 summarizes differences between the Increaseers and Non-Increaseers at the time of the first rape on the 58 behavioral scales that quantify the interaction occurring between the rapist and his victim during the rape. As indicated, 19 of the scales resulted in significant differences between the two groups. Specifically, the Increaseers conveyed more personal information about themselves to the victim, made more excuses, expressed more hostility in general and toward women in particular, manifested an interest in verbal scripting and scripting designed to compliment the rapist, used more blunt force, inflicted more injuries on the victim, used more force than necessary to complete the rape, perpetrated assaults that lasted longer and involved more planning, behaved in ways that appeared to be designed to humiliate the victim, demonstrated a preference for penetration with a foreign object, expressed more profanity, and were more specific in their selection of their victims. These differences again suggest greater hostility among the Increaseers, a more planned and possibly fantasy-based substrate to the offense, and a focus on the specificity of the sexual assault that argues against a more generic criminal motivation. These differences were apparent at the time of the first rape, suggesting that these differences in behavior or motivation actually preceded the escalation of violence that subsequently led to a rapist being designated an Increaseer.

Table 11 summarizes differences between rapists who rape predominantly indoors and those who rape predominantly outdoors. As indicated, the majority of rapists (61 percent) tend to rape predominantly indoors. Those who rape predominantly outdoors, however, have fewer rape victims but are characterized by criminal histories that have more total violent crimes than the indoor rapists. There is also a trend for the outdoor rapists to have more potentially violent and

TABLE 10

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY INCREASER STATUS**

| | <u>INCREASE IN BLUNT FORCE</u> | | |
|--------------------------------------|--------------------------------|---------------|--------------------------|
| | NO (n=81) | YES (n=27) | GRAND MEAN (n=108) |
| VERBACTIONAL SLES | | | |
| Verbal Scales: | | | |
| Personal Information (p = .05) | | | |
| Mean | 1.52 | 1.77 | 1.58 |
| S.D. | (.50) | (.76) | (.58) |
| Excuses (p = .06) | | | |
| Mean | 1.15 | 1.27 | 1.18 |
| S.D. | (.21) | (.42) | (.28) |
| Self-Promotion (p = .30) | | | |
| Mean | 1.07 | 1.18 | 1.10 |
| S.D. | (.18) | (.32) | (.23) |
| Self-Deprecating (p = .30) | | | |
| Mean | 1.06 | 1.11 | 1.07 |
| S.D. | (.20) | (.22) | (.20) |
| Sensitivity to Victim (p = .43) | | | |
| Mean | 1.81 | 1.91 | 1.84 |
| S.D. | (.59) | (.55) | (.58) |
| Inquisitive (p = .26) | | | |
| Mean | 1.49 | 1.64 | 1.53 |
| S.D. | (.57) | (.68) | (.60) |
| Complimentary to Victim (p = .08) | | | |
| Mean | 1.12 | 1.26 | 1.15 |
| S.D. | (.37) | (.35) | (.37) |
| Hostility/Women (p = .007) | | | |
| Mean | 1.30 | 1.59 | 1.37 |
| S.D. | (.45) | (.57) | (.49) |
| Hostility/General (p = .04) | | | |
| Mean | 1.03 | 1.08 | 1.04 |
| S.D. | (.08) | (.17) | (.11) |
| Reassuring (p = .68) | | | |
| Mean | 1.65 | 1.70 | 1.67 |
| S.D. | (.55) | (.53) | (.55) |

TABLE 10 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY INCREASER STATUS**

| INTERACTIONAL SCALES | <u>INCREASE IN BLUNT FORCE</u> | | |
|---|--------------------------------|---------------|--------------------------|
| | NO (n=81) | YES (n=27) | GRAND MEAN (n=108) |
| 1. Verbal Scales (cont'd): | | | |
| Apologetic (p = .41) | | | |
| Mean | 1.10 | 1.15 | 1.11 |
| S.D. | (.23) | (.25) | (.24) |
| Demands (p = .83) | | | |
| Mean | 3.08 | 3.10 | 3.09 |
| S.D. | (.57) | (.38) | (.53) |
| Threats (p = .25) | | | |
| Mean | 2.19 | 2.34 | 2.23 |
| S.D. | (.59) | (.55) | (.58) |
| Sexually-Oriented Speech (p = .15) | | | |
| Mean | 1.58 | 1.78 | 1.63 |
| S.D. | (.59) | (.64) | (.61) |
| Verbal Scripting (p = .02) | | | |
| Mean | 1.08 | 1.23 | 1.12 |
| S.D. | (.24) | (.43) | (.30) |
| Demeaning Scripting (p = .48) | | | |
| Mean | 1.06 | 1.09 | 1.06 |
| S.D. | (.17) | (.26) | (.19) |
| Scripting to Compliment Rapist (p = .04) | | | |
| Mean | 1.03 | 1.11 | 1.06 |
| S.D. | (.14) | (.22) | (.17) |
| Behavioral Scripting (p = .65) | | | |
| Mean | 1.58 | 1.64 | 1.59 |
| S.D. | (.65) | (.54) | (.62) |
| Verbal Negotiation (p = .27) | | | |
| Mean | 1.12 | 1.18 | 1.13 |
| S.D. | (.26) | (.27) | (.26) |

TABLE 10 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY INCREASER STATUS**

| INTERACTIONAL SCALES | <u>INCREASE IN BLUNT FORCE</u> | | |
|---|--------------------------------|---------------|--------------------------|
| | NO (n=81) | YES (n=27) | GRAND MEAN (n=108) |
| Physical Scales: | | | |
| Blunt Force ($p = .0002$) | | | |
| Mean | 1.28 | 1.65 | 1.37 |
| S.D. | (.46) | (.36) | (.47) |
| Victim Injury/Blunt Force ($p = .0002$) | | | |
| Mean | 1.21 | 1.50 | 1.28 |
| S.D. | (.34) | (.27) | (.35) |
| Victim Injury/Other than Blunt Force ($p = .33$) | | | |
| Mean | 1.75 | 1.85 | 1.78 |
| S.D. | (.47) | (.45) | (.46) |
| Total Victim Injury ($p = .01$) | | | |
| Mean | 1.44 | 1.69 | 1.50 |
| S.D. | (.46) | (.37) | (.45) |
| Bindings ($p = .70$) | | | |
| Mean | 1.51 | 1.57 | 1.53 |
| S.D. | (.73) | (.66) | (.71) |
| Binding Materials ($p = .48$) | | | |
| Mean | 1.49 | 1.62 | 1.52 |
| S.D. | (.80) | (.86) | (.82) |
| Sadistic Infliction of Pain ($p = .15$) | | | |
| Mean | 1.19 | 1.33 | 1.22 |
| S.D. | (.44) | (.49) | (.46) |
| Function of Force ($p = .04$) | | | |
| Mean | 1.41 | 1.66 | 1.47 |
| S.D. | (.55) | (.49) | (.54) |
| Captivity | | | |
| Mean | 1.00 | 1.00 | 1.00 |
| S.D. | (.00) | (.00) | (.00) |

TABLE 10 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY INCREASER STATUS**

| INTERACTIONAL SCALES | <u>INCREASE IN BLUNT FORCE</u> | | |
|-------------------------|--------------------------------|---------------|--------------------------|
| | NO (n=81) | YES (n=27) | GRAND MEAN (n=108) |

2. Physical Scales (cont'd):**Effort Not to Harm ($p = .52$)**

| | | | |
|------|-------|-------|-------|
| Mean | 1.31 | 1.37 | 1.33 |
| S.D. | (.40) | (.38) | (.39) |

**Transportation of
Victim ($p = .55$)**

| | | | |
|------|-------|--------|-------|
| Mean | 1.36 | 1.48 | 1.39 |
| S.D. | (.88) | (1.01) | (.92) |

**Rapist's Efforts to
Protect Identity ($p = .17$)**

| | | | |
|------|-------|-------|-------|
| Mean | 1.91 | 2.10 | 1.95 |
| S.D. | (.62) | (.67) | (.64) |

Duration of Assault ($p = .01$)

| | | | |
|------|-------|-------|-------|
| Mean | 2.05 | 2.47 | 2.16 |
| S.D. | (.66) | (.89) | (.74) |

Macho Behavior ($p = .46$)

| | | | |
|------|-------|-------|-------|
| Mean | 2.96 | 3.09 | 3.00 |
| S.D. | (.79) | (.62) | (.75) |

Planning of Rape ($p = .02$)

| | | | |
|------|-------|-------|-------|
| Mean | 2.95 | 3.26 | 3.03 |
| S.D. | (.63) | (.50) | (.62) |

**Humiliation of
Victim ($p = .001$)**

| | | | |
|------|-------|-------|-------|
| Mean | 1.37 | 1.82 | 1.49 |
| S.D. | (.47) | (.88) | (.63) |

Enjoyment ($p = .07$)

| | | | |
|------|-------|-------|-------|
| Mean | 1.21 | 1.35 | 1.24 |
| S.D. | (.35) | (.35) | (.35) |

3. Sexual Behavior:**Kissing ($p = .93$)**

| | | | |
|------|-------|-------|-------|
| Mean | 1.29 | 1.30 | 1.29 |
| S.D. | (.43) | (.40) | (.42) |

TABLE 10 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY INCREASER STATUS**

| | <u>INCREASE IN BLUNT FORCE</u> | | |
|---|--------------------------------|---------------|--------------------------|
| | NO (n=81) | YES (n=27) | GRAND MEAN (n=108) |
| TERACTIONAL ALES | | | |
| Sexual Behavior (cont'd): | | | |
| Nuzzling (p = .88) | | | |
| Mean | 1.28 | 1.27 | 1.28 |
| S.D. | (.49) | (.32) | (.45) |
| Fondling (p = .05) | | | |
| Mean | 1.46 | 1.69 | 1.52 |
| S.D. | (.53) | (.56) | (.54) |
| Fellatio (p = .35) | | | |
| Mean | 1.51 | 1.63 | 1.54 |
| S.D. | (.56) | (.64) | (.58) |
| Cunnilingus (p = .99) | | | |
| Mean | 1.17 | 1.17 | 1.17 |
| S.D. | (.38) | (.29) | (.36) |
| Anal Sex (p = .22) | | | |
| Mean | 1.19 | 1.30 | 1.22 |
| S.D. | (.34) | (.54) | (.40) |
| Vaginal Sex (p = .15) | | | |
| Mean | 2.21 | 2.41 | 2.26 |
| S.D. | (.64) | (.58) | (.63) |
| Foreign Object Penetration (p = .03) | | | |
| Mean | 1.02 | 1.10 | 1.04 |
| S.D. | (.09) | (.28) | (.16) |
| Digital Penetration (p = .18) | | | |
| Mean | 1.23 | 1.34 | 1.25 |
| S.D. | (.33) | (.44) | (.36) |
| Resistance Scales: | | | |
| Verbal Resistance (p = .49) | | | |
| Mean | 2.31 | 2.44 | 2.34 |
| S.D. | (.81) | (.74) | (.79) |

TABLE 10 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY INCREASER STATUS**

| INTERACTIONAL SCALES | <u>INCREASE IN BLUNT FORCE</u> | | |
|---|--------------------------------|---------------|--------------------------|
| | NO (n=81) | YES (n=27) | GRAND MEAN (n=108) |
| 4. Resistance Scales (cont'd): | | | |
| Non-Confrontative Resistance (p = .72) | | | |
| Mean | 1.30 | 1.28 | 1.30 |
| S.D. | (.36) | (.35) | (.35) |
| Physical Resistance (p = .84) | | | |
| Mean | 1.67 | 1.64 | 1.66 |
| S.D. | (.65) | (.49) | (.61) |
| Rapist Response to Victim Resistance (p = .31) | | | |
| Mean | 2.03 | 2.18 | 2.07 |
| S.D. | (.70) | (.62) | (.68) |
| 5. Previous Scales: | | | |
| Complimentary/Demeaning About Self (p = .23) | | | |
| Mean | 3.01 | 2.96 | 3.00 |
| S.D. | (.16) | (.26) | (.19) |
| Anger (p = .17) | | | |
| Mean | 2.44 | 2.65 | 2.50 |
| S.D. | (.74) | (.48) | (.69) |
| Complimentary/Demeaning About Victim (p = .44) | | | |
| Mean | 3.16 | 3.24 | 3.18 |
| S.D. | (.38) | (.57) | (.43) |
| Apologetic/Demanding (p = .59) | | | |
| Mean | 3.72 | 3.76 | 3.73 |
| S.D. | (.35) | (.37) | (.36) |
| Profanity (p = .002) | | | |
| Mean | 1.53 | 1.98 | 1.64 |
| S.D. | (.57) | (.74) | (.64) |
| Victim Selection (p = .02) | | | |
| Mean | 2.55 | 2.97 | 2.65 |
| S.D. | (.88) | (.71) | (.85) |

TABLE 10 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY INCREASER STATUS**

| | <u>INCREASE IN BLUNT FORCE</u> | | |
|-----------------------------------|--------------------------------|---------------|--------------------------|
| | NO (n=81) | YES (n=27) | GRAND MEAN (n=108) |
| INTERACTIONAL ALES | | | |
| Previous Scales (cont'd): | | | |
| Planning of Rape (p = .01) | | | |
| Mean | 2.90 | 3.25 | 2.99 |
| S.D. | (.64) | (.48) | (.93) |
| Injuries (p = .01) | | | |
| Mean | 2.02 | 2.54 | 2.15 |
| S.D. | (.95) | (.75) | (.93) |
| Sensitive/Macho (p = .36) | | | |
| Mean | 3.07 | 3.21 | 3.11 |
| S.D. | (.71) | (.60) | (.68) |

TABLE 11

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES OF INDOOR VS. OUTDOOR RAPISTS**

| MODAL VARIABLES | INDOOR (n=66) | OUTDOOR (n=42) | TOTAL (n=108) |
|---|--------------------------|---------------------------|--------------------------|
| 1. Rapist Age*: (p = .66) | | | |
| Under 26 | 24 (41%) | 17 (46%) | 41 (43%) |
| 26 + | 34 (59%) | 20 (54%) | 54 (57%) |
| 2. Rapist Race*: (p = .36) | | | |
| White | 27 (53%) | 15 (43%) | 42 (49%) |
| Minority | 24 (47%) | 20 (57%) | 44 (51%) |
| 3. Total Rapes: (p = .008) | | | |
| 2 - 4 | 30 (46%) | 30 (71%) | 60 (73%) |
| > 4 | 36 (54%) | 12 (29%) | 48 (27%) |
| 4. Criminal History: | | | |
| Criminal History Index (p = .30) | | | |
| Mean | 749.16 | 932.33 | 820.84 |
| S.D. | (455.68) | (1201.22) | (829.79) |
| Total Violent Crimes (p = .003) | | | |
| Mean | 0.76 | 1.95 | 1.22 |
| S.D. | (1.95) | (2.54) | (1.91) |
| Total Potentially Violent Crimes (p = .09) | | | |
| Mean | 1.62 | 2.76 | 2.06 |
| S.D. | (2.41) | (4.07) | (3.20) |

TABLE 11 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES OF INDOOR VS. OUTDOOR RAPISTS**

| DAL VARIABLES | INDOOR (n=66) | OUTDOOR (n=42) | TOTAL (n=108) |
|---|--------------------------|---------------------------|--------------------------|
| Criminal History (cont'd): | | | |
| Total Other Crimes | | | |
| Against Person ($p = .18$) | | | |
| Mean | 0.62 | 1.54 | 0.98 |
| S.D. | (.95) | (5.12) | (3.28) |
| Total Sexual Crimes ($p = .52$) | | | |
| Mean | 5.10 | 5.86 | 5.40 |
| S.D. | (4.20) | (7.33) | (5.60) |
| Total Property Crimes ($p = .34$) | | | |
| Mean | 4.78 | 3.68 | 4.38 |
| S.D. | (4.57) | (6.17) | (5.45) |
| Total Drug Crimes ($p = .07$) | | | |
| Mean | 0.22 | 0.59 | 0.37 |
| S.D. | (.73) | (1.26) | (0.98) |
| Total Minor Crimes ($p = .85$) | | | |
| Mean | 1.24 | 1.35 | 1.28 |
| S.D. | (2.28) | (3.50) | (2.80) |
| Total Charges ($p = .28$) | | | |
| Mean | 14.55 | 17.95 | 15.87 |
| S.D. | (11.04) | (19.61) | (14.96) |
| Modus Operandi: | | | |
| Contact Site* ($p = .00001$) | | | |
| Victim's Residence | | | |
| or Workplace | 62 (94%) | 5 (12%) | 67 (63%) |
| Other | 4 (6%) | 36 (88%) | 40 (37%) |

TABLE 11 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES OF INDOOR VS. OUTDOOR RAPISTS**

| MODAL VARIABLES | INDOOR (n=66) | OUTDOOR (n=42) | TOTAL (n=108) |
|---------------------------------------|--------------------------|---------------------------|--------------------------|
| 5. Modus Operandi (cont'd): | | | |
| Approach Method (p = .0002) | | | |
| Surprise | 56 (85%) | 22 (52%) | 78 (72%) |
| Other | 10 (15%) | 20 (48%) | 30 (28%) |
| Bindings (p = .05) | | | |
| Bindings Used | 16 (24%) | 4 (10%) | 20 (19%) |
| Bindings Not Used | 50 (76%) | 38 (90%) | 88 (81%) |
| Knife Used/Displayed (p = .21) | | | |
| Yes | 38 (58%) | 19 (45%) | 57 (53%) |
| No | 28 (42%) | 23 (55%) | 51 (47%) |
| Gun Used/Displayed (p = .02) | | | |
| Yes | 5 (8%) | 10 (24%) | 15 (14%) |
| No | 61 (92%) | 32 (76%) | 93 (86%) |
| Sexual Ritual (p = .28) | | | |
| Yes | 46 (70%) | 25 (60%) | 71 (66%) |
| No | 20 (30%) | 17 (40%) | 37 (34%) |
| Victim Race* (p = .005) | | | |
| White | 56 (89%) | 28 (67%) | 84 (80%) |
| Minority | 7 (11%) | 14 (33%) | 21 (9%) |
| Day/Night (p = .0007) | | | |
| Daytime/Variable | 8 (12%) | 17 (41%) | 25 (23%) |
| Nighttime | 58 (88%) | 25 (59%) | 83 (77%) |

TABLE 11 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES OF INDOOR VS. OUTDOOR RAPISTS**

| MODAL VARIABLES | INDOOR (n=66) | OUTDOOR (n=42) | TOTAL (n=108) |
|---|--------------------------|---------------------------|--------------------------|
| Modus Operandi (cont'd): | | | |
| Weekday/Weekend (p = .11) | | | |
| Weekdays | 32 (49%) | 27 (64%) | 59 (55%) |
| Weekends/Variable | 34 (51%) | 15 (36%) | 49 (45%) |
| Articles Taken (p = .06) | | | |
| Yes | 34 (52%) | 14 (33%) | 48 (44%) |
| No | 32 (48%) | 28 (67%) | 60 (56%) |
| Transportation (p = .00002) | | | |
| Yes | 2 (3%) | 14 (33%) | 16 (15%) |
| No | 64 (97%) | 28 (67%) | 92 (85%) |
| Sexual Dysfunction (p = .27) | | | |
| Yes | 17 (26%) | 7 (17%) | 24 (22%) |
| No | 49 (74%) | 35 (83%) | 84 (78%) |
| Substance Use (p = .13) | | | |
| Yes | 6 (9%) | 8 (19%) | 14 (13%) |
| No | 60 (91%) | 34 (81%) | 94 (87%) |
| Percent Rapes With Anal Intercourse/Inanimate Object Penetration (p = .29) | | | |
| Mean | 19.44% | 14.48% | 17.51% |
| S.D. | (25.12) | (21.39) | (23.77) |
| Victim Age (p = .04) | | | |
| Mean | 31.20 | 24.98 | 29.46 |
| S.D. | (15.52) | (13.29) | (12.19) |
| Oldest Victim* (p = .03) | | | |
| Under 40 | 34 (52%) | 31 (74%) | 65 (61%) |
| 40 + | 31 (48%) | 11 (26%) | 42 (39%) |

TABLE 11 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF RAPES OF INDOOR VS. OUTDOOR RAPISTS**

| MODAL VARIABLES | INDOOR (n=66) | OUTDOOR (n=42) | TOTAL (n=108) |
|-------------------------------------|--------------------------|---------------------------|--------------------------|
| 5. Modus Operandi (cont'd): | | | |
| Youngest Victim* (p = .69) | | | |
| Under 19 | 33 (51%) | 23 (55%) | 56 (52%) |
| 19 + | 32 (49%) | 19 (45%) | 51 (48%) |
| Victim Age Range* (p = .009) | | | |
| 0 - 16 | 25 (39%) | 27 (64%) | 52 (49%) |
| 17 + | 40 (61%) | 15 (36%) | 55 (51%) |

Note: * indicates missing data for that variable.

-related crimes than the indoor rapists. Not surprisingly, the outdoor rapists use both the rise and other forms of approach (e.g., direct assault), rape both at night and during the day (unlike the indoor rapists who rape predominantly at night), and tend not to use bindings. However, outdoor rapists do, however, more often than the indoor rapists display or use a gun (24 percent of the assaults) in the context of their assaults.

Of particular interest was the finding regarding the race of the victim. As indicated, while indoor and outdoor rapists are not different in terms of their own racial composition, they are significantly different in terms of the race of their victims. Specifically, those rapists who rape indoors tend to rape white victims regardless of whether they are black or white. Those rapists who rape outdoors tend to also rape white victims, but they are more likely to rape minority victims than the indoor rapists.

Finally, the two groups also differed in terms of the frequency with which articles were taken from the scene of the crime, average victim age, and victim age range. The outdoor rapists tended not to take articles belonging to their victim, a finding that was not as expectable as it might seem on first glance given the availability of money and credit cards, the two most popular items taken by rapists. The outdoor rapists also tended to rape younger victims, to have fewer victims over the age of 40 years, and to have fewer victims outside of a 16-year age range. This finding is not explained by any differences in the average age of the indoor and outdoor rapists, suggesting that it implies a difference in victim preference, impulsivity, and/or the manner of item selection used by the two types.

Table 12 summarizes differences between the indoor and outdoor rapist on the 58 behavioral scales that quantify the interaction occurring between the rapist and his victim. As

TABLE 12**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF INDOOR VS. OUTDOOR RAPISTS**

| | INDOOR (n=66) | OUTDOOR (n=42) | GRAND MEAN (n=108) |
|--------------------------------------|------------------|-------------------|--------------------------|
| PERCEIVED RATIONALE | | | |
| Verbal Scales: | | | |
| Personal Information (p = .55) | | | |
| Mean | 1.55 | 1.62 | 1.58 |
| S.D. | (.56) | (.62) | (.58) |
| Excuses (p = .72) | | | |
| Mean | 1.17 | 1.19 | 1.18 |
| S.D. | (.24) | (.34) | (.28) |
| Self-Promotion (p = .35) | | | |
| Mean | 1.12 | 1.07 | 1.10 |
| S.D. | (.25) | (.17) | (.23) |
| Self-Deprecating (p = .57) | | | |
| Mean | 1.07 | 1.09 | 1.07 |
| S.D. | (.15) | (.27) | (.20) |
| Sensitivity to Victim (p = .24) | | | |
| Mean | 1.89 | 1.75 | 1.84 |
| S.D. | (.57) | (.59) | (.58) |
| Inquisitive (p = .02) | | | |
| Mean | 1.42 | 1.69 | 1.53 |
| S.D. | (.47) | (.73) | (.60) |
| Complimentary to Victim (p = .77) | | | |
| Mean | 1.15 | 1.17 | 1.15 |
| S.D. | (.25) | (.50) | (.37) |
| Hostility/Women (p = .64) | | | |
| Mean | 1.39 | 1.34 | 1.37 |
| S.D. | (.52) | (.46) | (.49) |
| Hostility/General (p = .09) | | | |
| Mean | 1.05 | 1.02 | 1.04 |
| S.D. | (.13) | (.07) | (.11) |
| Reassuring (p = .29) | | | |
| Mean | 1.71 | 1.60 | 1.67 |
| S.D. | (.53) | (.57) | (.55) |

TABLE 12 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF INDOOR VS. OUTDOOR RAPISTS**

| INTERACTIONAL SCALES | INDOOR (n=66) | OUTDOOR (n=42) | GRAND MEAN (n=108) |
|---|--------------------------|---------------------------|-----------------------------------|
| 1. Verbal Scales (cont'd): | | | |
| Apologetic (p = .64) | | | |
| Mean | 1.11 | 1.13 | 1.11 |
| S.D. | (.20) | (.29) | (.24) |
| Demands (p = .03) | | | |
| Mean | 3.18 | 2.94 | 3.09 |
| S.D. | (.45) | (.61) | (.53) |
| Threats (p = .45) | | | |
| Mean | 2.20 | 2.28 | 2.23 |
| S.D. | (.53) | (.67) | (.58) |
| Sexually-Oriented Speech (p = .75) | | | |
| Mean | 1.62 | 1.65 | 1.63 |
| S.D. | (.56) | (.69) | (.61) |
| Verbal Scripting (p = .58) | | | |
| Mean | 1.11 | 1.14 | 1.12 |
| S.D. | (.24) | (.39) | (.30) |
| Demeaning Scripting (p = .18) | | | |
| Mean | 1.04 | 1.09 | 1.06 |
| S.D. | (.12) | (.27) | (.19) |
| Scripting to Compliment Rapist (p = .31) | | | |
| Mean | 1.04 | 1.07 | 1.06 |
| S.D. | (.13) | (.21) | (.17) |
| Behavioral Scripting (p = .99) | | | |
| Mean | 1.60 | 1.59 | 1.59 |
| S.D. | (.50) | (.78) | (.62) |
| Verbal Negotiation (p = .98) | | | |
| Mean | 1.13 | 1.13 | 1.13 |
| S.D. | (.23) | (.30) | (.26) |

TABLE 12 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF INDOOR VS. OUTDOOR RAPISTS**

| | INDOOR (n=66) | OUTDOOR (n=42) | GRAND MEAN (n=108) |
|---|------------------|-------------------|--------------------------|
| PERCENTAGE | | | |
| MEANS | | | |
| Physical Scales: | | | |
| Blunt Force (p = .61) | | | |
| Mean | 1.35 | 1.40 | 1.37 |
| S.D. | (.41) | (.55) | (.47) |
| Victim Injury/Blunt Force (p = .47) | | | |
| Mean | 1.27 | 1.31 | 1.28 |
| S.D. | (.29) | (.42) | (.35) |
| Victim Injury/Other than Blunt Force (p = .79) | | | |
| Mean | 1.79 | 1.76 | 1.78 |
| S.D. | (.42) | (.53) | (.46) |
| Total Victim Injury (p = .47) | | | |
| Mean | 1.48 | 1.54 | 1.50 |
| S.D. | (.44) | (.48) | (.45) |
| Bindings (p = .01) | | | |
| Mean | 1.66 | 1.31 | 1.53 |
| S.D. | (.74) | (.62) | (.71) |
| Binding Materials (p = .14) | | | |
| Mean | 1.62 | 1.38 | 1.52 |
| S.D. | (.82) | (.80) | (.82) |
| Sadistic Infliction of Pain (p = .70) | | | |
| Mean | 1.24 | 1.20 | 1.22 |
| S.D. | (.47) | (.44) | (.46) |
| Function of Force (p = .45) | | | |
| Mean | 1.44 | 1.52 | 1.47 |
| S.D. | (.55) | (.54) | (.54) |
| Captivity | | | |
| Mean | 1.00 | 1.00 | 1.00 |
| S.D. | (.00) | (.00) | (.00) |

TABLE 12 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF INDOOR VS. OUTDOOR RAPISTS**

| INTERACTIONAL SCALES | INDOOR (n=66) | OUTDOOR (n=42) | GRAND MEAN (n=108) |
|---|--------------------------|---------------------------|-----------------------------------|
| 2. Physical Scales (cont'd): | | | |
| Effort Not to Harm (p = .90) | | | |
| Mean | 1.33 | 1.32 | 1.33 |
| S.D. | (.37) | (.43) | (.39) |
| Transportation of Victim (p = .00001) | | | |
| Mean | 1.08 | 1.88 | 1.39 |
| S.D. | (.32) | (1.27) | (.92) |
| Rapist's Efforts to Protect Identity (p = .0001) | | | |
| Mean | 2.20 | 1.57 | 1.95 |
| S.D. | (.58) | (.53) | (.64) |
| Duration of Assault (p = .21) | | | |
| Mean | 2.09 | 2.27 | 2.16 |
| S.D. | (.61) | (.91) | (.74) |
| Macho Behavior (p = .03) | | | |
| Mean | 2.87 | 3.19 | 3.00 |
| S.D. | (.66) | (.86) | (.75) |
| Planning of Rape (p = .0001) | | | |
| Mean | 3.25 | 2.68 | 3.03 |
| S.D. | (.41) | (.72) | (.62) |
| Humiliation of Victim (p = .42) | | | |
| Mean | 1.53 | 1.43 | 1.49 |
| S.D. | (.65) | (.59) | (.63) |
| Enjoyment (p = .29) | | | |
| Mean | 1.27 | 1.20 | 1.24 |
| S.D. | (.36) | (.34) | (.35) |
| 3. Sexual Behavior: | | | |
| Kissing (p = .44) | | | |
| Mean | 1.26 | 1.33 | 1.29 |
| S.D. | (.41) | (.44) | (.42) |

TABLE 12 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF INDOOR VS. OUTDOOR RAPISTS**

| INTERACTIONAL SCALES | INDOOR (n=66) | OUTDOOR (n=42) | GRAND MEAN (n=108) |
|---|--------------------------|---------------------------|-----------------------------------|
| 3. Sexual Behavior (cont'd): | | | |
| Nuzzling (p = .15) | | | |
| Mean | 1.23 | 1.36 | 1.28 |
| S.D. | (.28) | (.63) | (.45) |
| Fondling (p = .77) | | | |
| Mean | 1.53 | 1.50 | 1.52 |
| S.D. | (.49) | (.62) | (.54) |
| Fellatio (p = .84) | | | |
| Mean | 1.53 | 1.56 | 1.54 |
| S.D. | (.57) | (.61) | (.58) |
| Cunnilingus (p = .05) | | | |
| Mean | 1.23 | 1.09 | 1.17 |
| S.D. | (.42) | (.19) | (.36) |
| Anal Sex (p = .23) | | | |
| Mean | 1.25 | 1.16 | 1.22 |
| S.D. | (.46) | (.26) | (.40) |
| Vaginal Sex (p = .05) | | | |
| Mean | 2.35 | 2.11 | 2.26 |
| S.D. | (.65) | (.57) | (.63) |
| Foreign Object Penetration (p = .05) | | | |
| Mean | 1.07 | 1.00 | 1.04 |
| S.D. | (.21) | (.02) | (.16) |
| Digital Penetration (p = .04) | | | |
| Mean | 1.31 | 1.16 | 1.25 |
| S.D. | (.41) | (.26) | (.36) |
| 4. Resistance Scales: | | | |
| Verbal Resistance (p = .50) | | | |
| Mean | 2.38 | 2.28 | 2.34 |
| S.D. | (.67) | (.96) | (.79) |

TABLE 12 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF INDOOR VS. OUTDOOR RAPISTS**

| INTERACTIONAL SCALES | INDOOR (n=66) | OUTDOOR (n=42) | GRAND MEAN (n=108) |
|---|--------------------------|---------------------------|-----------------------------------|
| 4. Resistance Scales (cont'd): | | | |
| Non-Confrontative Resistance ($p = .64$) | | | |
| Mean | 1.28 | 1.32 | 1.30 |
| S.D. | (.33) | (.40) | (.35) |
| Physical Resistance ($p = .70$) | | | |
| Mean | 1.64 | 1.69 | 1.66 |
| S.D. | (.58) | (.67) | (.61) |
| Rapist Response to Victim Resistance ($p = .23$) | | | |
| Mean | 2.00 | 2.16 | 2.07 |
| S.D. | (.66) | (.71) | (.68) |
| 5. Previous Scales: | | | |
| Complimentary/Demeaning About Self ($p = .25$) | | | |
| Mean | 2.98 | 3.02 | 3.00 |
| S.D. | (.20) | (.17) | (.19) |
| Anger ($p = .89$) | | | |
| Mean | 2.49 | 2.51 | 2.50 |
| S.D. | (.68) | (.72) | (.69) |
| Complimentary/Demeaning About Victim ($p = .64$) | | | |
| Mean | 3.20 | 3.16 | 3.18 |
| S.D. | (.38) | (.51) | (.43) |
| Apologetic/Demanding ($p = .66$) | | | |
| Mean | 3.74 | 3.71 | 3.73 |
| S.D. | (.34) | (.38) | (.36) |
| Profanity ($p = .97$) | | | |
| Mean | 1.65 | 1.64 | 1.64 |
| S.D. | (.64) | (.66) | (.64) |
| Victim Selection ($p = .0001$) | | | |
| Mean | 3.16 | 1.86 | 2.65 |
| S.D. | (.49) | (.68) | (.85) |

TABLE 12 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF INDOOR VS. OUTDOOR RAPISTS**

| | INDOOR (n=66) | OUTDOOR (n=42) | GRAND MEAN (n=108) |
|-------------------------------------|------------------|-------------------|--------------------------|
| INTERACTIONAL SCALES | | | |
| Previous Scales (cont'd): | | | |
| Planning of Rape (p = .0001) | | | |
| Mean | 3.23 | 2.59 | 2.99 |
| S.D. | (.42) | (.69) | (.93) |
| Injuries (p = .93) | | | |
| Mean | 2.15 | 2.16 | 2.15 |
| S.D. | (.91) | (.98) | (.93) |
| Sensitive/Macho (p = .22) | | | |
| Mean | 3.04 | 3.21 | 3.11 |
| S.D. | (.59) | (.81) | (.68) |

indicated, the outdoor rapists demonstrated: a more inquisitive attitude toward the victim; fewer demands; less frequent use of bindings; more extensive transportation of the victim; less effort to protect identity; more "macho" behavior; less perceived planning of the rape; less interest in cunnilingus, foreign object penetration, and digital penetration; and less specificity in terms of victim selection. All of these behaviors suggest a more impulsive form of rape with little ritualistic behavior. Interestingly, there are no differences in the duration of the assault, suggesting that this impulsivity and lack of planning do not necessarily correlate with a shorter assault.

Table 13 examines differences in the demographic and modal variables as they relate to rapists who live inside (ICH) and outside the Convex Hull Polygon (OCH). In contrast to the distinctions examined above, there are only two variables that approached statistical significance (i.e., $p=.06$) in this particular constellation of analyses: the number of victims and victim age range. As indicated, there appears to be a trend in which rapists with fewer offenses live inside the Convex Hull, while rapists with more than four offenses tend to live outside the Convex Hull. This difference may reflect an organizing theme of the rapists such that they move further away from the vicinity of their home as the number of their rapes increase. (For further discussion of this trend, see page 218.) Alternatively, it may represent an artifact of the identification process, wherein those who live inside the Convex Hull have a higher probability of being identified and hence of being apprehended before they are able to perpetrate a large number of rapes.

The second trend involves the age range of the victims. Those who live inside the Convex Hull tend to have a larger age range among their victims, while those who live outside the Convex Hull tend to have sixteen years or less age range among their victims. This difference may reflect differences in victim specificity that determine the amount of distance which needs to be traversed

TABLE 13

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| MODAL VARIABLES | <u>RESIDENCE LOCATION</u> | | TOTAL |
|---|---------------------------|-----------|----------|
| | INSIDE | OUTSIDE | |
| | (n=18) | (n=58) | (n=76) |
| 1. Rapist Age*: (p = .69) | | | |
| Under 26 | 5 (36%) | 22 (42%) | 27 (40%) |
| 26 + | 9 (64%) | 31 (58%) | 40 (60%) |
| 2. Rapist Race*: (p = .80) | | | |
| White | 6 (50%) | 22 (46%) | 28 (47%) |
| Minority | 6 (50%) | 26 (54%) | 32 (53%) |
| 3. Total Rapes: (p = .06) | | | |
| 2 - 4 | 5 (28%) | 31 (53%) | 36 (47%) |
| > 4 | 13 (72%) | 27 (47%) | 40 (53%) |
| 4. Criminal History: | | | |
| Criminal History Index (p = .74) | | | |
| Mean | 757.46 | 850.02 | 831.51 |
| S.D. | (459.51) | (1010.80) | (924.84) |
| Total Violent Crimes (p = .31) | | | |
| Mean | 0.71 | 1.30 | 1.18 |
| S.D. | (.99) | (2.06) | (1.90) |
| Total Potentially Violent Crimes (p = .41) | | | |
| Mean | 1.21 | 3.15 | 2.75 |
| S.D. | (1.48) | (8.68) | (7.78) |

TABLE 13 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| | <u>RESIDENCE LOCATION</u> | | TOTAL |
|--------------------------------------|---------------------------|----------|----------|
| | INSIDE | OUTSIDE | |
| MODAL VARIABLES | (n=18) | (n=58) | (n=76) |
| 4. Criminal History (cont'd): | | | |
| Total Other Crimes | | | |
| Against Person ($p = .59$) | | | |
| Mean | 0.86 | 0.62 | 0.67 |
| S.D. | (.95) | (1.56) | (1.45) |
| Total Sexual Crimes ($p = .89$) | | | |
| Mean | 5.86 | 6.30 | 6.21 |
| S.D. | (6.36) | (11.80) | (10.85) |
| Total Property Crimes ($p = .81$) | | | |
| Mean | 3.71 | 4.04 | 3.97 |
| S.D. | (4.43) | (4.41) | (4.38) |
| Total Drug Crimes ($p = .48$) | | | |
| Mean | 0.50 | 0.28 | 0.33 |
| S.D. | (1.16) | (.97) | (1.01) |
| Total Minor Crimes ($p = .46$) | | | |
| Mean | 1.14 | 0.75 | 0.84 |
| S.D. | (1.75) | (1.73) | (1.73) |
| Total Charges ($p = .66$) | | | |
| Mean | 13.86 | 16.83 | 16.21 |
| S.D. | (10.78) | (24.29) | (22.12) |
| 5. Modus Operandi: | | | |
| Contact Site* ($p = .27$) | | | |
| Victim's Residence | | | |
| or Workplace | 14 (78%) | 37 (64%) | 51 (67%) |
| Other | 4 (22%) | 21 (36%) | 25 (32%) |

TABLE 13 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| | <u>RESIDENCE LOCATION</u> | | TOTAL |
|---------------------------------|---------------------------|----------|----------|
| | INSIDE | OUTSIDE | |
| MODAL VARIABLES | (n=18) | (n=58) | (n=76) |
| Modus Operandi (cont'd): | | | |
| Location (p = .19) | | | |
| Indoors | 15 (83%) | 39 (67%) | 54 (71%) |
| Outdoors/Variable | 3 (17%) | 19 (33%) | 22 (29%) |
| Approach Method (p = .71) | | | |
| Surprise | 15 (83%) | 46 (79%) | 61 (80%) |
| Other | 3 (17%) | 12 (21%) | 15 (20%) |
| Bindings (p = .33) | | | |
| Bindings Used | 5 (28%) | 10 (17%) | 15 (20%) |
| Bindings Not Used | 13 (72%) | 48 (83%) | 61 (80%) |
| Knife Used/Displayed (p = .50) | | | |
| Yes | 8 (44%) | 31 (53%) | 39 (51%) |
| No | 10 (56%) | 27 (47%) | 37 (49%) |
| Gun Used/Displayed (p = .39) | | | |
| Yes | 4 (22%) | 8 (14%) | 12 (16%) |
| No | 14 (77%) | 50 (86%) | 64 (84%) |
| Sexual Ritual (p = .63) | | | |
| Yes | 11 (61%) | 39 (67%) | 50 (66%) |
| No | 7 (39%) | 19 (33%) | 26 (34%) |
| Victim Race* (p = .15) | | | |
| White | 16 (89%) | 42 (72%) | 58 (76%) |
| Minority | 2 (11%) | 16 (28%) | 18 (24%) |
| Day/Night (p = .71) | | | |
| Daytime/Variable | 3 (17%) | 12 (21%) | 15 (20%) |
| Nighttime | 15 (83%) | 46 (79%) | 61 (80%) |

TABLE 13 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| | <u>RESIDENCE LOCATION</u> | | TOTAL |
|---|---------------------------|----------------|---------------|
| | INSIDE | OUTSIDE | |
| MODAL VARIABLES | (n=18) | (n=58) | (n=76) |
| 5. Modus Operandi (cont'd): | | | |
| Weekday/Weekend (p = .90) | | | |
| Weekdays | 9 (50%) | 30 (52%) | 39 (51%) |
| Weekends/Variable | 9 (50%) | 28 (48%) | 37 (49%) |
| Articles Taken (p = .17) | | | |
| Yes | 6 (33%) | 30 (52%) | 36 (47%) |
| No | 12 (67%) | 28 (48%) | 40 (53%) |
| Transportation (p = .77) | | | |
| Yes | 16 (89%) | 50 (86%) | 66 (87%) |
| No | 2 (11%) | 8 (14%) | 10 (13%) |
| Sexual Dysfunction (p = .63) | | | |
| Yes | 4 (22%) | 10 (17%) | 14 (12%) |
| No | 14 (78%) | 48 (83%) | 62 (82%) |
| Substance Use (p = .43) | | | |
| Yes | 1 (6%) | 7 (12%) | 8 (11%) |
| No | 17 (94%) | 51 (88%) | 68 (89%) |
| Percent Rapes With Anal Intercourse | | | |
| Inanimate Object Penetration (p = .36) | | | |
| Mean | 20.11% | 14.93% | 16.16% |
| S.D. | (23.82) | (20.12) | (21.00) |
| Victim Age (p = .56) | | | |
| Mean | 29.94 | 27.63 | 28.23 |
| S.D. | (12.11) | (14.53) | (13.89) |
| Oldest Victim* (p = .39) | | | |
| Under 40 | 9 (50%) | 35 (61%) | 44 (59%) |
| 40 + | 9 (50%) | 22 (39%) | 31 (41%) |

TABLE 13 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| MODAL VARIABLES | <u>RESIDENCE LOCATION</u> | | |
|------------------------------------|---------------------------|-------------------|-----------------|
| | INSIDE (n=18) | OUTSIDE (n=58) | TOTAL (n=76) |
| 5. Modus Operandi (cont'd): | | | |
| Youngest Victim* (p = .53) | | | |
| Under 19 | 11 (61%) | 30 (53%) | 41 (55%) |
| 19 + | 7 (39%) | 27 (47%) | 34 (45%) |
| Victim Age Range* (p = .06) | | | |
| 0 - 16 | 4 (22%) | 27 (47%) | 31 (41%) |
| 17 + | 14 (78%) | 30 (53%) | 44 (59%) |

Note: * indicates missing data for that variable.

in order to procure a desirable victim (i.e., rapists that want a more specific type of victim may have to travel further to locate her).

Also of interest is the large number of similarities between the two types of rapists on many of the demographic and modal variables. As summarized, there were no differences in terms of the rapist's age, race, criminal history, and many aspects of the offender's modus operandi. This suggests that this type of spatial distribution, devoid of distance parameters, is not particularly useful in criminal investigative efforts to ascertain the location of the perpetrator's residence from generic descriptions of the offender.

Table 14 summarizes the 58 behavioral scales that differentiate the inside Convex Hull (ICH) rapist from the outside Convex Hull (OCH) rapist. The majority of differences are reported on the verbal scales that quantify the verbal interaction occurring between the rapist and his victim. As indicated, the ICH rapist is more self-deprecating and more complimentary toward the victim. There also appear to be trends with the ICH rapist being less hostile and angry, and more reassuring in his interactions. Table 14 also indicates significant differences in the preferred sexual acts, with the ICH rapist showing a more sustained interest in fellatio and vaginal sex. These differences suggest that the ICH rapist is in search of what might be termed a more "generic" rape, while those who travel outside the Convex Hull seem more hostile and angry and more intent on sexual contact that is less specific in terms of vaginal intercourse and fellatio.

Table 15 summarizes differences on the demographic and modal variables for the four geographical models (see page 49 for a description of the four models). The two significant differences involve the total number of property crimes on the rapist's criminal record and the presence of a gun during the assault. Specifically, those rapists who travel further either inside or outside the Convex Hull Polygon have more extensive histories of property crime. Similarly,

TABLE 14

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
ARREST OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| BEHAVIORAL SCALES | RESIDENCE LOCATION | | GRAND MEAN (n=76) |
|--------------------------------------|--------------------|-------------------|-------------------------|
| | INSIDE (n=18) | OUTSIDE (n=58) | |
| Verbal Scales: | | | |
| Personal Information (p = .46) | | | |
| Mean | 1.68 | 1.56 | 1.58 |
| S.D. | (.56) | (.61) | (.60) |
| Excuses (p = .10) | | | |
| Mean | 1.24 | 1.15 | 1.17 |
| S.D. | (.29) | (.20) | (.23) |
| Self-Promotion (p = .11) | | | |
| Mean | 1.03 | 1.12 | 1.10 |
| S.D. | (.08) | (.23) | (.21) |
| Self-Deprecating (p = .002) | | | |
| Mean | 1.23 | 1.04 | 1.09 |
| S.D. | (.40) | (.11) | (.23) |
| Sensitivity to Victim (p = .24) | | | |
| Mean | 2.00 | 1.81 | 1.86 |
| S.D. | (.55) | (.61) | (.60) |
| Inquisitive (p = .43) | | | |
| Mean | 1.42 | 1.55 | 1.52 |
| S.D. | (.48) | (.59) | (.57) |
| Complimentary to Victim (p = .04) | | | |
| Mean | 1.20 | 1.09 | 1.12 |
| S.D. | (.24) | (.18) | (.20) |
| Hostility/Women (p = .08) | | | |
| Mean | 1.20 | 1.40 | 1.35 |
| S.D. | (.34) | (.44) | (.42) |
| Hostility/General (p = .07) | | | |
| Mean | 1.09 | 1.03 | 1.05 |
| S.D. | (.18) | (.09) | (.12) |
| Reassuring (p = .08) | | | |
| Mean | 1.86 | 1.62 | 1.67 |
| S.D. | (.49) | (.53) | (.53) |

TABLE 14 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| INTERACTIONAL SCALES | RESIDENCE LOCATION | | GRAND MEAN (n=76) |
|---|--------------------|-------------------|-------------------------|
| | INSIDE (n=18) | OUTSIDE (n=58) | |
| 1. Verbal Scales (cont'd): | | | |
| Apologetic (p = .01) | | | |
| Mean | 1.21 | 1.07 | 1.10 |
| S.D. | (.32) | (.16) | (.21) |
| Demands (p = .79) | | | |
| Mean | 3.11 | 3.14 | 3.13 |
| S.D. | (.44) | (.50) | (.48) |
| Threats (p = .84) | | | |
| Mean | 2.22 | 2.25 | 2.24 |
| S.D. | (.51) | (.57) | (.55) |
| Sexually-Oriented Speech (p = .82) | | | |
| Mean | 1.58 | 1.61 | 1.61 |
| S.D. | (.56) | (.60) | (.59) |
| Verbal Scripting (p = .83) | | | |
| Mean | 1.10 | 1.09 | 1.09 |
| S.D. | (.22) | (.24) | (.23) |
| Demeaning Scripting (p = .96) | | | |
| Mean | 1.05 | 1.06 | 1.06 |
| S.D. | (.10) | (.14) | (.13) |
| Scripting to Compliment Rapist (p = .75) | | | |
| Mean | 1.04 | 1.05 | 1.05 |
| S.D. | (.16) | (.14) | (.14) |
| Behavioral Scripting (p = .85) | | | |
| Mean | 1.57 | 1.54 | 1.55 |
| S.D. | (.44) | (.49) | (.48) |
| Verbal Negotiation (p = .17) | | | |
| Mean | 1.06 | 1.14 | 1.12 |
| S.D. | (.11) | (.22) | (.26) |

TABLE 14 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| | <u>RESIDENCE LOCATION</u> | | GRAND MEAN (n=76) |
|---|---------------------------|-------------------|-------------------------|
| | INSIDE (n=18) | OUTSIDE (n=58) | |
| TERACTIONAL ALES | | | |
| Physical Scales: | | | |
| Blunt Force (p = .64) | | | |
| Mean | 1.33 | 1.39 | 1.37 |
| S.D. | (.32) | (.49) | (.45) |
| Victim Injury/Blunt Force (p = .68) | | | |
| Mean | 1.25 | 1.29 | 1.28 |
| S.D. | (.24) | (.34) | (.32) |
| Victim Injury/Other than Blunt Force (p = .78) | | | |
| Mean | 1.82 | 1.78 | 1.79 |
| S.D. | (.40) | (.43) | (.42) |
| Total Victim Injury (p = .85) | | | |
| Mean | 1.51 | 1.49 | 1.50 |
| S.D. | (.30) | (.42) | (.40) |
| Bindings (p = .85) | | | |
| Mean | 1.56 | 1.60 | 1.59 |
| S.D. | (.71) | (.76) | (.74) |
| Binding Materials (p = .74) | | | |
| Mean | 1.50 | 1.57 | 1.55 |
| S.D. | (.69) | (.84) | (.81) |
| Sadistic Infliction of Pain (p = .12) | | | |
| Mean | 1.07 | 1.24 | 1.20 |
| S.D. | (.10) | (.46) | (.41) |
| Function of Force (p = .57) | | | |
| Mean | 1.39 | 1.48 | 1.46 |
| S.D. | (.36) | (.58) | (.53) |
| Captivity | | | |
| Mean | 1.00 | 1.00 | 1.00 |
| S.D. | (.00) | (.00) | (.00) |

TABLE 14 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| INTERACTIONAL SCALES | <u>RESIDENCE LOCATION</u> | | GRAND MEAN (n=76) |
|---|---------------------------|-------------------|-------------------------|
| | INSIDE (n=18) | OUTSIDE (n=58) | |
| 2. Physical Scales (cont'd): | | | |
| Effort Not to Harm (p = .76) | | | |
| Mean | 1.31 | 1.34 | 1.34 |
| S.D. | (.39) | (.39) | (.39) |
| Transportation of Victim (p = .48) | | | |
| Mean | 1.17 | 1.31 | 1.28 |
| S.D. | (.38) | (.82) | (.74) |
| Rapist's Efforts to Protect Identity (p = .85) | | | |
| Mean | 2.13 | 2.09 | 2.10 |
| S.D. | (.58) | (.65) | (.63) |
| Duration of Assault (p = .55) | | | |
| Mean | 2.19 | 2.08 | 2.11 |
| S.D. | (.89) | (.58) | (.66) |
| Macho Behavior (p = .15) | | | |
| Mean | 2.76 | 3.03 | 2.97 |
| S.D. | (.70) | (.68) | (.69) |
| Planning of Rape (p = .33) | | | |
| Mean | 3.21 | 3.06 | 3.10 |
| S.D. | (.29) | (.60) | (.55) |
| Humiliation of Victim (p = .46) | | | |
| Mean | 1.37 | 1.47 | 1.45 |
| S.D. | (.44) | (.52) | (.50) |
| Enjoyment (p = .60) | | | |
| Mean | 1.21 | 1.26 | 1.25 |
| S.D. | (.30) | (.37) | (.35) |
| 3. Sexual Behavior: | | | |
| Kissing (p = .93) | | | |
| Mean | 1.24 | 1.24 | 1.24 |
| S.D. | (.28) | (.40) | (.37) |

TABLE 14 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| BEHAVIORAL SCALES | RESIDENCE LOCATION | | GRAND MEAN (n=76) |
|-------------------------------|--------------------|-------------------|-------------------------|
| | INSIDE (n=18) | OUTSIDE (n=58) | |
| Sexual Behavior (cont'd): | | | |
| Nuzzling (p = .57) | | | |
| Mean | 1.20 | 1.25 | 1.24 |
| S.D. | (.19) | (.35) | (.32) |
| Fondling (p = .96) | | | |
| Mean | 1.49 | 1.49 | 1.49 |
| S.D. | (.30) | (.57) | (.52) |
| Fellatio (p = .05) | | | |
| Mean | 1.72 | 1.44 | 1.50 |
| S.D. | (.76) | (.44) | (.54) |
| Cunnilingus (p = .17) | | | |
| Mean | 1.29 | 1.15 | 1.18 |
| S.D. | (.65) | (.26) | (.39) |
| Anal Sex (p = .80) | | | |
| Mean | 1.23 | 1.20 | 1.21 |
| S.D. | (.31) | (.36) | (.34) |
| Vaginal Sex (p = .02) | | | |
| Mean | 2.51 | 2.16 | 2.24 |
| S.D. | (.74) | (.47) | (.56) |
| Foreign Object | | | |
| Penetration (p = .84) | | | |
| Mean | 1.04 | 1.05 | 1.05 |
| S.D. | (.10) | (.20) | (.18) |
| Digital Penetration (p = .58) | | | |
| Mean | 1.30 | 1.25 | 1.26 |
| S.D. | (.39) | (.34) | (.35) |
| Resistance Scales: | | | |
| Verbal Resistance (p = .98) | | | |
| Mean | 2.34 | 2.34 | 2.34 |
| S.D. | (.39) | (.72) | (.66) |

TABLE 14 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CONVEX HULL POLYGON**

| INTERACTIONAL SCALES | RESIDENCE LOCATION | | GRAND MEAN (n=76) |
|---|--------------------|-------------------|-------------------------|
| | INSIDE (n=18) | OUTSIDE (n=58) | |
| 4. Resistance Scales (cont'd): | | | |
| Non-Confrontative Resistance (p = .35) | | | |
| Mean | 1.23 | 1.30 | 1.29 |
| S.D. | (.23) | (.32) | (.30) |
| Physical Resistance (p = .63) | | | |
| Mean | 1.70 | 1.63 | 1.65 |
| S.D. | (.44) | (.56) | (.54) |
| Rapist Response to Victim Resistance (p = .51) | | | |
| Mean | 1.95 | 2.06 | 2.03 |
| S.D. | (.37) | (.65) | (.60) |
| 5. Previous Scales: | | | |
| Complimentary/Demeaning About Self (p = .0002) | | | |
| Mean | 3.15 | 2.96 | 3.01 |
| S.D. | (.20) | (.18) | (.20) |
| Anger (p = .06) | | | |
| Mean | 2.25 | 2.56 | 2.49 |
| S.D. | (.49) | (.65) | (.62) |
| Complimentary/Demeaning About Victim (p = .34) | | | |
| Mean | 3.11 | 3.20 | 3.17 |
| S.D. | (.36) | (.35) | (.35) |
| Apologetic/Demanding (p = .17) | | | |
| Mean | 3.68 | 3.80 | 3.77 |
| S.D. | (.32) | (.31) | (.31) |
| Profanity (p = .30) | | | |
| Mean | 1.49 | 1.65 | 1.61 |
| S.D. | (.60) | (.58) | (.59) |
| Victim Selection (p = .20) | | | |
| Mean | 2.99 | 2.70 | 2.77 |
| S.D. | (.67) | (.84) | (.81) |

TABLE 14 (cont'd)

RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST RAPE OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE THE CONVEX HULL POLYGON

| | <u>RESIDENCE LOCATION</u> | | GRAND MEAN (n=76) |
|-----------------------------------|---------------------------|-------------------|-------------------------|
| | INSIDE (n=18) | OUTSIDE (n=58) | |
| PERCENTAGE OF RAPISTS | | | |
| Previous Scales (cont'd): | | | |
| Planning of Rape (p = .38) | | | |
| Mean | 3.17 | 3.04 | 3.07 |
| S.D. | (.31) | (.58) | (.53) |
| Injuries (p = .54) | | | |
| Mean | 2.03 | 2.17 | 2.15 |
| S.D. | (.63) | (.87) | (.81) |
| Sensitive/Macho (p = .31) | | | |
| Mean | 2.97 | 3.13 | 3.10 |
| S.D. | (.54) | (.61) | (.59) |

TABLE 15

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS BY GEOGRAPHICAL MODELS**

| | MODEL 1 | MODEL 2 | MODEL 3 | MODEL 4 | TOTAL |
|---|----------|----------|-----------|----------|----------|
| MODAL VARIABLES | (n=10) | (n=8) | (n=28) | (n=30) | (n=76) |
| 1. Rapist Age[*]: (p = .09) | | | | | |
| Under 26 | 2 (22%) | 3 (60%) | 15 (56%) | 7 (27%) | 27 (40%) |
| 26 + | 7 (78%) | 2 (40%) | 12 (44%) | 19 (73%) | 40 (60%) |
| 2. Rapist Race[*]: (p = .07) | | | | | |
| White | 2 (29%) | 4 (80%) | 8 (32%) | 14 (61%) | 28 (47%) |
| Black | 5 (71%) | 1 (20%) | 17 (68%) | 9 (39%) | 32 (53%) |
| 3. Total Rapes: (p = .05) | | | | | |
| 2 - 4 | 1 (10%) | 4 (50%) | 17 (61%) | 14 (47%) | 36 (47%) |
| > 4 | 9 (90%) | 4 (50%) | 11 (39%) | 16 (53%) | 40 (53%) |
| 4. Criminal History: | | | | | |
| Criminal History Index (p = .80) | | | | | |
| Mean | 667.88 | 900.80 | 959.46 | 740.58 | 831.51 |
| S.D. | (427.18) | (521.89) | (1347.14) | (494.98) | (924.84) |
| Total Violent Crimes (p = .13) | | | | | |
| Mean | 1.00 | 0.20 | 1.81 | 0.77 | 1.18 |
| S.D. | (1.11) | (0.44) | (2.47) | (1.39) | (1.90) |
| Total Potentially Violent Crimes (p = .78) | | | | | |
| Mean | 0.67 | 2.20 | 3.74 | 2.54 | 2.75 |
| S.D. | (0.87) | (1.92) | (11.82) | (3.28) | (7.78) |

TABLE 15 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS BY GEOGRAPHICAL MODELS**

| MODAL VARIABLES | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | TOTAL (n=76) |
|--|---------------------------|--------------------------|---------------------------|---------------------------|-------------------------|
| Criminal History (cont'd): | | | | | |
| Total Other Crimes Against Person (p = .88) | | | | | |
| Mean | 1.00 | 0.60 | 0.70 | 0.54 | 0.67 |
| S.D. | (1.12) | (0.55) | (2.00) | (0.95) | (1.45) |
| Total Sexual Crimes (p = .54) | | | | | |
| Mean | 3.67 | 9.80 | 7.89 | 4.65 | 6.21 |
| S.D. | (3.71) | (8.58) | (16.21) | (3.29) | (10.85) |
| Total Property Crimes (p = .01) | | | | | |
| Mean | 2.56 | 5.80 | 2.30 | 5.85 | 3.97 |
| S.D. | (2.46) | (6.57) | (2.43) | (5.25) | (4.38) |
| Total Drug Crimes (p = .66) | | | | | |
| Mean | 0.67 | 0.20 | 0.37 | 0.19 | 0.33 |
| S.D. | (1.41) | (0.45) | (1.21) | (0.63) | (1.01) |
| Total Minor Crimes (p = .55) | | | | | |
| Mean | 1.56 | 0.40 | 0.67 | 0.85 | 0.84 |
| S.D. | (2.07) | (0.55) | (1.98) | (1.46) | (1.73) |
| Total Charges (p = .88) | | | | | |
| Mean | 11.11 | 18.80 | 17.85 | 15.77 | 16.21 |
| S.D. | (7.83) | (14.39) | (32.09) | (12.38) | (22.12) |
| Modus Operandi: | | | | | |
| Contact Site* (p = .28) | | | | | |
| Victim's Residence | | | | | |
| or Workplace | 8 (80%) | 6 (75%) | 15 (54%) | 22 (73%) | 51 (67%) |
| Other | 2 (20%) | 2 (25%) | 13 (46%) | 8 (27%) | 25 (33%) |

TABLE 15 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS BY GEOGRAPHICAL MODELS**

| MODAL VARIABLES | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | TOTAL (n=76) |
|---|---------------------------|--------------------------|---------------------------|---------------------------|-------------------------|
| 5. Modus Operandi (cont'd): | | | | | |
| Location (p = .08) | | | | | |
| Indoors | 8 (80%) | 7 (88%) | 15 (54%) | 24 (80%) | 54 (71%) |
| Outdoors/Variable | 2 (20%) | 1 (12%) | 13 (46%) | 6 (20%) | 22 (29%) |
| Approach Method (p = .10) | | | | | |
| Surprise | 10 (100%) | 5 (63%) | 20 (71%) | 26 (87%) | 61 (80%) |
| Other | 0 (0%) | 3 (37%) | 8 (29%) | 4 (13%) | 15 (20%) |
| Bindings (p = .15) | | | | | |
| Bindings Used | 2 (20%) | 3 (38%) | 2 (7%) | 8 (27%) | 15 (20%) |
| Bindings Not Used | 8 (80%) | 5 (62%) | 26 (93%) | 22 (73%) | 61 (80%) |
| Knife Used/Displayed (p = .07) | | | | | |
| Yes | 6 (60%) | 2 (25%) | 11 (39%) | 20 (67%) | 39 (51%) |
| No | 4 (40%) | 6 (75%) | 17 (61%) | 10 (33%) | 37 (49%) |
| Gun Used/Displayed (p = .02) | | | | | |
| Yes | 0 (0%) | 4 (50%) | 3 (11%) | 5 (17%) | 12 (16%) |
| No | 10 (100%) | 4 (50%) | 25 (89%) | 25 (83%) | 64 (84%) |
| Sexual Ritual (p = .13) | | | | | |
| Yes | 4 (40%) | 7 (88%) | 17 (61%) | 22 (73%) | 50 (66%) |
| No | 6 (60%) | 1 (12%) | 11 (39%) | 8 (27%) | 26 (34%) |
| Victim Race* (p = .17) | | | | | |
| White | 8 (80%) | 8 (100%) | 18 (64%) | 24 (80%) | 58 (76%) |
| Other | 2 (20%) | 0 (0%) | 10 (36%) | 6 (20%) | 18 (24%) |
| Day/Night (p = .25) | | | | | |
| Daytime/Variable | 0 (0%) | 3 (38%) | 6 (21%) | 6 (20%) | 15 (20%) |
| Nighttime | 10 (100%) | 5 (62%) | 22 (79%) | 24 (80%) | 61 (80%) |

TABLE 15 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS BY GEOGRAPHICAL MODELS**

| MODAL VARIABLES | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | TOTAL (n=76) |
|---|---------------------------|--------------------------|---------------------------|---------------------------|-------------------------|
| Modus Operandi (cont'd): | | | | | |
| Weekday/Weekend (p = .24) | | | | | |
| Weekdays | 7 (70%) | 2 (25%) | 13 (46%) | 17 (57%) | 39 (51%) |
| Weekends/Variable | 3 (30%) | 6 (75%) | 15 (54%) | 13 (43%) | 37 (49%) |
| Articles Taken (p = .57) | | | | | |
| Yes | 3 (30%) | 3 (38%) | 14 (50%) | 16 (53%) | 36 (47%) |
| No | 7 (70%) | 5 (62%) | 14 (50%) | 14 (47%) | 40 (53%) |
| Transportation (p = .40) | | | | | |
| Yes | 0 (0%) | 2 (25%) | 3 (11%) | 5 (17%) | 10 (13%) |
| No | 10 (100%) | 6 (75%) | 25 (89%) | 25 (83%) | 66 (87%) |
| Sexual Dysfunction (p = .43) | | | | | |
| Yes | 1 (10%) | 3 (38%) | 4 (14%) | 6 (20%) | 14 (18%) |
| No | 9 (90%) | 5 (62%) | 24 (86%) | 24 (80%) | 62 (82%) |
| Substance Use (p = .75) | | | | | |
| Yes | 1 (10%) | 0 (0%) | 3 (11%) | 4 (13%) | 8 (11%) |
| No | 9 (90%) | 8 (100%) | 25 (89%) | 26 (87%) | 68 (89%) |
| Percent Rapes With Anal Intercourse/Inanimate Object Penetration (p = .44) | | | | | |
| Mean | 20.20% | 20.00% | 11.00% | 18.60% | 16.16% |
| S.D. | (28.85) | (17.53) | (17.75) | (21.77) | (21.04) |
| Victim Age (p = .90) | | | | | |
| Mean | 28.50 | 32.00 | 27.50 | 27.78 | 28.23 |
| S.D. | (12.98) | (11.39) | (15.67) | (13.48) | (14.16) |
| Oldest Victim* (p = .25) | | | | | |
| Under 40 | 5 (50%) | 4 (50%) | 20 (74%) | 15 (50%) | 44 (59%) |
| 40 + | 5 (50%) | 4 (50%) | 7 (26%) | 15 (50%) | 31 (41%) |

TABLE 15 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS BY GEOGRAPHICAL MODELS**

| MODAL VARIABLES | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | TOTAL (n=76) |
|------------------------------------|-------------------|------------------|-------------------|-------------------|-----------------|
| 5. Modus Operandi (cont'd): | | | | | |
| Youngest Victim* (p = .94) | | | | | |
| Under 19 | 6 (60%) | 5 (63%) | 14 (52%) | 16 (53%) | 41 (55%) |
| 19 + | 4 (40%) | 3 (37%) | 13 (48%) | 14 (47%) | 34 (45%) |
| Victim Age Range* (p = .09) | | | | | |
| 0 - 16 | 2 (20%) | 2 (25%) | 16 (59%) | 11 (37%) | 31 (41%) |
| 17 + | 8 (80%) | 6 (75%) | 11 (41%) | 19 (63%) | 44 (59%) |

Note: * indicates missing data for that variable.

se who travel further tend more often to have a gun present during the assault, when compared
he other rapists. The data also suggest trends wherein younger offenders rape either close to
ne or far from home, whereas older offenders rape in the interim area; that black offenders
re often live inside the Convex Hull Polygon, while white offenders more often live outside the
vex Hull Polygon; that those who rape in the vicinity of their home generally have more than
r sexual assaults in their series; that outdoor rapists tend to live outside the Convex Hull
ygon, but at moderate distances; that those who rape in the vicinity of their home consistently
a surprise manner of approach; and that those who rape closest to home and furthest away
l to have a knife present during the assault.

Table 16 summarizes differences between the four geographical models on the 58
avioral scales that quantify the interaction occurring between the victim and the rapist.
nificant differences were found on ten of these behavioral scales (i.e., Self-Deprecating,
eral Hostility, Apologetic, Bindings, Duration of Assault, Planning of Rape, Fellatio, Digital
etration, and Complimentary and Demeaning Behavior). The nature of these differences vary
oss the scales and across the four models. For example, ICH rapists appear to be more self-
recating and apologetic than OCH rapists, whereas the uses of bindings and the perpetration
onger assaults are manifest by both the ICH and OCH rapists, but only those who travel
siderable distances. In contrast to these patterns determined by both the cluster and distance,
ird pattern emerges in which one model is unique in its behavioral manifestations. For
mple, fellatio appears to be a preferred form of sexual behavior primarily for the Model II
sts. The classificatory and interactional effects of these models as they pertain to the
graphical patterning of rape is discussed further in Chapter VI of the report.

TABLE 16

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS BY GEOGRAPHICAL MODEL**

| INTERACTIONAL SCALE | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (n=76) |
|-----------------------------------|---------------------------|--------------------------|---------------------------|---------------------------|----------------------------------|
| 1. Verbal Scales: | | | | | |
| Personal Information | | | | | |
| (p = .91) | | | | | |
| Mean | 1.68 | 1.67 | 1.56 | 1.55 | 1.58 |
| S.D. | (.52) | (.64) | (.52) | (.70) | (.60) |
| Excuses (p = .25) | | | | | |
| Mean | 1.19 | 1.31 | 1.13 | 1.16 | 1.17 |
| S.D. | (.17) | (.39) | (.21) | (.20) | (.23) |
| Self-Promotion (p = .46) | | | | | |
| Mean | 1.02 | 1.04 | 1.13 | 1.11 | 1.10 |
| S.D. | (.05) | (.12) | (.26) | (.19) | (.21) |
| Self-Deprecating (p = .01) | | | | | |
| Mean | 1.16 | 1.32 | 1.05 | 1.04 | 1.09 |
| S.D. | (.22) | (.56) | (.12) | (.10) | (.23) |
| Sensitivity to | | | | | |
| Victim (p = .31) | | | | | |
| Mean | 2.17 | 1.79 | 1.75 | 1.86 | 1.86 |
| S.D. | (.61) | (.42) | (.70) | (.51) | (.60) |
| Inquisitive (p = .81) | | | | | |
| Mean | 1.50 | 1.34 | 1.55 | 1.55 | 1.52 |
| S.D. | (.40) | (.59) | (.59) | (.61) | (.57) |
| Complimentary to | | | | | |
| Victim (p = .25) | | | | | |
| Mean | 1.20 | 1.21 | 1.10 | 1.09 | 1.12 |
| S.D. | (.22) | (.29) | (.20) | (.16) | (.20) |
| Hostility/Women | | | | | |
| (p = .39) | | | | | |
| Mean | 1.18 | 1.23 | 1.40 | 1.41 | 1.35 |
| S.D. | (.23) | (.45) | (.47) | (.41) | (.42) |
| Hostility/General | | | | | |
| (p = .06) | | | | | |
| Mean | 1.05 | 1.15 | 1.02 | 1.05 | 1.05 |
| S.D. | (.11) | (.24) | (.06) | (.12) | (.12) |
| Reassuring (p = .18) | | | | | |
| Mean | 2.01 | 1.68 | 1.59 | 1.64 | 1.10 |
| S.D. | (.59) | (.27) | (.62) | (.43) | (.21) |

TABLE 16 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS BY GEOGRAPHICAL MODEL**

| INTERACTIONAL SCALE | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (n=76) |
|---|---------------------------|--------------------------|---------------------------|---------------------------|----------------------------------|
| Verbal Scales (cont'd): | | | | | |
| Apologetic (p = .01) | | | | | |
| Mean | 1.11 | 1.34 | 1.06 | 1.07 | 1.10 |
| S.D. | (.13) | (.44) | (.16) | (.16) | (.48) |
| Demands (p = .53) | | | | | |
| Mean | 3.10 | 3.11 | 3.04 | 3.23 | 3.13 |
| S.D. | (.41) | (.50) | (.52) | (.46) | (.48) |
| Threats (p = .37) | | | | | |
| Mean | 2.08 | 2.39 | 2.15 | 2.34 | 2.24 |
| S.D. | (.58) | (.37) | (.63) | (.49) | (.55) |
| Sexually-Oriented Speech (p = .95) | | | | | |
| Mean | 1.53 | 1.63 | 1.65 | 1.58 | 1.61 |
| S.D. | (.53) | (.63) | (.65) | (.56) | (.59) |
| Verbal Scripting (p = .23) | | | | | |
| Mean | 1.03 | 1.20 | 1.05 | 1.13 | 1.09 |
| S.D. | (.09) | (.30) | (.16) | (.29) | (.23) |
| Demeaning Scripting (p = .97) | | | | | |
| Mean | 1.06 | 1.04 | 1.05 | 1.06 | 1.06 |
| S.D. | (.12) | (.09) | (.14) | (.15) | (.13) |
| Scripting to Compliment Rapist (p = .14) | | | | | |
| Mean | 1.00 | 1.08 | 1.03 | 1.07 | 1.05 |
| S.D. | (.00) | (.24) | (.11) | (.16) | (.14) |
| Behavioral Scripting (p = .41) | | | | | |
| Mean | 1.47 | 1.69 | 1.63 | 1.46 | 1.55 |
| S.D. | (.51) | (.31) | (.50) | (.47) | (.48) |
| Verbal Negotiation (p = .55) | | | | | |
| Mean | 1.08 | 1.05 | 1.13 | 1.15 | 1.12 |
| S.D. | (.13) | (.09) | (.25) | (.20) | (.20) |

TABLE 16 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS BY GEOGRAPHICAL MODEL**

| INTERACTIONAL SCALE | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (n=76) |
|---|---------------------------|--------------------------|---------------------------|---------------------------|----------------------------------|
| 2. Physical Scales: | | | | | |
| Blunt Force (p = .84) | | | | | |
| Mean | 1.27 | 1.40 | 1.42 | 1.36 | 1.37 |
| S.D. | (.36) | (.27) | (.45) | (.53) | (.45) |
| Victim Injury/Blunt Force (p = .78) | | | | | |
| Mean | 1.19 | 1.33 | 1.30 | 1.27 | 1.28 |
| S.D. | (.20) | (.27) | (.30) | (.38) | (.32) |
| Victim Injury/Other than Blunt Force (p = .83) | | | | | |
| Mean | 1.80 | 1.84 | 1.73 | 1.83 | 1.79 |
| S.D. | (.45) | (.34) | (.48) | (.38) | (.42) |
| Victim Injury (p = .56) | | | | | |
| Mean | 1.41 | 1.65 | 1.53 | 1.46 | 1.50 |
| S.D. | (.29) | (.26) | (.45) | (.40) | (.40) |
| Bindings (p = .03) | | | | | |
| Mean | 1.44 | 1.71 | 1.31 | 1.86 | 1.59 |
| S.D. | (.80) | (.60) | (.50) | (.87) | (.74) |
| Binding Materials (p = .10) | | | | | |
| Mean | 1.25 | 1.81 | 1.35 | 1.77 | 1.55 |
| S.D. | (.37) | (.89) | (.65) | (.95) | (.81) |
| Sadistic Infliction of Pain (p = .50) | | | | | |
| Mean | 1.06 | 1.08 | 1.25 | 1.23 | 1.20 |
| S.D. | (.09) | (.12) | (.43) | (.50) | (.41) |
| Function of Force (p = .43) | | | | | |
| Mean | 1.32 | 1.48 | 1.58 | 1.38 | 1.46 |
| S.D. | (.34) | (.39) | (.67) | (.47) | (.53) |
| Captivity | | | | | |
| Mean | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| S.D. | (.00) | (.00) | (.00) | (.00) | (.00) |

TABLE 16 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS BY GEOGRAPHICAL MODEL**

| INTERACTIONAL SCALE | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (n=76) |
|---|---------------------------|--------------------------|---------------------------|---------------------------|----------------------------------|
| Physical Scales (cont'd): | | | | | |
| Effort Not to Harm (p = .46) | | | | | |
| Mean | 1.35 | 1.27 | 1.26 | 1.42 | 1.34 |
| S.D. | (.51) | (.21) | (.35) | (.42) | (.39) |
| Transportation of Victim (p = .47) | | | | | |
| Mean | 1.00 | 1.38 | 1.21 | 1.40 | 1.28 |
| S.D. | (.00) | (.52) | (.57) | (1.00) | (.74) |
| Rapist's Efforts to Protect Identity (p = .34) | | | | | |
| Mean | 2.22 | 2.01 | 1.95 | 2.23 | 2.10 |
| S.D. | (.49) | (.70) | (.65) | (.62) | (.63) |
| Duration of Assault (p = .05) | | | | | |
| Mean | 1.96 | 2.48 | 1.89 | 2.26 | 2.11 |
| S.D. | (.66) | (1.09) | (.43) | (.64) | (.66) |
| Macho Behavior (p = .25) | | | | | |
| Mean | 2.68 | 2.87 | 3.16 | 2.92 | 2.97 |
| S.D. | (.73) | (.68) | (.72) | (.64) | (.69) |
| Planning of Rape (p = .09) | | | | | |
| Mean | 3.23 | 3.18 | 2.89 | 3.22 | 3.10 |
| S.D. | (.33) | (.25) | (.64) | (.53) | (.55) |
| Humiliation of Victim (p = .59) | | | | | |
| Mean | 1.30 | 1.46 | 1.40 | 1.53 | 1.45 |
| S.D. | (.33) | (.57) | (.52) | (.52) | (.50) |
| Enjoyment (p = .58) | | | | | |
| Mean | 1.12 | 1.34 | 1.27 | 1.26 | 1.25 |
| S.D. | (.14) | (.40) | (.40) | (.33) | (.35) |
| Sexual Behavior: | | | | | |
| Kissing (p = .97) | | | | | |
| Mean | 1.21 | 1.29 | 1.23 | 1.24 | 1.24 |
| S.D. | (.33) | (.23) | (.39) | (.41) | (.37) |

TABLE 16 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS BY GEOGRAPHICAL MODEL**

| INTERACTIONAL SCALE | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (n=76) |
|---|-------------------|------------------|-------------------|-------------------|-------------------------|
| 3. Sexual Behavior (cont'd): | | | | | |
| Nuzzling (p = .73) | | | | | |
| Mean | 1.26 | 1.13 | 1.27 | 1.23 | 1.24 |
| S.D. | (.22) | (.12) | (.40) | (.30) | (.32) |
| Fondling (p = .45) | | | | | |
| Mean | 1.55 | 1.40 | 1.39 | 1.59 | 1.49 |
| S.D. | (.28) | (.32) | (.56) | (.57) | (.58) |
| Fellatio (p = .05) | | | | | |
| Mean | 1.54 | 1.94 | 1.34 | 1.53 | 1.50 |
| S.D. | (.75) | (.76) | (.37) | (.48) | (.54) |
| Cunnilingus (p = .18) | | | | | |
| Mean | 1.43 | 1.12 | 1.13 | 1.16 | 1.18 |
| S.D. | (.86) | (.15) | (.30) | (.23) | (.39) |
| Anal Sex (p = .48) | | | | | |
| Mean | 1.25 | 1.20 | 1.13 | 1.27 | 1.21 |
| S.D. | (.39) | (.19) | (.19) | (.45) | (.34) |
| Vaginal Sex (p = .14) | | | | | |
| Mean | 2.51 | 2.51 | 2.20 | 2.13 | 2.24 |
| S.D. | (.74) | (.79) | (.39) | (.54) | (.56) |
| Foreign Object Penetration (p = .83) | | | | | |
| Mean | 1.08 | 1.00 | 1.05 | 1.06 | 1.05 |
| S.D. | (.13) | (.00) | (.24) | (.16) | (.18) |
| Digital Penetration (p = .05) | | | | | |
| Mean | 1.38 | 1.20 | 1.13 | 1.36 | 1.26 |
| S.D. | (.45) | (.31) | (.18) | (.42) | (.35) |
| 4. Resistance Scales: | | | | | |
| Verbal Resistance (p = .98) | | | | | |
| Mean | 2.32 | 2.37 | 2.30 | 2.37 | 2.34 |
| S.D. | (.41) | (.39) | (.77) | (.69) | (.66) |

TABLE 16 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS BY GEOGRAPHICAL MODEL**

| | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (n=76) |
|---|-------------------|------------------|-------------------|-------------------|-------------------------|
| Resistance Scales (cont'd): | | | | | |
| Non-Confrontative Resistance (p = .70) | | | | | |
| Mean | 1.18 | 1.28 | 1.29 | 1.32 | 1.29 |
| S.D. | (.17) | (.28) | (.30) | (.35) | (.30) |
| Physical Resistance (p = .22) | | | | | |
| Mean | 1.94 | 1.41 | 1.64 | 1.63 | 1.65 |
| S.D. | (.32) | (.39) | (.51) | (.63) | (.54) |
| Rapist Response to Victim Resistance (p = .29) | | | | | |
| Mean | 1.88 | 2.05 | 2.20 | 1.93 | 2.03 |
| S.D. | (.30) | (.44) | (.67) | (.62) | (.60) |
| Previous Scales: | | | | | |
| Complimentary/Demeaning About Self (p = .002) | | | | | |
| Mean | 3.13 | 3.18 | 2.96 | 2.96 | 3.01 |
| S.D. | (.14) | (.26) | (.20) | (.16) | (.20) |
| Anger (p = .11) | | | | | |
| Mean | 2.15 | 2.37 | 2.68 | 2.46 | 2.49 |
| S.D. | (.56) | (.37) | (.58) | (.70) | (.62) |
| Complimentary/Demeaning About Victim (p = .65) | | | | | |
| Mean | 3.04 | 3.18 | 3.18 | 3.21 | 3.17 |
| S.D. | (.43) | (.23) | (.44) | (.25) | (.35) |
| Apologetic/Demanding (p = .45) | | | | | |
| Mean | 3.64 | 3.73 | 3.77 | 3.82 | 3.77 |
| S.D. | (.26) | (.39) | (.33) | (.29) | (.31) |
| Profanity (p = .71) | | | | | |
| Mean | 1.50 | 1.48 | 1.70 | 1.61 | 1.61 |
| S.D. | (.54) | (.71) | (.65) | (.52) | (.59) |
| Victim Selection (p = .35) | | | | | |
| Mean | 3.08 | 2.87 | 2.58 | 2.82 | 2.77 |
| S.D. | (.75) | (.59) | (.93) | (.73) | (.81) |

TABLE 16 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE OF SERIAL RAPISTS BY GEOGRAPHICAL MODEL**

| INTERACTIONAL SCALE | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (n=76) |
|-------------------------------------|-------------------|------------------|-------------------|-------------------|-------------------------|
| 5. Previous Scales (cont'd): | | | | | |
| Planning of Rape (p = .06) | | | | | |
| Mean | 3.21 | 3.12 | 2.86 | 3.21 | 3.07 |
| S.D. | (.35) | (.26) | (.56) | (.55) | (.53) |
| Injuries (p = .54) | | | | | |
| Mean | 1.88 | 2.23 | 2.28 | 2.07 | 2.14 |
| S.D. | (.60) | (.65) | (.81) | (.92) | (.81) |
| Sensitive/Macho (p = .39) | | | | | |
| Mean | 2.91 | 3.05 | 3.24 | 3.03 | 3.10 |
| S.D. | (.59) | (.49) | (.72) | (.47) | (.59) |

These findings highlight the greater conceptual and investigative clarity that can be gained by combining distances with the cluster pattern of the rapes perpetrated by each offender. As noted earlier regarding Table 13 and Table 14, the cluster pattern alone offered little guidance in terms of associating demographic and crime scene information with the location of the perpetrator's residence. When the distance variable is added to the measure, more differences are observed across the four groups (or models) both on the demographic and modal variables, as well as the mean scores on the various behavioral scales. Directionality, a third geographic measure, might enhance these models further. Directionality, however, seems to be a factor that to some degree determined by the actual characteristics of the city or region in which the perpetrator resides. Therefore, it will require further study within particular geographical areas so that details relevant to racial and socio-economic distributions, traffic patterns, clusterings of particular victims, and security factors can be understood.

Table 17 summarizes differences between rapists who live inside the Canter Circle (i.e., intruders) and those who live outside the Canter Circle (Commuters) on the demographic and modal variables (for complete background on the Canter Circle, see page 33). As indicated, the white rapists in the current sample tended to live outside the Canter Circle, while the minority rapists more often lived inside the Canter Circle. This difference between the geographical groupings of white and minority rapists is also observed on the distance measures summarized on page 215, suggesting that these movement patterns are influenced by factors associated with ethnicity. As such, they may reflect different access to vehicles, different densities of race-specific victims, and/or different cognitive structuring in crime patterns.

Table 17 also indicates a difference in terms of the number of Other Crimes Against

TABLE 17

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CANTER CIRCLE**

| MODAL VARIABLES | <u>RESIDENCE LOCATION</u> | | |
|---|---------------------------|---------------------|-----------------|
| | Marauders (n=39) | Commuters (n=37) | TOTAL (n=76) |
| 1. Rapist Age[*]: (p = .15) | | | |
| Under 26 | 17 (49%) | 10 (31%) | 27 (40%) |
| 26 + | 18 (51%) | 22 (69%) | 40 (60%) |
| 2. Rapist Race[*]: (p = .04) | | | |
| White | 11 (34%) | 17 (61%) | 28 (47%) |
| Minority | 21 (65%) | 11 (39%) | 32 (53%) |
| 3. Total Rapes: (p = .83) | | | |
| 2 - 4 | 18 (46%) | 18 (49%) | 36 (47%) |
| > 4 | 21 (54%) | 19 (51%) | 40 (53%) |
| 4. Criminal History: | | | |
| Criminal History Index (p = .38) | | | |
| Mean | 927.76 | 725.94 | 831.51 |
| S.D. | (1197.65) | (474.21) | (924.84) |
| Total Violent Crimes (p = .87) | | | |
| Mean | 1.14 | 1.22 | 1.18 |
| S.D. | (2.07) | (1.72) | (1.90) |
| Total Potentially Violent Crimes (p = .35) | | | |
| Mean | 3.60 | 1.81 | 2.75 |
| S.D. | (10.43) | (2.78) | (7.78) |

TABLE 17 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CANTER CIRCLE**

| MODAL VARIABLES | <u>RESIDENCE LOCATION</u> | | |
|-------------------------------------|---------------------------|---------------------|-----------------|
| | Marauders (n=39) | Commuters (n=37) | TOTAL (n=76) |
| Criminal History (cont'd): | | | |
| Total Other Crimes | | | |
| Against Person ($p = .01$) | | | |
| Mean | 1.08 | 0.22 | 0.67 |
| S.D. | (1.84) | (.61) | (1.45) |
| Total Sexual Crimes ($p = .48$) | | | |
| Mean | 7.11 | 5.22 | 6.21 |
| S.D. | (14.57) | (3.98) | (10.85) |
| Total Property Crimes ($p = .87$) | | | |
| Mean | 4.06 | 3.88 | 3.97 |
| S.D. | (4.72) | (4.05) | (4.38) |
| Total Drug Crimes ($p = .18$) | | | |
| Mean | 0.49 | 0.16 | 0.33 |
| S.D. | (1.20) | (.72) | (1.01) |
| Total Minor Crimes ($p = .60$) | | | |
| Mean | 0.94 | 0.72 | 0.84 |
| S.D. | (2.03) | (1.35) | (1.73) |
| Total Charges ($p = .38$) | | | |
| Mean | 18.49 | 13.72 | 16.21 |
| S.D. | (28.84) | (10.82) | (22.12) |
| Modus Operandi: | | | |
| Contact Site* ($p = .29$) | | | |
| Victim's Residence | | | |
| or Workplace | 24 (62%) | 37 (73%) | 51 (67%) |
| Other | 15 (38%) | 21 (27%) | 25 (32%) |

TABLE 17 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CANTER CIRCLE**

| MODAL VARIABLES | <u>RESIDENCE LOCATION</u> | | |
|------------------------------------|---------------------------|---------------------|-----------------|
| | Marauders (n=39) | Commuters (n=37) | TOTAL (n=76) |
| 5. Modus Operandi (cont'd): | | | |
| Location (p = .39) | | | |
| Indoors | 26 (67%) | 28 (76%) | 54 (71%) |
| Outdoors/Variable | 13 (33%) | 9 (24%) | 22 (29%) |
| Approach Method (p = .69) | | | |
| Surprise | 32 (82%) | 29 (78%) | 61 (80%) |
| Other | 7 (18%) | 8 (22%) | 15 (20%) |
| Bindings (p = .69) | | | |
| Bindings Used | 7 (18%) | 8 (22%) | 15 (20%) |
| Bindings Not Used | 32 (82%) | 29 (78%) | 61 (80%) |
| Knife Used/Displayed (p = .36) | | | |
| Yes | 18 (46%) | 21 (57%) | 39 (51%) |
| No | 21 (54%) | 16 (43%) | 37 (49%) |
| Gun Used/Displayed (p = .07) | | | |
| Yes | 9 (23%) | 3 (8%) | 12 (16%) |
| No | 30 (77%) | 34 (92%) | 64 (84%) |
| Sexual Ritual (p = .08) | | | |
| Yes | 22 (56%) | 28 (76%) | 50 (66%) |
| No | 17 (44%) | 9 (24%) | 26 (34%) |
| Victim Race* (p = .90) | | | |
| White | 30 (77%) | 28 (76%) | 58 (76%) |
| Other | 9 (23%) | 9 (24%) | 18 (24%) |
| Day/Night (p = .03) | | | |
| Daytime/Variable | 4 (10%) | 11 (30%) | 15 (20%) |
| Nighttime | 35 (90%) | 26 (70%) | 61 (80%) |

TABLE 17 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CANTER CIRCLE**

| MODAL VARIABLES | <u>RESIDENCE LOCATION</u> | | |
|---|---------------------------|---------------------|-----------------|
| | Marauders (n=39) | Commuters (n=37) | TOTAL (n=76) |
| Modus Operandi (cont'd): | | | |
| Weekday/Weekend (p = .17) | | | |
| Weekdays | 17 (44%) | 22 (60%) | 39 (51%) |
| Weekends/Variable | 22 (56%) | 15 (40%) | 37 (49%) |
| Articles Taken (p = .83) | | | |
| Yes | 18 (46%) | 18 (49%) | 36 (47%) |
| No | 21 (54%) | 19 (51%) | 40 (53%) |
| Transportation (p = .93) | | | |
| Yes | 34 (87%) | 32 (87%) | 66 (87%) |
| No | 5 (13%) | 5 (13%) | 10 (13%) |
| Sexual Dysfunction (p = .10) | | | |
| Yes | 10 (26%) | 4 (11%) | 14 (12%) |
| No | 29 (74%) | 33 (89%) | 62 (82%) |
| Substance Use (p = .12) | | | |
| Yes | 2 (5%) | 6 (16%) | 8 (11%) |
| No | 37 (95%) | 31 (84%) | 68 (89%) |
| Percent Rapes With Anal Intercourse Inanimate Object Penetration (p = .42) | | | |
| Mean | 18.08% | 14.14% | 16.16% |
| S.D. | (22.37) | (19.56) | (21.00) |
| Victim Age (p = .23) | | | |
| Mean | 30.11 | 25.97 | 28.23 |
| S.D. | (14.30) | (13.27) | (13.89) |
| Oldest Victim* (p = .32) | | | |
| Under 40 | 25 (64%) | 19 (53%) | 44 (59%) |
| 40 + | 14 (36%) | 17 (47%) | 31 (41%) |

TABLE 17 (cont'd)

**RAPIST CHARACTERISTICS: DEMOGRAPHIC AND MODAL CHARACTERISTICS
OF SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS. OUTSIDE
THE CANTER CIRCLE**

| | <u>RESIDENCE LOCATION</u> | | TOTAL |
|------------------------------------|---------------------------|-----------|----------|
| | Marauders | Commuters | |
| MODAL VARIABLES | (n=39) | (n=37) | (n=76) |
| 5. Modus Operandi (cont'd): | | | |
| Youngest Victim* (p = .88) | | | |
| Under 19 | 21 (54%) | 20 (56%) | 41 (55%) |
| 19 + | 18 (46%) | 16 (44%) | 34 (45%) |
| Victim Age Range* (p = .32) | | | |
| 0 - 16 | 14 (36%) | 17 (47%) | 31 (41%) |
| 17 + | 25 (64%) | 19 (53%) | 44 (59%) |

Note: * indicates missing data for that variable.

sons reported on the rapist's NCIC criminal record. This category of crimes is made up of offenses such as criminally negligent homicide, unlawful restraints, harassment, simple assault, menacing, and reckless endangerment. Interestingly, while the Commuters had fewer Other Crimes Against Persons, the two groups did not differ in terms of the number of Violent, Sexual, and Property crimes that they had committed. In this regard, it can be noted that both groups were found to have extensive criminal histories, with an average of one Violent, two or three Potentially Violent, seven Sexual, and four Property crimes.

Aspects of the offender's modus operandi also reflected some potential differences between the Marauders and the Commuters. As indicated, the Marauders almost always raped during the night (90 percent of the Marauders raped predominantly during the night), whereas the Commuters raped both during the day and the night (30 percent predominantly during the day and 70 percent predominantly during the night). It would seem likely that the Marauders use the term of raping at night as one means of protecting their identity, given that their residence is situated in the midst of their offenses. The data also suggests a trend wherein the Marauders played a gun modally (24 percent of the rapists) more often than did the Commuters (8 percent of the rapists). In contrast, the Commuters modally demonstrated more ritualistic behavior (76 percent) than did the Marauders (56 percent).

Finally, Table 18 summarizes differences between the Marauders and Commuters on the behavioral scales that quantify the interaction occurring between the rapist and his victim. As summarized, only three scales show significant differences, differences that may likely constitute artifact of the large number of analyses. Two of these scales are sexual in nature (fondling and genital sex) and suggest that the Marauders are more interested than Commuters in what might

TABLE 18

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS OUTSIDE
THE CANTER CIRCLE**

| INTERACTIONAL SCALES | <u>RESIDENCE LOCATION</u> | | GRAND MEAN (n=108) |
|--------------------------------------|---------------------------|-------------------|--------------------------|
| | INSIDE (n=39) | OUTSIDE (n=37) | |
| 1. Verbal Scales: | | | |
| Personal Information (p = .31) | | | |
| Mean | 1.52 | 1.66 | 1.58 |
| S.D. | (.50) | (.69) | (.60) |
| Excuses (p = .80) | | | |
| Mean | 1.18 | 1.16 | 1.17 |
| S.D. | (.24) | (.21) | (.23) |
| Self-Promotion (p = .26) | | | |
| Mean | 1.07 | 1.13 | 1.10 |
| S.D. | (.18) | (.23) | (.21) |
| Self-Deprecating (p = .38) | | | |
| Mean | 1.11 | 1.06 | 1.09 |
| S.D. | (.29) | (.13) | (.23) |
| Sensitivity to Victim (p = .65) | | | |
| Mean | 1.89 | 1.82 | 1.86 |
| S.D. | (.58) | (.62) | (.60) |
| Inquisitive (p = .37) | | | |
| Mean | 1.46 | 1.58 | 1.52 |
| S.D. | (.49) | (.64) | (.57) |
| Complimentary to Victim (p = .68) | | | |
| Mean | 1.13 | 1.11 | 1.12 |
| S.D. | (.22) | (.19) | (.20) |
| Hostility/Women (p = .41) | | | |
| Mean | 1.39 | 1.31 | 1.35 |
| S.D. | (.47) | (.37) | (.42) |
| Hostility/General (p = .47) | | | |
| Mean | 1.04 | 1.06 | 1.05 |
| S.D. | (.12) | (.12) | (.12) |
| Reassuring (p = .49) | | | |
| Mean | 1.71 | 1.63 | 1.67 |
| S.D. | (.48) | (.57) | (.53) |

TABLE 18 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS OUTSIDE
THE CANTER CIRCLE**

| INTERACTIONAL SCALES | RESIDENCE LOCATION | | GRAND MEAN (n=108) |
|---|--------------------|-------------------|--------------------------|
| | INSIDE (n=39) | OUTSIDE (n=37) | |
| Verbal Scales (cont'd): | | | |
| Apologetic (p = .94) | | | |
| Mean | 1.11 | 1.10 | 1.10 |
| S.D. | (.25) | (.17) | (.21) |
| Demands (p = .52) | | | |
| Mean | 3.17 | 3.10 | 3.13 |
| S.D. | (.40) | (.55) | (.48) |
| Threats (p = .96) | | | |
| Mean | 2.24 | 2.24 | 2.24 |
| S.D. | (.65) | (.43) | (.55) |
| Sexually-Oriented Speech (p = .79) | | | |
| Mean | 1.63 | 1.59 | 1.61 |
| S.D. | (.58) | (.60) | (.59) |
| Verbal Scripting (p = .16) | | | |
| Mean | 1.13 | 1.06 | 1.09 |
| S.D. | (.28) | (.16) | (.23) |
| Demeaning Scripting (p = .61) | | | |
| Mean | 1.05 | 1.06 | 1.06 |
| S.D. | (.13) | (.14) | (.13) |
| Scripting to Compliment Rapist (p = .29) | | | |
| Mean | 1.06 | 1.03 | 1.05 |
| S.D. | (.18) | (.09) | (.14) |
| Behavioral Scripting (p = .38) | | | |
| Mean | 1.60 | 1.50 | 1.55 |
| S.D. | (.49) | (.46) | (.48) |
| Verbal Negotiation (p = .89) | | | |
| Mean | 1.12 | 1.12 | 1.12 |
| S.D. | (.22) | (.18) | (.26) |

TABLE 18 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS OUTSIDE
THE CANTER CIRCLE**

| INTERACTIONAL SCALES | RESIDENCE LOCATION | | GRAND MEAN (n=108) |
|---|--------------------|-------------------|--------------------------|
| | INSIDE (n=39) | OUTSIDE (n=37) | |
| 2. Physical Scales: | | | |
| Blunt Force (p = .63) | | | |
| Mean | 1.40 | 1.35 | 1.37 |
| S.D. | (.50) | (.40) | (.45) |
| Victim Injury/Blunt Force (p = .84) | | | |
| Mean | 1.28 | 1.27 | 1.28 |
| S.D. | (.34) | (.29) | (.32) |
| Victim Injury/Other than Blunt Force (p = .27) | | | |
| Mean | 1.84 | 1.74 | 1.79 |
| S.D. | (.40) | (.44) | (.42) |
| Total Victim Injury (p = .55) | | | |
| Mean | 1.52 | 1.47 | 1.50 |
| S.D. | (.36) | (.43) | (.40) |
| Bindings (p = .38) | | | |
| Mean | 1.45 | 1.67 | 1.59 |
| S.D. | (.72) | (.88) | (.74) |
| Binding Materials (p = .28) | | | |
| Mean | 1.45 | 1.66 | 1.55 |
| S.D. | (.72) | (.88) | (.81) |
| Sadistic Infliction of Pain (p = .94) | | | |
| Mean | 1.21 | 1.20 | 1.20 |
| S.D. | (.39) | (.44) | (.41) |
| Function of Force (p = .56) | | | |
| Mean | 1.49 | 1.42 | 1.46 |
| S.D. | (.53) | (.55) | (.53) |
| Captivity | | | |
| Mean | 1.00 | 1.00 | 1.00 |
| S.D. | (.00) | (.00) | (.00) |

TABLE 18 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS OUTSIDE
THE CANTER CIRCLE**

| | <u>RESIDENCE LOCATION</u> | | GRAND MEAN (n=108) |
|---|---------------------------|-------------------|--------------------------|
| | INSIDE (n=39) | OUTSIDE (n=37) | |
| ERACTIONAL LES | | | |
| Physical Scales (cont'd): | | | |
| Effort Not to Harm (p = .60) | | | |
| Mean | 1.36 | 1.31 | 1.34 |
| S.D. | (.44) | (.34) | (.39) |
| Transportation of Victim (p = .81) | | | |
| Mean | 1.26 | 1.30 | 1.28 |
| S.D. | (.64) | (.85) | (.74) |
| Rapist's Efforts to Protect Identity (p = .86) | | | |
| Mean | 2.09 | 2.12 | 2.10 |
| S.D. | (.63) | (.64) | (.63) |
| Duration of Assault (p = .58) | | | |
| Mean | 2.15 | 2.06 | 2.11 |
| S.D. | (.71) | (.60) | (.66) |
| Macho Behavior (p = .29) | | | |
| Mean | 3.05 | 2.88 | 2.97 |
| S.D. | (.78) | (.58) | (.69) |
| Planning of Rape (p = .53) | | | |
| Mean | 3.14 | 3.06 | 3.10 |
| S.D. | (.41) | (.66) | (.55) |
| Humiliation of Victim (p = .12) | | | |
| Mean | 1.53 | 1.35 | 1.45 |
| S.D. | (.56) | (.43) | (.50) |
| Enjoyment (p = .80) | | | |
| Mean | 1.26 | 1.24 | 1.25 |
| S.D. | (.36) | (.34) | (.35) |
| Sexual Behavior: | | | |
| Kissing (p = .49) | | | |
| Mean | 1.21 | 1.27 | 1.24 |
| S.D. | (.29) | (.45) | (.37) |

TABLE 18 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS OUTSIDE
THE CANTER CIRCLE**

| INTERACTIONAL SCALES | RESIDENCE LOCATION | | GRAND MEAN (n=108) |
|-------------------------------|--------------------|-------------------|--------------------------|
| | INSIDE (n=39) | OUTSIDE (n=37) | |
| 3. Sexual Behavior (cont'd): | | | |
| Nuzzling (p = .32) | | | |
| Mean | 1.20 | 1.28 | 1.24 |
| S.D. | (.23) | (.39) | (.32) |
| Fondling (p = .04) | | | |
| Mean | 1.38 | 1.61 | 1.49 |
| S.D. | (.30) | (.66) | (.52) |
| Fellatio (p = .21) | | | |
| Mean | 1.58 | 1.42 | 1.50 |
| S.D. | (.65) | (.39) | (.54) |
| Cunnilingus (p = .95) | | | |
| Mean | 1.18 | 1.18 | 1.18 |
| S.D. | (.46) | (.31) | (.39) |
| Anal Sex (p = .35) | | | |
| Mean | 1.24 | 1.17 | 1.21 |
| S.D. | (.36) | (.33) | (.34) |
| Vaginal Sex (p = .04) | | | |
| Mean | 2.37 | 2.11 | 2.24 |
| S.D. | (.57) | (.53) | (.56) |
| Foreign Object | | | |
| Penetration (p = .74) | | | |
| Mean | 1.06 | 1.04 | 1.05 |
| S.D. | (.22) | (.14) | (.18) |
| Digital Penetration (p = .29) | | | |
| Mean | 1.22 | 1.31 | 1.26 |
| S.D. | (.33) | (.38) | (.35) |

4. Resistance Scales:

| | | | |
|-----------------------------|-------|-------|-------|
| Verbal Resistance (p = .91) | | | |
| Mean | 2.33 | 2.35 | 2.34 |
| S.D. | (.59) | (.73) | (.66) |

TABLE 18 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS OUTSIDE
THE CANTER CIRCLE**

| INTERACTIONAL CALES | RESIDENCE LOCATION | | GRAND MEAN (n=108) |
|---|--------------------|-------------------|--------------------------|
| | INSIDE (n=39) | OUTSIDE (n=37) | |
| . Resistance Scales (cont'd): | | | |
| Non-Confrontative Resistance (p = .22) | | | |
| Mean | 1.24 | 1.33 | 1.29 |
| S.D. | (.30) | (.30) | (.30) |
| Physical Resistance (p = .91) | | | |
| Mean | 1.64 | 1.66 | 1.65 |
| S.D. | (.53) | (.55) | (.54) |
| Rapist Response to Victim Resistance (p = .47) | | | |
| Mean | 1.98 | 2.08 | 2.03 |
| S.D. | (.60) | (.60) | (.60) |
| . Previous Scales: | | | |
| Complimentary/Demeaning About Self (p = .04) | | | |
| Mean | 3.05 | 2.96 | 3.01 |
| S.D. | (.22) | (.16) | (.20) |
| Anger (p = .97) | | | |
| Mean | 2.48 | 2.49 | 2.49 |
| S.D. | (.60) | (.66) | (.62) |
| Complimentary/Demeaning About Victim (p = .11) | | | |
| Mean | 3.24 | 3.11 | 3.17 |
| S.D. | (.36) | (.34) | (.35) |
| Apologetic/Demanding (p = .49) | | | |
| Mean | 3.79 | 3.74 | 3.77 |
| S.D. | (.34) | (.29) | (.31) |
| Profanity (p = .30) | | | |
| Mean | 1.68 | 1.54 | 1.61 |
| S.D. | (.65) | (.52) | (.59) |
| Victim Selection (p = .88) | | | |
| Mean | 2.78 | 2.76 | 2.77 |
| S.D. | (.80) | (.82) | (.81) |

TABLE 18 (cont'd)

**RAPIST CHARACTERISTICS: MEAN BEHAVIORAL SCALE SCORES AT FIRST
RAPE BY SERIAL RAPISTS WITH RESIDENCES LOCATED INSIDE VS OUTSIDE
THE CANTER CIRCLE**

| INTERACTIONAL SCALES | <u>RESIDENCE LOCATION</u> | | GRAND MEAN (n=108) |
|-------------------------------------|---------------------------|-------------------|--------------------------|
| | INSIDE (n=39) | OUTSIDE (n=37) | |
| 5. Previous Scales (cont'd): | | | |
| Planning of Rape (p = .40) | | | |
| Mean | 3.12 | 3.02 | 3.07 |
| S.D. | (.43) | (.62) | (.53) |
| Injuries (p = .97) | | | |
| Mean | 2.13 | 2.14 | 2.15 |
| S.D. | (.77) | (.87) | (.81) |
| Sensitive/Macho (p = .61) | | | |
| Mean | 3.13 | 3.06 | 3.10 |
| S.D. | (.64) | (.54) | (.59) |

TABLE 19**RAPIST CHARACTERISTICS: RAPIST RACE BY VICTIM RACE AND AGE**

| VICTIM CHARACTERISTICS | RAPIST CHARACTERISTICS | |
|-----------------------------------|-----------------------------------|-----------------|
| | White | Minority |
| Race: | | |
| White | 40 (98%) | 27 (64%) |
| Black | 0 (0%) | 12 (29%) |
| Hispanic | 1 (2%) | 2 (5%) |
| Other | 0 (0%) | 0 (0%) |
| Variable | 0 (0%) | 1 (2%) |
| Racial Cross-Over | | |
| Victim/Rapist Same Race | 40 (100%) | 12 (31%) |
| Victim/Rapist Different Race | 0 (0%) | 27 (69%) |
| Age: | | |
| Under 13 | 1 (2%) | 2 (5%) |
| 14-20 | 7 (17%) | 10 (23%) |
| 21-27 | 14 (34%) | 7 (16%) |
| 28-35 | 4 (10%) | 7 (16%) |
| 36-42 | 1 (2%) | 1 (2%) |
| 43-50 | 1 (2%) | 0 (0%) |
| 51-58 | 0 (0%) | 1 (2%) |
| 59-66 | 0 (0%) | 2 (5%) |
| 67+ | 2 (5%) | 2 (5%) |
| No Modal Age | 11 (27%) | 12 (27%) |

Note: Cases do not = 108 due to missing data on one of the cross-tabulated variables.

be referred to as "normal" sexual acts. This finding appears to be congruent with the earlier finding that Commuters display more ritualized types of rape behavior.

D. CROSS-TABULATION OF RAPIST RACE, AGE, AND TYPE BY VICTIM AGE AND RACE

Table 19 examines the race and age of the victims chosen by the serial rapists in the current sample. As indicated, white rapists almost exclusively rape white victims (and one Hispanic victim) while minority rapists rape white, black, and other minority victims. The rate of racial cross-over is, in fact, 2 percent for white offenders and 69 percent for minority offenders. The preferred age range also appears to be slightly different; for white offenders the modal victim age is 21 to 27 years, while for black offenders the modal age is 14 to 20 years. For both racial groups, the incidence of selecting victims over the age of 35 years is minimal. However, among both racial groups there is a scattering of rapes perpetrated against elderly victims.

Table 20 examines the Groth clinical type and Increaser/Non-Increaser status in terms of the mean difference between the rapist's and victim's ages at the time of the first rape. As indicated, the Power-Assertive rapist appears to rape victims of approximately the same age, whereas the Power-Reassurance and particularly the Anger-Retaliatory rapist rapes victims who are substantially older. While there is considerable variability in this measure, the data suggests that the anger manifest in the rapes of the Anger-Retaliatory rapist is directed not against age peers, but rather towards women who are 15 to 20 years older than the perpetrator. This finding suggests that contrary to common stereotypes, rapists do not rape women of the same age, but rather, in many instances, women who are significantly older.

This pattern is further elucidated in Table 21. Here, it becomes clear that victims who are

TABLE 20

**CLINICAL TYPE AND INCREASER STATUS BY MEAN AGE DIFFERENCE
BETWEEN VICTIM AND OFFENDER AT FIRST RAPE**

| FIRST CHARACTERISTIC | Mean Difference (S.D.) (Victim Age - Offender Age) | |
|---------------------------|---|---------|
| | | |
| Clinical Type | | |
| Power-Reassurance | 15.73 | (29.26) |
| Power-Assertive | 4.74 | (20.95) |
| Anger-Retaliatory | 21.00 | (37.38) |
| Anger-Excitation | 12.71 | (29.39) |
| Increaser Status | | |
| Blunt Force Increaser | 11.37 | (26.36) |
| Blunt Force Non-Increaser | 7.13 | (25.07) |

TABLE 21

VICTIM CHARACTERISTICS: VICTIM AGE BY RAPIST AGE AND RACE

| FIRST CHARACTERISTICS | VICTIM CHARACTERISTICS | | |
|-----------------------|------------------------|-----------------|---------------|
| | Mean Age (S.D.) | Youngest (S.D.) | Oldest (S.D.) |
| Age: | | | |
| Under 18 | 29.67 (8.36) | 19.33 (4.72) | 47.00 (21.54) |
| 18 - 25 | 30.35 (13.10) | 21.79 (12.11) | 40.35 (17.78) |
| 26 - 33 | 28.12 (10.41) | 19.35 (7.57) | 39.35 (19.19) |
| 34 - 41 | 33.00 (16.06) | 24.40 (14.39) | 40.90 (19.96) |
| 42 - 49 | 43.00 (00.00) | 38.00 (00.00) | 38.38 (15.01) |
| Missing | 27.69 (14.21) | 19.08 (15.08) | 38.38 (15.01) |
| Race: | | | |
| White | 29.85 (10.35) | 21.20 (8.00) | 40.49 (16.80) |
| Black | 30.66 (14.01) | 21.45 (12.54) | 40.77 (20.49) |
| Missing | 24.33 (5.72) | 17.56 (6.54) | 38.89 (18.69) |

approximately 30 years of age are the preferred victim for the majority of younger rapists. In contrast, rapists who are older seem to focus on victims in their comparative age category. No racial differences are noted in terms of youngest, oldest, and mean victim age.

E. COMMON FACTOR ANALYSIS OF VERBAL, SEXUAL, AND BEHAVIORAL SCALES

The verbal, sexual, and physical scales as well as one resistance scale (i.e., Rapist Response to Victim Resistance) were analyzed using common factor analysis. This analysis was undertaken in order to conceptually explore organizing themes in the interactions that occurred between the rapists and their victims and in order to create simpler, composite variables for use in subsequent analyses. Common factor analysis (CFA) was chosen over principal component analysis (PCA) because of its more conservative loadings, greater accuracy, and greater stability across complex models (McArdle, 1990).

The factor analysis was conducted not only on the current data set, but also on two others: one containing coded statements of 41 rapists describing their first, middle, and last rapes, and the other containing coded police reports like those used in the current study, taken from victims of the 41 aforementioned rapists. Perhaps because of the relative paucity of data available in the rapists' own statements and the rapists' tendencies to underreport their use of force, the factor patterns for the 41 rapist statements often differed from factor patterns obtained using the two sets of victim statements in police reports. Nevertheless, the factor pattern across the two sets of police reports was relatively consistent. The victims of the 41 rapists were more frequent victims of Anger-Excitation rapists than the current sample, and this affected the variability of a few variables, such as Intentional Infliction of Pain and Use of a Foreign Object; overall, however,

sistency between the two groups was found in the factor analyses.

For both sets of victim statements, visual inspection of the scree plot revealed that the optimal number of factors was between seven and ten. Factor analyses using seven, eight, nine, and ten solutions were therefore run and compared for mathematical and conceptual clarity. The eight factor solution provided the clearest conceptual formulation and was subsequently used to develop the composite variables. Three of the original scales were dropped from the composite variables: 1) Duration; 2) Captivity; and 3) Behavioral Scripting. Duration of the Rape was dropped as it was highly correlated with many of the other activity scales and created a factor that iterated rather than clarified the relationship between the remaining variables. Captivity was dropped as there were no rapes in Data Set I (VSDS) that involved any type of sustained captivity. Behavioral Scripting was dropped as it loaded on different factors depending on the number used, and therefore did not represent an adequate degree of consistency with any particular set of variables.

Because common factor analysis was used and the use of weighting by factor loadings was appropriate, composite variables created from the factors included with equal weight all component variables. However, because of the different number of variables contained in each factor, each combination of variables was weighted appropriately to obtain comparable composite score ranges. The eight factor solution is summarized in Table 22.

These factors reflect organizing behavioral themes in the current sample of 565 rapes perpetrated by the 108 serial rapists. The Force Factor clearly reflects the physical restraint intrinsic to rape and the different ways that this element of force can be conceptualized (i.e., the amount of force directed against the victim, the perceived purpose of the force directed against

TABLE 22

SCALES INCLUDED IN FACTOR-ANALYTIC COMPOSITE SCORES

| VARIABLE | SCALES |
|----------------------|---|
| FORCE | Blunt Force Function of Force Victim Injury Due to Blunt Force Overall Victim Injury Intentional Infliction of Pain Rapist's Response to Victim Injury |
| RELATEDNESS | Sensitivity to Victim Inquisitiveness Complimentary Toward Victim Reassurance Effort Not to Harm Cunnilingus Vaginal Sex |
| DEPRECATATION | Personal Information About Self Excuses Self-Deprecation Generalized Hostility Apologetic Speech |
| SCRIPTING | Verbal Scripting Demeaning Scripting Scripting to Compliment Rapist Anal Sex |
| PLANNING | Bindings Materials for Binding Protection of Rapist I.D. Planning |

TABLE 22 (cont'd)

SCALES INCLUDED IN FACTOR-ANALYTIC COMPOSITE SCORES

| RIABLE | SCALES |
|-----------------------------|---|
| SCULINE REOTYPES | Hostility Toward Women Demands Threats Sexually Oriented Speech Macho Behavior Humiliation of Victim Fellatio |
| MANCE | Self-Promotion Complimentary Speech Verbal Negotiation Fondling Digital Penetration |
| DUCTION | Kissing on Mouth Nuzzling Use of Foreign Object (subtracted) |

the victim, the degree of injury experienced by the victim in response to this use of force, the apparent desire upon the part of the perpetrator to induce pain in the victim, and the rapist's response to resistance upon the part of the victim). As such, this factor reflects the interactional dynamic of rape and captures both the physically aggressive behavior of the perpetrator and the effect that victim resistance has upon his offense behavior.

The Relatedness Factor embodies some of the more "normal" aspects of an interpersonal interaction. It appears to contain the natural interest that one individual can show in another, the desire to minimize any painful or traumatizing effect that the rape may be having on the victim, and sexual behaviors that are generally perceived to be sexually gratifying to the woman. These dynamics suggest that this type of behavior may derive from a fantasized relationship between the rapist and his victim. In this regard, Hazelwood (1987) has observed that the Power-Reassurance rapist is the most likely to return to the scene of the rape and/or to attempt to recontact the victim. These behaviors obviously suggest some type of fantasized consensual encounter, in which the rapist superimposes on the event a meaning that is far different from that experienced by the victim.

The Deprecation Factor seems to reflect a feeling of personal discomfort upon the part of the rapist and a sense of hostility directed toward the victim. In this cluster of behaviors, the rapist makes excuses, apologies, addresses himself in a self-deprecating way, and conveys through his behavior or speech a general sense of hostility. This component of behavior reflects the hostility that is intrinsic to rape. Interestingly, these results suggest that the hostility is directed not only toward the victim but also toward the rapist himself.

The Scripting Factor appears to embody the control often associated with the sadistic

offender (Dietz, Hazelwood, and Warren, 1990). Through a careful structuring of what the victim says about herself and to the rapist, the rapist is able to enact the precise type of scenario that he finds arousing. Interestingly, the preference for anal intercourse found in the Dietz, Hazelwood, and Warren study also occurs in this clustering of variables.

The Planning Factor suggests a more methodical and experienced process of preparation for the rape. In this composite, the rapist displays a *modus operandi* that contains forethought in terms of bringing bindings to the scene of the crime and attempting to protect his identity. These behaviors suggest that this is not the first rape of an offender and that the rapist's level of "expertise" has evolved over the course of his rape career.

The Masculine Stereotype Factor embodies the behaviors often associated with a "macho" sense of male identity. Foremost in this factor is a devaluing attitude toward women with demanding, threatening, humiliating, and sexually oriented themes. The preferred form of sexual contact is fellatio.

The Romance Factor includes many of the behaviors that one normally associates with a consensual romantic encounter (i.e., self-promotion, complimentary speech, a negotiative stance, and sexual fondling). The Seduction Factor embodies the behaviors associated with sexual foreplay (i.e., kissing, nuzzling, and the absence of intrusive or painful sexual acts such as penetration with an inanimate object). This factor again suggests a fantasized relationship that contains some element of mutuality.

These factors seem to embody dimensions of mutuality, aggression, and criminality. The Relatedness, Romance, and Seduction factors apparently reflect elements of a fantasized consensual sexual relationship. The Force, Deprecation, Scripting, and Masculine Stereotype

Factors encapsulate the aggression, control, and humiliation that is also an intrinsic aspect of rape. Finally, the Planning factor conveys the criminality of the behavior and the rapist's clear awareness of his vulnerability should he be identified by his victim. These dimensions are not unlike those reported by Canter (1990) in his facet analyses of crime scene information. As outlined, he identified dimensions which he labeled "attempted intimacy," "overt violence and aggression," and "criminal behavior and intent." Unlike the current analysis, Canter's identification included sexual dimension, as well as one that he terms "impersonal interaction." The current factor solution argues against a distinctive sexual component, and offers support for the observation, made by Warren et al. (1991) in previous research, that the sexual acts contained within rape do not constitute a qualifying dimension of rape relevant to understanding the offender. While different aspects of criminal sexuality (e.g., fellatio, penetration with an inanimate object) weigh on various behavioral dimensions, they fail to constitute an independent, defining component of rape per se. This finding may represent a recapitulation of the axiom that rape is not about sex but about aggression.

CHAPTER IV

RESULTS: ANALYTIC EXPLORATION OF GROTH CLASSIFICATION USING DISCRIMINANT ANALYSIS AND LOGISTIC REGRESSION

A. GROTH TAXONOMY OF RAPIST TYPE

The use of the Groth taxonomy of rape as developed and applied by Hazelwood (1987) to crime scene information was examined using information contained in Part A and Part B of the protocol. The structure of these analyses focussed on three main themes or areas of inquiry: 1) the replication of the earlier study by Warren, Reboussin, Hazelwood, and Wright (1991) which used the original behavioral scales in Part B to classify rape type using discriminant analysis; 2) exploration of the revised scales in Part B in classifying rape type using discriminant analysis and logistic regression; and 3) exploration of the analytically derived composite scores in classifying rapist overall clinical type. These analyses were conducted in order to more fully explore the use of the Groth typology in organizing observations regarding a rapist's crime scene behavior and his possible motivation for perpetrating a particular type of sexual offense.

The crime scene behavior manifest during the first rape (n=86) was used when conducting the rape wise analysis using discriminant analysis and logistic regression. This was done to avoid problems with auto-correlation, as many of the rapes in the database were conducted by the same rapist (n=2 to 17). When using the composite factor scores to classify rapist overall clinical type, factor scores derived from the first rape were again used in the discriminant and logistic analyses. These analytic decisions were made in order to maximize the use of the findings in applied settings (for example, using the first rape perpetrated by an offender in order best to inform investigation

law enforcement) while also meeting the assumptions of the statistical analysis being used. The need to move back and forth between rape analyses and rapist analyses continually highlighted the complexity and richness of working simultaneously with a sample of serial rapists and their large number of serial offenses.

REPLICATION OF THE WARREN, REBOUSSIN, HAZELWOOD, AND WRIGHT (1991) STUDY

Table 23 summarizes the discriminant analyses designed to replicate the findings reported Warren et al. (1991) regarding classification of rape type at first rape according to the Grothology. The analyses included Power-Reassurance rapes, Power-Assertive rapes, and the two anger categories (i.e., Anger-retaliatory and Anger-excitation $n=7$). This analysis was run using exact entry as it was designed to replicate a model obtained in the earlier study.

Replication of the classification of the three rape types (i.e., the Power-Reassurance, Power-Assertive, and combined Anger rapes) using discriminant analysis was significant ($p<.001$) for both Function I and Function II. The model accounted for 67 percent of the variance and classified with an overall accuracy of 78 percent (84 percent, 71 percent, and 86 percent, respectively). Only six of the original scales could be used because of the small number of anger rapes classified during the first rape.

As summarized in Table 23, the three groups could be differentiated using both functions, the first made up of four scales with structure coefficients of greater than .30: Macho (.79); Anger (.74); Blunt Force (.48); and Reassurance (-.38). The second functions also contained four scales with structure coefficients greater than .30: Blunt Force (.60); Sensitive/Macho (-.45); Anger (.39); and Apologetic/Demanding (-.34). It would seem that these two functions represent

TABLE 23

**STRUCTURE COEFFICIENTS FOR DISCRIMINANT ANALYSIS BY RAPE TYPE ON
FIRST RAPE AND CLINICAL TYPE USING ORIGINAL AND REVISED SCALES**

| SCALE | FUNCTION I | FUNCTION II |
|---|------------|-------------|
| REPLICATION/RAPIST TYPES 1, 2, & 3 | | |
| Anger | .74 | .39 |
| Apologetic/Demand | .17 | -.34 |
| Blunt Force | .48 | .60 |
| Reassure | -.38 | .26 |
| Sensitive | .79 | -.45 |
| Victim Injury/Not Blunt Force | .23 | .20 |

Function I $p < .001$.

Function II $p < .001$.

Variance Explained = 67 percent; Correct Classification = 78 percent.

EXPLORATORY/CLINICAL TYPES 1, 2, & 3

| | | |
|-----------------------------------|-----|------|
| Anger | .91 | -.41 |
| Victim Injury | .85 | .52 |
| Function of Force | .75 | .15 |
| Blunt Force | .74 | .26 |
| Complimentary/Demeaning Victim | .47 | -.15 |
| Hostility/Women | .36 | -.23 |

Function I $p < .001$.

Function II $p < .07$.

Variance Explained = 17 percent; Correct Classification = 64 percent.

behavioral dimensions, one characterized primarily by the manner of the rapist and the other by the physical intrusiveness of the attack on the victim. More specifically, these functions suggest that the Power-Reassurance rape has less macho behavior and low levels of physical violence, that the Power-Assertive rape has more macho behavior but still fairly low levels of physical violence, and that the combined Anger rape has both high levels of macho behavior and high levels of physical violence and anger. Counter-intuitively, the combined Anger group tends to score toward the lower end of the Apologetic/Demanding Scale. In looking at these functions and graphing the group means, it becomes clear that the two Power groups are more similar than different, while the combined Anger group is substantially different in its defining dimension.

DISCRIMINANT ANALYSIS OF CLINICAL TYPE USING ORIGINAL AND REVISED SCALES

Following replication of the earlier study, exploratory analysis using rapists' clinical type was undertaken. This analysis included the revised unidirectional scales as well as the original scales; the discriminant analysis was run using step-wise entry.

The resultant model was significant ($p=.001$) and explained 17 percent of the variance with a correct overall classification of 64 percent (42 percent, 69 percent, and 9 percent, respectively). Function I was significant ($p<.001$), while Function II was not ($p=.07$). The two variables left in the final model were the original Anger Scale (.91) and the Victim Injury Scale (.85). This model suggests that anger and victim injury created a continuum upon which the three clinical types (i.e., Power-Reassurance, Power-Assertive and combined Anger) can be differentiated, at approximately equal distances along the continuum.

D. LOGISTIC ANALYSES OF CLINICAL RAPIST TYPE USING ORIGINAL AND REVISED SCALES

Because logistic regression is not constrained by the assumptions of multivariate normality that characterize discriminant analysis, logistic regressions were used not only to replicate the discriminant analyses, but also to explore, in a step-wise fashion, the inclusion of significant predictors of clinical type from among the behavioral scales. Within power types, the step-wise logistic regression shows its best predictive power using the Sensitive/Macho Scale and use of binding materials. Power-Reassurance rapists are less likely to display Macho behavior and more likely to use binding materials in the commission of their rapes (see Table 24). Within Anger types, the only significant predictor was planning, as Anger-Retaliatory rapists show greater impulsivity and Anger-Excitation rapists often make elaborate plans (see Table 25). Between the combined Power and combined Anger types, the best predictors were Use of a Foreign Object, Victim Injury not due to Blunt Force and Selection of Victim, all more characteristic of Anger than Power rapists (see Table 26). In assessing the difference between Power-Reassurance and combined Anger types, Intentional Infliction of Pain and Nonconfrontative Resistance by the victim were the most accurate predictors, with higher levels of both more characteristic of Anger rapists. When Power-Assertive rapists were compared to the combined Anger types, fellatio was more predictive of Power-Assertive rapists, and Sensitivity to Victim and Anger were more predictive of Anger rapists. It may be the often arrogant disregard for the victim voiced by the Power-Assertive rapists, rather than any marked sensitivity to the victim by the Anger rapists, that explains this finding.

TABLE 24

**PREDICTION OF CLINICAL TYPE WITHIN POWER TYPES (TYPES=2)
BETWEEN POWER-REASSURANCE AND POWER-ASSERTIVE
USING STEP-WISE LOGISTIC REGRESSION
OF BEHAVIORAL SCALES AT FIRST RAPE**

| Included Variables: | Standardized parameter estimate: | In Final Model, p< |
|-----------------------------|---|----------------------------------|
| Power-Assertive/Macho Scale | -0.635 | .0001 |
| Use of Binding Materials | 0.300 | .0198 |

83.3 percent accurate prediction of Power-Reassurance against Power-Assertive.
83.3 percent sensitivity and 83.3 percent specificity to Power-Reassurance (Type I).
False Positive = 25.7 percent. False negative = 26.2 percent.

TABLE 25

**PREDICTION OF CLINICAL TYPE WITHIN ANGER TYPES (TYPES=2)
BETWEEN ANGER-RETALIATORY AND ANGER-EXCITATION
USING STEP-WISE LOGISTIC REGRESSION
OF BEHAVIORAL SCALES AT FIRST RAPE**

| Included Variables: | Standardized parameter estimate: | In Final Model, p< |
|----------------------------|---|----------------------------------|
| Anger-Retaliatory | ----- | .0044 |

Because model failed to converge, no estimates of predictive power were generated.

TABLE 26

**PREDICTION OF CLINICAL TYPE (TYPES=2)
BETWEEN POWER (1, 2) AND ANGER TYPES (3, 4)
USING STEP-WISE LOGISTIC REGRESSION
OF BEHAVIORAL SCALES AT FIRST RAPE**

| Included Variables: | Standardized parameter estimate: | In Final Model, p< |
|---|---|----------------------------------|
| Use of Foreign Object | -0.475 | .0001 |
| Victim Injury Not Due to Blunt Force | -0.654 | .0032 |
| Selection of Victim | -0.585 | .0261 |

These findings are similar to those of the discriminant analyses. Interestingly, the use of items, which had to be removed from the discriminant analyses due to a significant Box's M, did not appear to be significant in the logistic regressions that differentiate the Power-Reassurance rape from the Power-Assertive rape. Both sets of analyses also suggest that the Anger rape is characterized by more anger and higher levels of force.

DISCRIMINANT ANALYSIS OF RAPIST CLINICAL TYPE USING FACTOR-ANALYTICALLY DERIVED COMPOSITE SCORES

As indicated above, a discriminant analysis was also conducted using the factor analytic composite scores whose derivation is described on page 171. This analysis was conducted in order to see whether these dimensions of rape behavior might be more useful than the scales for classifying rapists according to their overall clinical type. (See page 78 for a full description of rapist clinical type). While not ideal, composite scores derived from the first rape were used in this analysis. The use of a single rape was again required in order to avoid problems with autocorrelation and the first rape (for example, as contrasted to the last rape) was chosen as it seemed most useful to law enforcement in terms of early assessment and classification. This analysis was conducted using step-wise entry because of its exploratory nature.

As indicated in Table 27, the model was significant on both Function I ($p=.002$) and Function II ($p=.01$); it explained 30 percent of the variance and resulted in an overall correct classification of 63 percent (60 percent, 74 percent, and 25 percent correct classification, respectively). The model for Function I contained three factors with structure coefficients above .50: Planning (.74); Relatedness (.65); and Deprecation (.45). The model for Function II contained four factors with structure coefficients above .30: Force (.74); Masculine Stereotypes

TABLE 27

**STRUCTURE COEFFICIENTS FOR DISCRIMINANT ANALYSIS FOR RAPIST
CLINICAL TYPE USING THE FACTOR-ANALYTICALLY DERIVED COMPOSITE
SCORES**

| FACTOR COMPOSITE SCORES | FUNCTION I | FUNCTION II |
|--------------------------------|-------------------|--------------------|
| Planning | .74 | -.18 |
| Relatedness | .65 | -.32 |
| Deprecation | .45 | -.08 |
| Romance | .28 | -.08 |
| Force | .24 | .74 |
| Masculine Stereotypes | -.13 | .42 |
| Seduction | -.33 | -.39 |
| Scripting | -.02 | .23 |

Function I = $p < .002$.

Function II = $p < .01$.

Variance Explained = 30 percent.

Correct classification = 63 percent.

); Seduction (-.39); and Relatedness (-.32). These results seem to suggest two factor dimensions, the first of which suggests behavior that is interactional and enacted with the victim (i.e., aspects of the modus operandi and manner of relating to the victim), and the second of which seems to encompass stereotypically masculine behavior (i.e., the amount of force used and manifestation of stereotypically masculine behavior). The first appears to be more specific to rape while the second appears to be more specific to the rapist. Interestingly, these results suggest that behavioral dimensions from the first rape can be used to ascertain the clinical type of rapist that is ultimately demonstrated by a rapist over the course of his successive rapes.

These findings support the use of a typological framework in understanding different types of rape behavior, and suggest that the behaviors occurring between a rapist and his victim can be identified based upon the report of the victim and used in interpreting the motivations for the rape, both on a rape-by-rape basis and in terms of patterns of rapes by one offender over time (i.e., clinical type). Classification is possible using both the individual scales and the factor composite scores.

In reviewing these various findings, it appears that the three groups differ according to three primary dimensions. The first of these involves the various components of aggression in the rape (i.e., force, anger, and injury). The second dimension involves the way in which the rapist goes about choreographing the offense, such as the degree of planning demonstrated, the use of weapons, and the intentional infliction of pain. Interestingly, these dimensions encapsulate behaviors that are both situation-specific and person-specific, but do not highlight in any consistent manner the sexual nature of the event being studied.

In summarizing the numerous analyses contained in this section, it appears that the Power-

Reassurance rape is characterized by: a) less anger and less victim injury; b) less stereotypically masculine behavior; c) less selection of a particular victim; d) the tendency to use bindings; e) limited intentional infliction of pain; and f) less non-confrontational resistance. The Power-Assertive rape is characterized by: a) slightly more "macho" behavior; b) less use of bindings; c) interest in fellatio; and d) slightly more anger and victim injury. The Anger-Retaliatory rape has: a) more anger and victim injury and b) more impulsivity, whereas the Anger-Excitation rape has: a) more anger and victim injury and b) more planning. The combined Anger category of rape was also characterized by more careful selection of a victim and the intentional infliction of pain.

These findings suggest that these "types" are actually made up of an interplay of dimensions not unlike some of those intrinsic to the MTC:3 rape typology. Recognition of this dimensional substrate has motivated interest in the MTC:3 system and the development of a dimensional crime scene paradigm of rape behavior. Preliminary steps in the development of this type of paradigm are summarized in Appendix D.

CHAPTER V

RESULTS: ANALYTIC EXPLORATION OF INCREASER/NON-INCREASER STATUS USING DISCRIMINANT ANALYSIS AND LOGISTIC REGRESSION

A. INCREASER/NON-INCREASER STATUS

A second way of classifying rapists focuses on whether or not they demonstrated an increase in violence from their first to their last rapes (i.e., Increaser/Non-Increaser status). As summarized on pages 13-14, this distinction was found by Hazelwood, Reboussin, and Warren (1989) and Warren, Reboussin, Hazelwood, and Wright (1991) to be significant in terms of the number of offenses perpetrated by a rapist, the days between offenses, the sexual acts performed, and particular aspects of the rapist's modus operandi, such as the use of bindings, the transportation of the victim, and the duration of the rape. In order to further study this possible distinction between rapists, the earlier studies were replicated on the current sample and new exploratory analyses were developed.

As explained in the narrative proximate to Table 6, the Increaser/Non-Increaser variable was defined in two ways: 1) subtraction on the Blunt Force Scale from first to last rape (as used in the original studies by Hazelwood et al. (1989) and Warren et al. (1991); and 2) regression of the Blunt Force Scale from first to last rape. The subtraction of the Blunt Force Scale was used in the replication of the earlier studies, and the Blunt Force Scale Regression was used in the exploration of the revised scales, the factor scores, and the geographical and temporal sequencing of rapes by the same offender. Comparative analyses using these two measures suggest that the Blunt Force Regression is the most versatile measure of this concept; it is more precise than the

raction method as it contains less chance variation due to the different number of rapes perpetrated by the rapists in the current study (n= 2 to 17).

REPLICATION OF THE WARREN, REBOUSSIN, HAZELWOOD, AND WRIGHT STUDY (1991)

Replication of the earlier study by Warren et al., which classified Increasers and Non-Increasers using the rapist's crime scene behavior manifested during his first rape, was attempted on all cases in the current study that included three or more rapes (three being the definition of a rape used in the original study). In order to maximize similarity with the earlier study, increaser status was determined as it had been in the original study (i.e., by subtracting the score on the Blunt Force Scale for the last rape from the score on the Blunt Force Scale for the first rape for each offender). This resulted in 70 of the rapists being defined as Non-Increasers and 16 of the rapists as Increasers. This ratio of Increasers to Non-Increasers is very similar to that found in the earlier study, in which one quarter of the 41 serial rapists were found to increase in violence from first to last rape. All of the scales found to be significant in the original study were entered into the replication analysis.

The replication discriminant analysis was run using direct entry. The resultant discriminant model was not significant. Further exploration of this difference was attempted by examining racial difference trends within this classification. The current study contained an almost equal number of white and minority rapists (white=42; minority=44), but preliminary analysis (see Table 1) had shown that 79 percent of the Increasers were white. Similarly, in the original sample all of the Increasers had been white. This suggested that an increase in violence across rapes might be a pattern more often observed in white offenders and that this pattern had been encountered but not

fully understood in the original study. A discriminant analysis was therefore run, using only white rapists to see if the original model might be significant for this group only. This analysis was also not significant, suggesting that the classification as determined in the original study was not valid when applied to the current data.

C. ANALYSIS OF INCREASER/NON-INCREASER STATUS USING ORIGINAL AND REVISED BEHAVIORAL SCALES

The Increaser/Non-Increaser classification was subsequently explored further using the Blunt Force Scale Regression method of determining a rapist's Increaser or Non-Increaser status. As explained above, this method was developed and used in order to minimize random variability that arose from large differences in the number of rapes perpetrated by each rapist (n= 2 to 17).

Classification of Increasers (n=27) and Non-Increasers (n=81) using the Blunt Force Scale Regression method was attempted, using 26 of the original and revised behavioral scales. The discriminant analysis was run using step-wise entry. The choice of which scales to enter into the analysis was determined by reviewing the reliability (only scales with good to excellent reliability were used in the analysis) and variance (scales with little variance were excluded from the analysis) of each scale in Part B of the Protocol. The sexual scales were removed from the analysis because earlier analysis, both in this study and the earlier study by Warren et al. (1991), had shown them to be of no value in terms of differentiating between the various classifications.

When the original and revised scales were entered into the discriminant analysis, using step-wise entry, the model was significant ($p=.001$). The model explained 18 percent of the variance and classified with an overall accuracy of 79 percent. There was, however, a large discrepancy in the classificatory potential of the model for the Increaser and Non-Increaser

egories: the Non-Increasers were classified with an accuracy of 93 percent and the Increasers with an accuracy of only 37 percent. As summarized in Table 28 below, the scales that remained in the model included the Victim Selection Scale (.67), the Efforts Not to Harm Scale (.49), the Transportation Scale (.15), the Threats Scale (-.24), and the Victim Injury from Blunt Force Scale (-.32). This model suggests that those rapists who eventually escalate in violence were, at the time of their first rape, demonstrating a greater tendency than Non-Increasers to select a particular victim, demonstrating more behaviors designed to protect the victim from harm, and inflicting fewer injuries from blunt force. This finding suggests that Increasers, at the time of their first rape, are not demonstrating particularly violent behavior, and that the most important distinction from Non-Increasers lies in the specificity of their victim selection.

As in the earlier section, these findings were replicated using logistic regression. (See Table 29. The analyses were run using step-wise entry and included 58 of the original and revised scales that quantified the rapist's behavior at the time of the first rape. One scale proved significant in differentiating the Increasers from the Non-Increasers, the Victim Selection (.002).

CLASSIFICATION OF INCREASER/NON-INCREASER STATUS USING FACTOR-ANALYTICALLY DERIVED COMPOSITE SCORES

The potential value of the factor-analytically derived composite scores in differentiating between Increasers and Non-Increasers was also explored using discriminant analysis. When these composite scores were used to try to differentiate Increasers from Non-Increasers at the time of their first rape, the resultant model was not significant. This suggests that the composite scores may be too broad to pick up on these groups' differences at the beginning of their rape

TABLE 28

**STRUCTURE COEFFICIENTS FOR DISCRIMINANT ANALYSIS FOR
INCREASER/NON-INCREASER STATUS USING BEHAVIORAL SCALES AT FIRST
RAPE, FACTOR COMPOSITE SCORES AT LAST RAPE, AND MODAL VARIABLES**

| BEHAVIORAL SCALES/FIRST RAPE* | STRUCTURE COEFFICIENT |
|---|--------------------------------------|
| Victim Selection | .67 |
| Efforts not to Harm | .49 |
| Transportation | .14 |
| Threats | -.24 |
| Victim Injury from Blunt Force | -.32 |
| FACTOR COMPOSITE SCORES/ LAST RAPE | STRUCTURE COEFFICIENT |
| Force | .84 |
| Romance | .38 |
| Seduction | -.10 |
| Deprecation | .31 |
| MODAL VARIABLES*** | STRUCTURE COEFFICIENT |
| Race | .55 |
| Rapist Clinical Type | -.35 |
| Duration of Rapes | -.45 |
| Ritual | -.01 |
| Presence of Knife | .02 |
| In/out Convex Hull | .27 |

*Function I, $p = .001$; variance explained = 18 percent.
Correct classification = 79 percent.

**Function I, $p = .001$; variance explained = 40 percent.
Correct classification = 74 percent.

***Function I, $p = .003$; variance explained = 28 percent.
Correct classification = 81 percent.

TABLE 29

**PREDICTION OF INCREASER/NON-INCREASER STATUS USING STEP-WISE
LOGISTIC REGRESSION OF BEHAVIORAL SCALES AT FIRST RAPE**

| INCLUDED VARIABLES | STANDARDIZED PARAMETERS ESTIMATE | IN FINAL MODEL P< |
|--------------------|-------------------------------------|----------------------|
| Victim Selection | -.412 | .002 |

5 percent accurate prediction of Non-Increaser.
5 percent sensitivity and 15 percent specificity.
false positive = 23 percent.
false negative = 50 percent.

careers.

A significant model was obtained when the factor composite scores were used to differentiate the two groups at the time of their apprehension (see Table 28). The model was significant ($p=.001$): it explained 40 percent of the variance and resulted in an overall correct classification rate of 84 percent (94 percent of the Non-Increasers and 56 percent of the Increasers). The factors that remained in the model included the Force Factor (.84), the Romance Factor (.38), the Seduction Factor (-.10), and the Deprecation Factor (.31). This analysis suggests that by the time of their apprehension, the Increasers have begun to manifest more observable themes that differentiate them from the Non-Increasers. Obviously, by definition, they have become more violent. Simultaneously, they have also become more hostile, more interested in self-promotion, and possibly more interested in penetration with a foreign object (see page 171 for a full description of the composite factors).

E. CLASSIFICATION OF INCREASERS/NON-INCREASERS USING MODAL VARIABLES

In order to explore this question further using the nominal data from Part A of the protocol and from the NCIC records, a discriminant analysis was run, using 21 of the demographic and modal variables that describe the rapist's behavior over the course of their rape careers (see Table 28). The analysis, which was run using step-wise entry, was significant ($p<.001$); it explained 28 percent of the variance and classified with an overall accuracy of 81 percent (92 percent of the Non-Increasers and 47 percent of the Increasers). The variables that remained in the model included race (.55), rapist clinical type (-.35), duration of the rape (-.45), the presence of ritual (-.01), the use of a knife (.02), and whether or not the rapist raped inside or

side the Convex Hull Polygon (.27).

This analysis suggests that the Increasers tended more often than Non-Increasers to be te, to have been rated as falling further towards the Anger category of rape, and to have perpetrated rapes that are longer in duration than those perpetrated by the Non-Increasers.

These analyses suggest that the Increaser/Non-Increaser distinction is not as robust and/or rmative as thought given the results reported in the original study (Warren et al. 1991). This y reflect differences in the sample of serial rapists studied. The original sample (Hazelwood, oussin, and Warren, 1989) was made up of unique serial offenders responsible for 10 or more es, who also happened to be predominantly white. The current sample is made up of more eric serial rapists, responsible, on average, for 5.2 rapes, who happen to constitute an almost al mixture of minority and white offenders. Given these differences, it is possible that the reaser distinction is most useful amongst the more rarified group of serial rapists and not as ful with the more generic group of serial rapists.

The Increaser/Non-Increaser analyses in the current study were, however, of importance hat they helped to identify the racial patterning inherent to this classification. Clearly, the ority of the Increasers were white, suggesting that an escalation in violence (as well as high els of initial violence as observed in the Combined Anger category) over a series of rapes ears to be primarily a white phenomenon. In this sample, minority serial rapists tend to remain consistent level of blunt force (see page 104). This may reflect different motivations for the e as well as different reactions to the experience of having raped before. Also of interest is the ling, indicated in both the discriminant analysis and the logistic regression, that Increasers onstrated greater specificity in victim selection even at the time of their first rape. This

suggests that some dynamic may be at work (for example, over-controlled behavior; fantasized relationships with a specific victim) that subsequently is associated with an escalation in violence.

CHAPTER VI

RESULTS: GEOGRAPHICAL ANALYSIS/EXPLORATION OF DISTANCE, INDOOR/OUTDOOR, INSIDE/OUTSIDE CONVEX HULL POLYGON, GEOGRAPHICAL MODELS, AND COMMUTER/MARAUDER PATTERNS

A. GEOGRAPHICAL ANALYSIS FORMAT AND RATIONALE

One of the central goals of the current study lay in exploring and analyzing the geographical patterns manifested by serial rapists. In so doing, the study developed six primary geographic measures: 1) whether the rapes occurred predominantly indoors or outdoors; 2) the minimum, average, and maximum distance of a rapist's rapes from his home; 3) whether the rapist lived inside or outside the Convex Hull Polygon (CHP) created by the outside circumference of his rapes (see page 49 for a full description); 4) whether the rapist's pattern of rape fit one of the four Geographical Models (see page 49) that combined the pattern of rape with the distance travelled; 5) whether the rapist lived inside or outside the Canter circle (see page 49); and 6) whether the first or last rape was closest to the rapist's place of residence.

These data were collected and analyzed in order to contribute to journey-to-crime literature specifically as it pertains to serial rape. More importantly, they were analyzed in order to directly aid law enforcement in their attempts to apprehend serial sexual offenders. With this goal in mind, the crime-scene behavior of the rapist, determined in its scaled values, factor-analytically derived composite scores, and taxonomic (Groth) and typological (Increasers/Non-Increasers) distinctions were analyzed in relationship to each of the geographical variables to see if they might be of value in more precisely determining the pattern of a particular rapist's offenses

they relate to the location of his residence.

LOCATION OF THE RAPE: INDOORS VS. OUTDOORS

Whether a rape occurred indoors or outdoors was examined both in terms of the rape itself and in terms of the preference manifest by each of the 108 serial rapists across the course of their rape careers. As indicated in Table 1, 395 (70 percent) of the 565 rapes studied occurred indoors and 169 (30 percent) of the rapes occurred outdoors. This finding contradicts popular stereotypes of women's being at greatest risk outdoors and safest at home. In fact, 340 (86 percent) of the indoor rapes occurred in the victim's own home. These findings clearly emphasize the importance of home safety and of women's being informed of their risk when in the "safety" of their own homes.

Efforts were made to further understand the differences between these indoor and outdoor rapes as they are influenced by the crime-scene behavior associated with them and the characteristics of the perpetrators who commit them. Each rapist was defined as being modally an Indoor or Outdoor rapist. As summarized in Table 30, a discriminant analysis was subsequently run using 25 of the original and revised scales that represented the rapist's behavior at the time of his first rape. The analysis, being exploratory, was run using step-wise entry. The resultant model was significant ($p < .001$); it accounted for 60 percent of the variance and classified with an over-all accuracy rate of 88 percent (95 percent for Indoor and 77 percent for Outdoor). The scales that remained in the model which had structure coefficients of greater than .30 included: Selection of Victim (.54) and Protect I.D. (.43). This model suggests that the indoor rapist demonstrates more specificity in victim selection, and makes more efforts to protect his identity from his victim. Both of these characteristics suggest a different preparatory process for the

TABLE 30

**STRUCTURE COEFFICIENTS FOR DISCRIMINANT ANALYSIS CLASSIFYING
INDOOR/OUTDOOR RAPISTS BY BEHAVIOR AT FIRST RAPE USING BEHAVIORAL
SCALES, COMPOSITE FACTOR SCORES AND MODAL VARIABLES**

| BEHAVIORAL SCALE MODEL* | STRUCTURE COEFFICIENTS |
|----------------------------------|-----------------------------------|
| Selection of Victim | .54 |
| Protect I.D. | .43 |
| Complimentary/Demeaning Self | -.14 |
| Verbal Scripting | -.14 |
| Complimentary/Demeaning Victim | -.04 |
| Hostility Toward Women | -.14 |
| Personal Information | .04 |
| Macho | -.12 |
| Duration | -.05 |
| Victim Injury Blunt Force | -.05 |
| Sensitive/Macho | -.05 |
| Behavioral Scripting | -.03 |
| Threat | -.09 |
| COMPOSITE FACTOR SCORES** | |
| Planning | -.77 |
| Force | .26 |
| Seduction | .30 |
| Scripting | .18 |
| MODAL VARIABLES*** | |
| Transportation | -.74 |
| Protect Identification | .60 |
| Oldest Age of Victim | .33 |
| Presence of Gun | -.21 |

*Function I, $p < .001$; variance explained = 60 percent.
Correct classification = 88 percent.

**Function I, $p < .001$; variance explained = 19 percent.
Correct classification = 73 percent.

*** Function I, $p < .0001$; variance explained = 59 percent.
Correct classification = 83 percent.

door rapist, as opposed to the outdoor rapist who appears to be more random and impulsive in rape behavior.

Distinctions between rapists who rape primarily indoors and those who rape primarily outdoors was also examined using the eight factor-analytically derived composite scores. The discriminant analysis was run using step-wise entry. It resulted in a significant model ($p < .001$); the model explained 19 percent of the variance and resulted in an overall correct classification of 68 percent (93 percent for the indoor rapists and 33 percent for the outdoor rapists). The factors included in the final model included: Planning (-.77), Force (.26), Seduction (.30), and Scripting (.38). These findings suggest that the indoor rapist manifests more planning as a part of his offense, less interest in activities often associated with foreplay in consensual relationships, and possibly lower levels of force. This difference is not related to age differences (see Table 11), but may be related to the difference in the number of crimes perpetrated by these two types of offenders; as summarized in Table 11, the indoor rapists perpetrate significantly more rapes, suggesting that their modus operandi has become more developed and the intent of their crimes more determined. Alternatively, these differences may embody variability in the overall motivation for the rape, with the indoor rapists having a more fantasy-based motivation that requires more privacy to enact, while the outdoor rapists are more interested in a sexualized form of physical assault.

Finally, this distinction was examined using the modal variables that summarize the rapist's behavior over the course of his rape career. Sixteen of the modal variables were entered into the analysis using step-wise entry. The resultant model was significant ($p < .0001$); it accounted for 59 percent of the variance and classified with an accuracy of 83 percent (97 percent for the indoor

rapists and 57 percent for the outdoor rapists). As indicated in Table 30, the modal variables that remained in the analysis were: Transportation (-.75), Protect I.D. (.60), Oldest Age of Victim (.33), and Presence or Use of a Gun (-.21). These results suggest that the indoor rapist does not transport his victims, tends, as noted above, to make more efforts to protect his identity, and tends to rape more older victims than the outdoor rapist. As in Table 11, these findings suggest that young women are at higher risk on the streets than older women, while the latter have a higher probability of being raped in their homes. It is not clear whether this reflects differences in the motivation for the rape, the presence of different selection criteria for women in their homes (for example, the choice of affluent homes for robberies), or a spurious effect of variability when entering a home as opposed to apprehending the victim directly.

C. DISTANCE OF RAPES FROM RESIDENCE OF RAPIST: CLOSEST (SAFE AREA), MEDIAN, MEAN, FURTHEST DISTANCE TRAVELLED, AND AREA COVERED

The distance variables were examined for 83 of the 108 serial rapists in the current sample, all of whom had raped within 20 miles of their residence. Nine of the cases had to be removed, either because of missing data regarding the rapist's residence or because the residence could not be geocoded for the reasons described on page 47. Sixteen additional cases were removed from the analysis because they involved rapes perpetrated at more than 20 miles from the rapist's residence (21 to 620 miles). These cases represented travel patterns either between cities or across states that were thought to confound the predominant pattern of rapes occurring within a single city, and therefore they were removed from this particular series of analysis. Different exclusionary rules were used for the other geographical analyses and will be summarized in

sequent sections.

Five primary distance variables were used in these analyses: 1) the closest distance from home to rape manifest by each rapist; 2) the average distance travelled by each rapist to commit rapes; 3) the median distance travelled by each rapist to commit his rapes; 4) the furthest distance travelled by each offender to commit his rapes; and 5) the area covered by the rapist while committing his rapes. These distances were examined both as they describe the rape behavior of serial rapists in general, and as they describe the rape behavior of serial rapists with different demographic and criminal history characteristics and crime-scene behaviors.

The 83 local serial rapists (i.e., those rapists who travelled less than 20 miles) in this sample travelled, on the average, 3.14 miles to commit their rapes. Their closest distance was, on average, 1.7 miles, while their furthest distance travelled was, on the average, 4.9 miles. The average area covered by the Convex Hull Polygon was 7.14 miles. These distances suggest that the majority of serial rapists rape in a vicinity that is at least somewhat proximate to their homes and in an area which, by its proximity, must be somewhat familiar to them.

The range of the distances travelled is of interest in understanding variability in these distance variables. As indicated in Table 31, there initially appeared to be a "safe area" around the rapist's home inside of which there were no offenses. However, when this finding was explored in more detail, it became clear that the idea of a "safe area" represents a conceptualization that is unrecognized consciously or unconsciously by at most half of the rapists. While the mean closest distance is 1.7 miles, almost one half (40 rapists) of the rapists raped at least once within one half mile of their home, and an examination of these "close" distances for all rapists indicates a continuum rather than an absolute value to a "safe" or "unsafe" area. As discussed below, this

TABLE 31**DISTANCES TRAVELLED BY SERIAL RAPISTS:
COMPLETE SAMPLE AND LOCALLY-BASED RAPISTS**

| DISTANCE | N | MEAN | STANDARD DEVIATION | RANGE |
|-----------------------------|----|-------|-----------------------|------------|
| 1. Closest Distance | | | | |
| Complete | 99 | 8.18 | 31.16 | 0-242.48 |
| Local | 83 | 1.66 | 2.48 | 0-13.90 |
| 2. Mean Distance | | | | |
| Complete | 99 | 14.54 | 43.88 | .03-310.24 |
| Local | 83 | 3.14 | 3.04 | .03-16.4 |
| 3. Farthest Distance | | | | |
| Complete | 99 | 22.03 | 70.69 | .05-620.22 |
| Local | 83 | 4.93 | 4.22 | .05-18.4 |
| 4. Area | | | | |
| Complete | 76 | 55.38 | 227.00 | 0-1,628.60 |
| Local | 64 | 9.27 | 26.71 | 0-192.5 |

ose distance variable is influenced by the race, age, and Increaser Status of the perpetrator as well as characteristics of the crimes themselves, such as whether restraints were used and/or whether the rape occurred during the day or night.

In an attempt further to understand the factors that help to determine these differences, each of the five distance variables described above was analyzed in terms of its relationship to the modal variables that summarize the demographic, criminal history, and crime scene behavior of the rapists. As summarized in Table 32, these analyses included: 1) the rapist's race, age at first rape, clinical type, and Increaser status; 2) whether the rapist raped predominantly indoors or outdoors; 3) modal race of the victim; 4) the modal approach strategy used by the rapist; 5) whether the rapist used forced entry to gain access to his victim; 6) whether the rapist demonstrated "ritual" during the majority of his offenses; 7) whether the rapist used restraints during the majority of his rapes; 8) whether the rapist used or displayed a gun during the majority of his offenses; 9) whether the rapist used or displayed a knife during the majority of his offenses; 10) whether the rapist raped primarily during the daytime or nighttime; 11) whether the rapist raped primarily during the weekend or during the week; 12) modal age of victim; 13) the type of community in which the offender tended to rape; 14) the presence of a sexual dysfunction during the majority of the rapes; 15) the use of substances during the majority of rapes; 16) the removal of items from the scene of the majority of the rapes; 17) the presence of other individuals in the majority of the rapes; and 18) the use of bindings obtained at the scene of the crime, as contrasted with bindings brought to the scene of the crime by the rapist.

As indicated in Table 32, certain of these variables were significantly related to the distance travelled by the rapist. The race of the offender was related to the majority of the

TABLE 32

DISTANCE TRAVELLED AND AREA COVERED BY DEMOGRAPHIC, CRIMINAL HISTORY, CRIME SCENE BEHAVIOR, AND GEOGRAPHICAL PATTERN OF SERIAL RAPISTS

| FACTORS | N | SHORTEST | MEDIAN | MEAN | FARTHEST | N | AREA OF POLYGON |
|----------------------------|----|----------|--------|--------|----------|----|-----------------|
| 1. Rapist's Race | | | | | | | |
| White | 26 | 2.70* | 4.07 | 4.32* | 6.24* | 20 | 9.52 |
| Other | 43 | 1.23 | 2.40 | 2.46 | 3.97 | 32 | 3.45 |
| Unknown | 14 | - | - | - | - | - | - |
| 2. Clinical Type | | | | | | | |
| Type 1 | 33 | 2.16 | 3.32 | 3.36 | 4.81 | 29 | 7.06 |
| Type 2 | 42 | 1.43 | 3.01 | 3.17 | 5.32 | 30 | 12.67 |
| Type 3 & 4 | 8 | .83 | 1.99 | 2.12 | 3.37 | 5 | 1.63 |
| 3. Increaser Status | | | | | | | |
| Increaser | 21 | .81 | 2.24 | 2.59 | 5.10 | 18 | 5.45 |
| Non-Inc. | 62 | 1.95 | 3.31 | 3.33 | 4.86 | 46 | 10.76 |
| 4. Indoors/Outdoors | | | | | | | |
| Indoors | 49 | 1.61 | 3.33 | 3.38 | 5.44 | 43 | 11.91 |
| Outdoors | 29 | 1.55 | 2.45 | 2.69 | 4.22 | 19 | 4.20 |
| 5. Victim Race | | | | | | | |
| White | 60 | 1.91 | 3.55* | 3.61* | 5.55* | 46 | 11.61 |
| Other | 23 | 1.00 | 1.71 | 1.93 | 3.31 | 18 | 3.28 |
| 6. Approach | | | | | | | |
| Con | 11 | 1.05 | 2.44 | 2.49 | 3.96 | 7 | 2.10 |
| Surprise | 59 | 1.55 | 3.11 | 3.20 | 5.20 | 52 | 10.86 |
| 7. Ritual | | | | | | | |
| No | 31 | 1.27 | 2.10* | 2.30* | 3.90* | 24 | 4.78 |
| Yes | 52 | 1.89 | 3.60 | 3.64 | 5.54 | 40 | 11.96 |
| 8. Restraints | | | | | | | |
| No | 61 | 1.31* | 2.54* | 2.61** | 4.22* | 45 | 4.57* |
| Yes | 22 | 2.62 | 4.42 | 4.63 | 6.89 | 19 | 20.39 |

TABLE 32 (cont'd)

**DISTANCE TRAVELLED AND AREA COVERED BY DEMOGRAPHIC, CRIMINAL
HISTORY, CRIME SCENE BEHAVIOR, AND GEOGRAPHICAL PATTERN OF
SERIAL RAPIST**

| FACTORS | N | SHORTEST | MEDIAN | MEAN | FARTHEST | N | AREA OF POLYGON |
|--------------------------------|----|----------|--------|-------|----------|----|-----------------------|
| Bindings Obtained | | | | | | | |
| At Scene | 10 | 2.35 | 5.08 | 5.37* | 8.82 | 9 | 38.26 |
| Brought | 8 | .99 | 2.02 | 2.39 | 4.41 | 6 | 6.22 |
| Gun Presence or Use | | | | | | | |
| No | 73 | 1.74 | 3.11 | 3.17 | 4.80 | 56 | 9.84 |
| Yes | 10 | 1.08 | 2.49 | 2.93 | 5.84 | 8 | 5.22 |
| Knife (Presence or Use) | | | | | | | |
| No | 37 | 1.75 | 3.33 | 3.38 | 5.31 | 32 | 11.79 |
| Yes | 46 | 1.59 | 2.80 | 2.95 | 4.62 | 32 | 6.75 |
| Day or Night | | | | | | | |
| Daytime | 11 | 3.12* | 3.74 | 3.88 | 4.86 | 8 | .80 |
| Nighttime | 65 | 1.44 | 2.99 | 3.09 | 5.11 | 53 | 10.85 |
| Time of Week | | | | | | | |
| Weekdays | 46 | 1.74 | 2.78 | 2.87 | 4.31 | 32 | 3.82 |
| Weekend | 23 | .86 | 2.59 | 2.85 | 5.49 | 21 | 15.37 |
| Victim | | | | | | | |
| Child | 5 | 2.86 | 3.71 | 3.90 | 5.18 | 5 | 1.31 |
| Adult | 61 | 1.66 | 3.12 | 3.21 | 5.09 | 49 | 9.64 |
| Aged | 5 | .85 | 1.80 | 2.05 | 3.96 | 4 | 1.94 |
| Offender Age | | | | | | | |
| < 20 | 11 | .59 | 1.60 | 1.61 | 2.64 | 5 | 1.25 |
| 20 - 29 | 53 | 1.55 | 3.01 | 3.10 | 5.01 | 46 | 11.22 |
| > 29 | 19 | 2.58 | 4.13 | 4.13 | 6.02 | 13 | 5.43 |
| Community | | | | | | | |
| Rural | 2 | 2.88 | 3.19 | 3.34 | 4.19 | 1 | 1.51 |
| Suburban | 55 | 1.97 | 3.56 | 3.58 | 5.33 | 44 | 11.75 |
| Urban | 13 | .67 | 1.49 | 1.49 | 3.72 | 12 | 4.06 |

TABLE 32 (cont'd)

**DISTANCE TRAVELLED AND AREA COVERED BY DEMOGRAPHIC, CRIMINAL
HISTORY, CRIME SCENE BEHAVIOR, AND GEOGRAPHICAL PATTERN OF
SERIAL RAPIST**

| FACTORS | N | SHORTEST | MEDIAN | MEAN | FARTHEST | N | AREA OF POLYGO |
|---|----|----------|--------|-------|----------|----|----------------------|
| 17. Entry | | | | | | | |
| Not forced | 46 | 1.67 | 2.93 | 3.04 | 4.70 | 31 | 3.97 |
| Forced | 37 | 1.64 | 3.17 | 3.26 | 5.21 | 33 | 14.24 |
| 18. Sexual Dysfunction | | | | | | | |
| No | 65 | 1.49 | 2.85 | 2.96 | 4.76 | 53 | 9.13 |
| Yes | 18 | 2.27 | 3.72 | 3.78 | 5.53 | 11 | 9.92 |
| 19. Substance Abuse | | | | | | | |
| No | 73 | 1.76 | 3.10 | 3.21 | 5.00 | 58 | 10.19 |
| Yes | 10 | .92 | 2.60 | 2.60 | 4.39 | 6 | .33 |
| 20. Burglary | | | | | | | |
| No | 40 | 1.36 | 2.37* | 2.54 | 4.02* | 30 | 2.49* |
| Yes | 42 | 1.96 | 3.69 | 3.73 | 5.82 | 34 | 15.24 |
| 21. Presence of Other Person | | | | | | | |
| No | 73 | 1.67 | 2.98 | 3.11 | 4.88 | 59 | 9.12 |
| Yes | 10 | 1.60 | 3.43 | 3.39 | 5.30 | 5 | 11.01 |
| 22. Convex Hull Polygon | | | | | | | |
| Res./Inside | 16 | 1.08 | 3.17 | 3.20 | 5.51 | 16 | 23.54* |
| Res./Outside | 48 | 1.66 | 2.89 | 3.06 | 4.92 | 48 | 4.51 |
| 23. Canter Circle | | | | | | | |
| Marauder | 36 | .74** | 2.14* | 2.36* | 4.55 | 36 | 7.62 |
| Commuter | 28 | 2.51 | 4.01 | 4.03 | 5.73 | 28 | 11.38 |

*(p < .05)

**(p < .01)

tance measures. White rapists in the current sample travelled further than their minority counterparts (6.24 as compared to 3.97 miles) and maintained larger non-offending areas around their home (2.70 as contrasted to 1.23 miles). There was also a trend ($p=.10$) wherein white offenders covered a larger area while perpetrating their offenses. It is not clear whether these racial differences relate to class distinctions and therefore lesser and greater geographical mobility, the smaller area covered by exclusively minority neighborhoods, or to cultural differences in the cognitive structuring of space. This pattern is also seen with victim race, suggesting that rapists (both minority and white) who rape white women travel further than those who rape minorities. This is only partially explained by racial differences among the perpetrators.

There was a trend ($p=.07$) wherein Increasers maintained smaller non-offending areas around their homes. As this difference is not demonstrated for the other distance variables, it may be due to chance and to the rather large number of t-tests performed on the data set. If it is a meaningful finding, it likely reflects the various behaviors that have been found to be associated with a gradual increase in violence. One such behavior may be the tendency, manifested from the time of their first offenses, for Increasers to demonstrate more specificity in their selection of their victim (see Table 28). This would suggest that these men may select a particular woman to rape, perhaps one they see in their vicinity, and that they are motivated more to rape this particular victim than to find a more "generic" victim at some greater distance from their home. This behavior may also be related to the Increasers' tendency to more carefully plan their offenses, suggesting that they are less likely to travel distances in search of an unidentified victim.

As indicated in Table 32, rapists who demonstrated a "ritualized" behavior in the majority of their offenses tended, on average, to travel further than those rapists who did not (on average

3.65 miles as contrasted to 2.30 miles). In the current study, "ritual" was coded if the rape included verbal or behavioral scripting, sexual bondage, or any type of fantasy-based behavior that was not directly concerned with obtaining a victim, protecting the rapist's identity, and/or facilitating the rapist's escape. Similarly, rapists who used bindings or restraints in the context of their offenses tended to travel further (on average 4.63 miles as contrasted to 2.61 miles) and raped over a significantly larger area than those who did not (17.61 miles as contrasted to 3.37 miles). These two variables may be capturing the same behavior or different gradations of the use of restraints in enacting sexual bondage. Singularly or in tandem, they suggest a more fantasy-based and planned type of rape behavior and, therefore, a less impulsive form of sexual assault. As indicated in Table 32, the manner in which the restraints were obtained also was related to the median and average distance travelled by the offender. Those who brought restraints to the scene of their rapes travelled, on average, 2.39 miles, while those who obtained their restraints at the scene of the crime travelled, on average, 5.37 miles. As indicated later in the report (see page 229), the use of restraints was also related to whether the offender's first or last rape was closest to his home, suggesting that this is a variable that describes some element of planning and/or motivation that impacts on the geographical structuring of a particular offender's pattern of rape.

The timing of the rape also appeared to be related to the distance travelled by the rapist. As seen in Table 32, rapists who rape during the day maintain a larger non-offending area around their residence than those who rape predominantly during the night (3.12 miles as contrasted to 1.44 miles). In addition, there was a trend ($p=.06$) wherein those who rape during the week tend to cover less area than those who rape predominantly during the weekend (2.66 square miles covered by their rapes as contrasted to 14.03 square miles). It would seem that rapists who rape

ring the day travel further in order to avoid being identified within the confines of their own neighborhood. Furthermore, it may require more travel during daylight hours to find accessible victims, since women are less likely to be at home during daylight hours. Rapists who rape during the week also seem to adhere to some aspect of the work ethic, covering a smaller, more focused area. This suggests that they travel in more defined areas during the week, reflecting perhaps some cultural definition of weekday and weekend behavior and/or search behavior that is less exploratory and more restrictive.

The temporal analysis conducted by McCleary (see Appendix C) also indicated certain relationships between the distance travelled and the temporal sequencing of the rapes perpetrated by each offender. For example, the analysis indicated that for an individual rapist, the average distance between his offenses can be used to predict the average waiting time between his offenses. Across the rapes, the average distance between each rape and the first rape was 1.87 miles. For this distance, the regression equation predicts a waiting time of 28 days. The smallest average distance between each rape and the first rape was .05 miles; for this distance, the waiting time predicted by the regression is 12 days. McCleary suggests that this pattern could be explained by the fact that it takes less time to find a victim if the rapist remains in the same area, that offenders who stay within the same area have a higher proportion of their rapes attributed to them, or that there are psychological reasons that some offenders tend to stay in the same area and commit rapes more frequently while others travel further and wait longer between rapes (p.8). McCleary also found that the mean distance between each rape and the first rape is positively related to career length; offenders who travel greater distances have longer careers. For example, an offender with a mean distance of .05 miles between rapes would have a career of

approximately 35 days, while an offender with an average distance of 138 miles between rapes would have a career length of approximately 688 days. Grouping the year into trimesters, McCleary found that time between rapes did not vary by season.

As indicated in Table 32, there appeared to be a trend ($p=.09$) in which older offenders tended to travel further than younger offenders (6.02 miles as contrasted to 2.64 miles) and to maintain larger non-offending areas around their residences (2.58 miles as contrasted to .59 miles). It seems likely that these differences can be attributed, at least in part, to the greater impulsivity that is often seen in the offense behavior of young offenders. It may also reflect, however, the greater access older offenders have to vehicles and/or differences in the age related development of geographically-determined cognitive space.

Finally, aspects of the rapist's modus operandi are related to the distance travelled by the rapist in order to perpetrate his crimes. The presence of forced entry and the burglarizing of victims in the majority of the rapes were related to the offender's travelling further to perpetrate his crime, in terms both of the average ($p=.08$) and furthest ($p=.05$) distance travelled and of the overall area ($p=.06$) covered by the offender (for example, 12.70 square miles and 12.33 square miles as contrasted to 2.68 and 1.87 square miles). These aspects of the crime suggest that the offender has had experience with other types of property crime and that his motivation for the crime encompasses both a sexual and non-sexual component.

This hypothesis was confirmed with subsequent analysis of the criminal history information obtained for each offender. This analysis showed significant positive correlations between the size of the non-offending area, the average distance travelled, the general area covered by the rapist, and the number of property crimes contained in the rapist's computerized

iminal history. The number of previous rapes reported on the rapist's computerized criminal tory also correlated with the area variable, suggesting that rapists who have been convicted of vious rapes tend to travel further when implementing a subsequent series of sexual assaults.

Finally, the overall geographical pattern of rapes manifested by each rapist appears to be ated to the distance travelled by the rapist. Specifically, the area of the rapes perpetrated by ose rapists whose residences lie within the Convex Hull Polygon (for a full description of the nvex Hull designation see page 47) is significantly larger than the area of rapists whose idences lie outside the Convex Hull Polygon (23.53 miles as contrasted to 3.22 miles). This ding, if replicated, may prove useful in determining the location of a serial offender's residence ., if the area of a rapist's offenses is less than four miles, the probability is greatest that he lives ewhere outside the pattern created by his crimes). In contrast, if the area of the offenses is eater than five or six miles, the probability is greater that the offender lives inside of the pattern ated by his offenses.

Those rapists (Marauders) whose residence lay within the much larger area encompassed the Canter Circle (see page 47) travelled, on average, less distance than those rapists ommuters) whose residence lay outside the Canter Circle (2.23 miles as contrasted to 3.75 les). The non-offending area maintained by the two groups was also significantly different. e Marauders maintained a non-offending area of only .70 miles, while the Commuters intained a non-offending area of 2.51 miles. Interestingly, the area covered by the two groups er the course of their rapes was almost identical, suggesting that different conceptualizations of ace rather than size of space defines the victim search pattern of these two groups.

In order to assess the relative importance of these variables, which were found to be

significantly related to the distances travelled by the serial rapists in the current study, a multiple regression was run for each of the distance variables described above. The offender's race, the victim's race, the presence or absence of "ritual," the use or non-use of restraints, Increaser/Non-Increaser status, the presence or absence of forced entry, the co-occurrence of burglary, the offender's age, the timing of the rape, the weekday/weekend designation of the rape, and whether the residence was inside or outside the Convex Hull and the Canter Circle were entered (step-wise) as the dependent variables.

As indicated in Table 33, significant models were obtained for the shortest and average distance. In terms of the close distance or non-offending area maintained by the rapist around his residence, the use of restraints and the location of the residence inside or outside the Canter Circle (Marauders tended to have a smaller non-offending area) explained 30 percent of the variance in this distance variable. This finding suggests that rapists who use restraints and who seek victims in the area surrounding their homes (as contrasted to travelling to another neighborhood to procure victims) tend to maintain a smaller non-offending area around their homes and live closer to the clustering of their offenses than do rapists who do not use restraints and who consistently commute away from their area of residence in order to obtain their victims.

The model predicting the average distance was significant and explained 18 percent of the variance. Increaser/Non-Increaser status was the only significant variable, suggesting that Non-Increasers tend to travel farther, on average, than Increasers. (See Table 32, #3).

TABLE 33

**MULTIPLE REGRESSION OF DISTANCES TRAVELLED AND AREA COVERED BY
DEMOGRAPHIC, CRIME SCENE BEHAVIOR, AND GEOGRAPHICAL PATTERNS OF
SERIAL RAPE**

| Independent Variables Entered | Close Distance (Beta) | Median Distance (Beta) | Average Distance (Beta) | Furthest Distance (Beta) | Area (Beta) |
|--|--------------------------------------|---------------------------------------|--|---|------------------------|
| Offender Race | .07 | .07 | .05 | -.02 | -.004 |
| Offender Age | .21 | .21 | .22 | .22 | .02 |
| Victim Race | .04 | -.10 | -.06 | -.10 | .09 |
| Ritual | .04 | .15 | .12 | .10 | -.02 |
| Restraints (p = .06) | .35* | .22 | .31 | .28 | .29 |
| Increased Status | -.22 | -.18 | -.14* | .005 | -.06 |
| Forced Entry | .03 | -.05 | -.02 | -.004 | .08 |
| Burglary | .06 | .15 | .13 | .15 | .19 |
| Day/Night | .01 | .09 | .09 | .10 | .04 |
| Day of Week (p = .08) | .12 | .12 | .11 | .08 | .25 |
| Convex Hull | -.10 | -.04 | -.04 | .04 | -.35* |
| Canter Circle | .46** | .28 | .28 | .08 | .03 |
| | .30 | .14 | .18 | .06 | .15 |
| Adjusted R ² | 2.93** | 1.7 | 1.99* | 1.29 | 1.78 |

Significance F Value for Median Distance = .10

Significance F Value for Area = .08

< .05

< .01

D. THE CONVEX HULL POLYGON

A Convex Hull Polygon (CHP) was used in the current study to assess the relationship of the rapist's home to his series of rapes. It was coded into a dichotomous variable that designated whether the rapist lived inside or outside the form created by joining the outlying rapes within his particular pattern of rapes. Seven additional cases (n=76) had to be removed from this segment of the geographical analyses as the cases involved only two rapes and therefore, by definition, resulted in a line rather than a self-enclosed polygon.

As indicated in Table 13, 18 (24 percent) of the serial rapists in the current study lived inside the Convex Hull and 58 (76 percent) lived outside the Convex Hull. This finding is different from observations made by arson investigators, who have observed that the perpetrators of serial arson often live inside and generally near the center of the cluster formed by their crimes. This contradiction seems of interest in that it suggests that geographical patterns of serial offenses may be crime specific, and that patterns that are characteristic of some types of serial crime may not be characteristic of others.

In order to understand what demographic and crime-scene factors may be related to this system of classification (i.e., Inside or Outside the Convex Hull Polygon), discriminant analyses were run using 14 of the behavioral scales, the eight factorally derived composite scores, and the modal variables that summarize the rapist's behavior over the majority of his offenses.

The discriminant analysis using the behavioral scales was run using step-wise entry and involved 14 scales that had proven of interest in the earlier analyses. The scales included were: Personal Information about Self, Sensitivity, Inquisitiveness, Hostility Toward Women, Sexually Oriented Speech, Behavioral Scripting, Blunt Force, Bindings, Threats, Function of Force,

sportation, Protect I.D., Planning, and the Sensitive/Macho scales. These scales represented behavior of the rapist at the time of his first rape. This analysis was not significant, suggesting the behavior of the rapist at the time of his first rape cannot be used to ascertain the likelihood of the perpetrator living inside or outside the pattern formed by his subsequent rapes.

A similar type of analysis was conducted using the eight factor-analytically derived composite scores (i.e., Force, Relatedness, Deprecation, Scripting, Planning, Masculine stereotypes, Romance, and Seduction). These variables represented the composite score that identified the rapist's behavior at the time of his first rape. The model was marginally significant, $p = .09$. The two factors that were left in the model at the end of the analysis were the Romance and Seduction factors; these factors, however, simply helped to classify all the offenders as living inside the Convex Hull, a classification that is technically 75 percent correct but of no use in the differential prediction of this variable.

Finally, the Convex Hull polygon was examined in terms of the modal variables that describe the behavior of the rapist across the majority of his rapes (see Table 34). Eleven modal variables were entered into the analysis using step-wise entry. These included the offender's age, offender's race, clinical type, Increaser/Non-Increaser status, the use of restraints, the criminal history index, the presence of sadistic acts, whether the majority of the rapes occurred on the weekend or during the week, whether the majority of the rapes were indoors or outdoors, the rapist's attempts to protect his identity, and whether or not the rapist transported his victim. The model proved to be significant ($p < .05$); it explained 16 percent of the variance and resulted in 83 percent overall correct classification (25 percent correct classification for those living inside the Convex Hull and 98 percent correct classification for those living outside the Convex Hull). This

finding suggests that the model produces error in the direction of an over-prediction of rapists living outside the Convex Hull. As indicated in Table 34, four modal variables remained in the final model. These included whether the majority of rapes occurred indoors or outdoors (.51), the clinical type of the rapist (.37), whether or not the rapist transported the victim in the majority of the offenses (-.10), and whether or not there were sadistic acts in the majority of the rapes (-.34). Specifically, the model suggests that rapists who live inside the Convex Hull tend to fall within the Power categories of rape (as opposed to the Anger categories), tend to rape indoors rather than outdoors, and to more often engage in anal sex and/or foreign object penetration. This is an anomalous finding. Power rapists generally do not manifest sadistic sexual acts, suggesting that there are likely a few non-power outliers that are influencing this finding.

An alternative explanation for the differences reported above might be that they are an artifact of the number of rapes perpetrated by the two groups of offenders (i.e., ICH and OCH): the more rapes there are, the more likely it is that the residence would fall within the Polygon. This possibility was tested both for the Polygon and the Canter Circle (see following section). Mean number of rapes per case was compared for cases with the residence within and without the Polygon, and within and without the Canter Circle. In both situations, the t-value was not significant ($df=74$, $t=1.0$ and $-.27$, respectively).

E. CANTER CIRCLE MODEL

Another model used to assess the location of a rapist's residence in relation to his crimes is the Canter Circle discussed on page 47. As indicated, the Canter Circle represents a circle with a diameter drawn between the two rapes farthest from each other in a series of rapes perpetrated by the same offender. The Canter Circle represents an area that is virtually always larger than the

TABLE 34

**DISCRIMINANT CLASSIFICATION OF INSIDE/OUTSIDE THE CONVEX HULL
POLYGON BY MODAL VARIABLES ACROSS RAPES BY THE SAME OFFENDER**

| CRIME SCENE MODAL VARIABLES | STRUCTURE COEFFICIENTS |
|--|-----------------------------------|
| Clinical Type | .37 |
| Indoors/Outdoors | .51 |
| Sadistic Acts | -.34 |
| Transport Victim | -.10 |

Function I, $p = .05$; variance explained = 16 percent
Correct classification = 83 percent

Convex Hull Polygon discussed above, and therefore represents an area that is more unwieldy in terms of investigation. Alternatively, the Canter Circle allows for more correct classification in terms of the behavioral scales, factors, and modal variables discussed above, and suggests that this might be of value in the investigation of individual cases.

As indicated in Table 17, 39 (51 percent) of the serial rapists lived inside the Canter Circle (Marauders) and 37 (49 percent) lived outside the Canter Circle (Commuters). These findings are substantially different from those reported by Canter and Larkin (1993) who found that the clear majority (87 percent) of their sample of 45 serial rapists lived inside the Canter Circle. This difference in findings is of interest in that it suggests cultural or geographical differences across countries, despite what is considered a fairly common cultural tradition. It is possible that these differences derive from a different geographical structuring of cities in the United States and England and/or differential access to vehicles.

As with the Convex Hull polygon, efforts were made to classify the Marauders and the Commuters using the crime scene variables, the factor-analytically derived composite scores, and modal variables that described the rapist's behavior over the majority of his crimes. (See Table 1) The behavioral scales and the factor-analytically derived composite scores quantify behavior manifested by the rapist during his first rape.

In the first discriminant analysis, 26 of the original and revised behavioral scales were entered into the discriminant analysis using step-wise entry; nine of the scales remained in the final model. The model was significant ($p < .05$); it explained 30 percent of the variance and resulted in an overall correct classification rate of 75 percent (71 percent of the Marauders and 78 percent of Commuters). As indicated in Table 35, the nine scales that remained in the model included the

TABLE 35

**STRUCTURE COEFFICIENTS FOR DISCRIMINANT ANALYSIS CLASSIFYING
COMMUTERS AND MARAUDERS USING BEHAVIORAL SCALES,
FACTOR-ANALYTICALLY DERIVED COMPOSITE SCORES AND MODAL
VARIABLES**

| BEHAVIORAL SCALES AT FIRST RAPE* | STRUCTURE COEFFICIENT |
|---|----------------------------------|
| Personal Information About Self | -.36 |
| Efforts Not to Harm | .36 |
| Complimentary/Demeaning to Victim | .32 |
| Behavioral Scripting | .27 |
| Protect I.D. | -.21 |
| Victim Selection | -.11 |
| Bindings | -.08 |
| Planning | .10 |
| Impulsive/Planning | .05 |
| FACTOR-ANALYTIC COMPOSITE SCORES** | |
| Masculine Stereotypes | -.57 |
| Romance | .56 |
| Deprecation | .56 |
| Relatedness | .05 |
| MODAL VARIABLES*** | |
| Convex Hull | -.50 |
| Race | .24 |
| Sexual Dysfunction | .21 |
| Clinical Type | -.17 |
| Use of Substances | -.12 |
| Presence of Gun | .11 |
| Sadistic Acts | .04 |
| Victim Age | .17 |
| Transportation | .02 |
| Indoor/outdoor | -.03 |

* Function I, $p < .05$; variance explained = 35 percent.

Correct classification = 75 percent.

** Function I, $p < .01$; variance explained = 18 percent.

Correct classification = 64 percent.

***Function I, $p < .001$; variance explained = 56 percent.

Correct classification = 86 percent.

sonal Information About Self Scale (-.36), the Efforts Not to Harm Scale (.36), the Complimentary/Demeaning Scale (.32), the Behavioral Scripting Scale (.27), the Protect I.D. Scale (-.21), the Victim Selection Scale (-.11), the Binding Scale (-.08), and the Planning Scale (.05) and Impulsive/Planning Scale (.05). These results suggest that Marauders tend not to reveal personal information about themselves to their victim, tend to make more efforts not to harm their victims, and tend to be more demeaning toward their victim. Alternatively, the Commuters tend to convey more personal information about themselves to their victim, tend to take a slightly less demeaning stance toward their victims, and generally do not make any effort to protect their victims from harm.

Similar findings were obtained when the same analysis was run using the composite factor scores discussed on page 171. This analysis was also run step-wise using all eight composite scores; four remained in the model at the end of the analysis. The resultant model was significant (.01); it explained 18 percent of the variance and classified with an overall accuracy rate of 64 percent (69 percent of the Marauders and 58 percent of the Commuters). These results are clearly more disappointing both in terms of the behavioral scales reported above and the modal variables reported below. Nonetheless, the results indicate that the two groups can be classified using four of the composite factor variables: Masculine Stereotypes (-.57), Romance (.56), Deprecation (.5), and Relatedness (.05). Specifically, the Marauders tended to manifest a more stereotypical use of "macho" behavior (i.e., hostility, demands, threats, sexually-oriented speech, humiliation, oral fellatio), less deprecation of themselves and others (personal information, excuses, self-deprecation, generalized hostility, and apologetic speech), and less self-promotion and complimentary speech. In contrast, the Commuters tend to convey less "macho" behavior, more

relatedness and interaction with the victim, and more deprecation and hostility.

Finally, the same analyses were run using the composite variables that describe either the rapist or his behavior over the majority of his crimes. Twenty-two of the modal variables were entered into the analysis: clinical type, criminal history index, the use of restraints, a preponderance of indoor/outdoor rapes, race of the offender, the presence of ritual, offender age, efforts to protect identity, sexual dysfunction, transportation of the victim, sadistic acts, burglary, the use of a gun, the use of a knife, the presence of a weapon, mean victim age, youngest victim age, oldest victim age, age range, use of substances, mean duration of rapes, and position in regard to the Convex Hull Polygon. The analysis resulted in a significant model ($p < .001$); it explained 56 percent of the variance and resulted in an overall correct classification of 86 percent (83 percent of the Marauders and 89 percent of the Commuters). The 10 variables that remained in the final model included the Convex Hull polygon (-.50), race of the offender (.24), the presence of sexual dysfunction (.21), clinical type (-.17), the use of substances (-.12), the use of a gun (.11), the presence of sadistic acts (.35), mean victim age (.17), offender age (.08), the presence of a weapon (-.09), transportation of the victim (-.02), and the indoor/outdoor nature of the majority of the rapes (-.03). This analysis demonstrates the partial tautology inherent in our models. The high negative structure coefficient for the Convex Hull Polygon reflects the fact that all Commuters, living outside the Canter Circle, also live outside the Convex Hull Polygon. Marauders, on the other hand, all of whom live inside the circle, are distributed so that some reside inside the Convex Hull Polygon and some do not. In fact, in 21 cases the residence lies outside the Convex Hull polygon but inside the Canter Circle. This distinction, which lies halfway between both constructs, might itself be worthy of further study (i.e., examine differences

ween rapists who live inside the Convex Hull Polygon, outside the Convex Hull Polygon but de the Canter Circle, and outside the Canter Circle).

Making the "simplifying assumption" that the home is at the center of the circle, Canter and Larkin proposed that crimes committed farther from home will be farther from each other than crimes committed closer to home. In an indirect test of their hypothesis, Canter and Larkin regressed maximum distance between offenses (the diameter of the Canter Circle) on maximum distance from home. They found a significant R^2 of .86 ($r=.93$) and a slope of .84. They stated that the slope of .84 indicates that while the home is within the circle, it is not at the center of the offenses, since in that case the slope would be .5.

Attempts to replicate these findings were made with the present data for cases in which there were four or more rapes and in which distance of the farthest rape was less than 100 miles. For cases with the residence within the Canter Circle, the slope was .84 and R^2 was .99, with $p<.01$, and the average distance to the closest rape was .89 miles. When the same regressions were done on cases with residence outside the Canter Circle ($p<.01$), the slope was 2.56 and R^2 was .23, with $p<.01$. These results for Marauders replicate the Canter and Larkin findings with the same beta of .84. The results for the Commuters with a beta of 2.56 also validates their tested hypothesis that Commuters would have a slope line of greater than 1.

GEOGRAPHICAL MODELS COMBINING AVERAGE DISTANCE

TRAVELLED AND INSIDE/OUTSIDE THE CONVEX HULL POLYGON

The geographical analyses also included an examination of four geographical models created by combining the two geographical variables discussed above (i.e., distance and the relationship of the residence to the rapes perpetrated by each offender). This combination

resulted in four models: 1) short average distance/inside Convex Hull Polygon (n=10); 2) long average distance/inside Convex Hull Polygon (n=8); 3) short average distance/outside Convex Hull Polygon (n=28); 4) long average distance/outside Convex Hull Polygon (n=30). (See Table 36.) These models were first examined in terms of the composite factor scores that represented the rapist's behavior during his first rape. The overall Manova for the factors was not significant, but demonstrated a trend ($p < .09$) that suggested that certain of the factors, Planning, Masculine Stereotypes, and Seduction, seemed to differentiate among the four groups. Not surprisingly, this trend suggests that those who travel farther and live outside the polygon created by their offense pattern demonstrate more preparation in their offenses (i.e., bindings, material for bindings, and protection of identity). The behaviors subsumed under the Masculine Stereotype factor (i.e., hostility toward women, demands, threats, sexually-oriented speech, macho behavior, humiliation of the victim, and fellatio) occurred with the highest frequency among Model 2 offenders, who travelled farther on average but lived nonetheless within the polygon created by their offenses. The Seduction factor (i.e., kissing on the mouth, nuzzling, subtraction of use of foreign object) was similarly highest among the Model 2 offenders. In contrast, the lowest value for the Seduction variable occurred among Model 4 offenders, who lived outside of and far from the pattern created by their offenses.

G. FIRST/LAST RAPE CLOSEST TO HOME

One last aspect of serial rapists' patterns of rape that was examined involved whether the first or last rape was closest or farthest from the offender's residence. This query emanated from certain investigative premises which suggest that the first crime in a series of crimes is most likely to be the closest to the perpetrator's residence. Alternatively, observations regarding the

EFFECTS OF GEOGRAPHICAL VARIABLES ON FACTOR SCORES AT FIRST RAPE

| FACTOR | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (N=76) | POLYGON (p) | DISTANCE (p) | POL. x DIST. |
|--------------------|-------------------|------------------|-------------------|-------------------|-------------------------|----------------|-----------------|--------------|
| FORCE | | | | | | | | |
| Mean | 7.90 | 11.13 | 9.75 | 7.90 | 8.92 | .67 | .50 | .03 |
| S.D. | (3.11) | (5.59) | (4.81) | (3.44) | (4.21) | | | |
| RELATEDNESS | | | | | | | | |
| Mean | 9.00 | 8.00 | 9.04 | 9.31 | 9.03 | .32 | .96 | .31 |
| S.D. | (3.09) | (1.60) | (2.44) | (2.00) | (2.30) | | | |
| DEPRECATON | | | | | | | | |
| Mean | 6.70 | 6.63 | 6.68 | 6.70 | 6.68 | .95 | .99 | .89 |
| S.D. | (1.34) | (0.92) | (1.31) | (1.24) | (1.25) | | | |
| SCRIPTING | | | | | | | | |
| Mean | 6.20 | 7.13 | 6.57 | 6.77 | 6.66 | .95 | .39 | .47 |
| S.D. | (0.63) | (1.25) | (2.25) | (1.78) | (1.84) | | | |
| PLANNING | | | | | | | | |
| Mean | 10.90 | 12.63 | 11.39 | 13.73 | 12.38 | .47 | .02 | .78 |
| S.D. | (3.04) | (3.78) | (4.06) | (4.18) | (3.97) | | | |

TABLE 36 (cont'd)

EFFECTS OF GEOGRAPHICAL VARIABLES ON FACTOR SCORES AT FIRST RAPE

| FACTOR | MODEL 1 (n=10) | MODEL 2 (n=8) | MODEL 3 (n=28) | MODEL 4 (n=30) | GRAND MEAN (N=76) | POLYGON (p) | DISTANCE (p) | POL. x DIST. (p) |
|-----------------------------|-------------------|------------------|-------------------|-------------------|-------------------------|----------------|-----------------|---------------------|
| MASCULINE STEREOTYPE | | | | | | | | |
| Mean | 10.40 | 14.00 | 12.82 | 11.93 | 12.28 | .67 | .80 | .01 |
| S.D. | (3.17) | (3.78) | (3.30) | (2.52) | (3.05) | | | |
| ROMANCE | | | | | | | | |
| Mean | 6.20 | 6.38 | 6.93 | 7.34 | 6.93 | .10 | .40 | .81 |
| S.D. | (0.63) | (0.74) | (2.26) | (1.86) | (1.85) | | | |
| SEDUCTION | | | | | | | | |
| Mean | 2.00 | 3.50 | 2.50 | 1.87 | 2.29 | .15 | .64 | .002 |
| S.D. | (0.00) | (1.41) | (1.69) | (0.73) | (1.22) | | | |

Note: Model 1 = rapist residence inside polygon, rapes close to home
 Model 2 = rapist residence inside polygon, rapes far from home
 Model 3 = rapist residence outside polygon, rapes close to home
 Model 4 = rapist residence outside polygon, rapes far from home

nder's tendency to backtrack suggest that it might be one of the later crimes that would be
est to the perpetrators home. In order to examine both of these possibilities, all of the cases
a five or more rapes were examined to see if either the first or fifth rape was closest to the
nder's residence. The fifth rape was chosen as the terminal rape because it represented the
dal number of rapes; it was used to limit variability due to the different number of rapes
petrated by the rapists in the current sample ($n = 2$ to 17). In 14 instances (18 percent) the first
e was closest to the residence (Group I) and in 18 instances (24 percent) the fifth rape was
est to the residence (Group II). As this is an important pattern for investigators and profilers,
effort was subsequently made to classify these two groups using the crime scene behavioral
les, the factor composite scores, and the modal variables.

The discriminant analysis using the 26 behavioral scales is summarized in Table 37. As
cated, the analysis, which was run using step-wise entry, resulted in a significant model
.01); it explained 43 percent of the variance and resulted in an overall correct classification
of 84 percent (71 percent of Group I and 94 percent of Group II). The scales that remained
n the final model included the Protection of I.D. Scale (-.57), the Planning Scale (.15), the
ding Scale(-.34), the Sensitivity Scale (.07), and the Threat Scale (.26). These results suggest
those rapists whose first rape is closest to home tend to make a greater effort to protect their
ntity, are more likely to use bindings, and possibly are less threatening in their behavior. In
trast, those whose fifth rape is closest to home tend to make less effort to protect their identity
are less likely to use bindings. The latter may represent a practice effect and greater
fidence in controlling the victim.

The discriminant analysis using the eight composite factor scores was also run using step-

TABLE 37

**STRUCTURE COEFFICIENTS FOR DISCRIMINANT ANALYSIS CLASSIFYING RAPE
CLOSEST TO RAPIST'S RESIDENCE USING BEHAVIORAL SCALES, FACTOR
COMPOSITE SCORES AND MODAL VARIABLES**

| BEHAVIORAL* SCORES | STRUCTURE COEFFICIENTS |
|-------------------------------|-----------------------------------|
| Protect I.D. | -.57 |
| Planning | .15 |
| Binding | -.34 |
| Sensitivity | .06 |
| Threat | .26 |

FACTOR COMPOSITE SCORES**

| | |
|-------------|------|
| Planning | .48 |
| Relatedness | -.35 |
| Force | .10 |
| Scripting | -.19 |

MODAL VARIABLES***

| | |
|------------------------|------|
| Restraints | .68 |
| Criminal History Index | -.33 |

*Function I, $p < .008$; variance explained = 43 percent.
Correct classification = 84 percent.

**Function I, $p < .04$; variance explained = 31 percent.
Correct classification = 75 percent.

***Function I, $p < .04$; variance explained = 25 percent.
Correct classification = 100 percent.

e entry. It resulted in a significant model ($p < .05$) that explained 43 percent of the variance and yielded in an overall correct classification rate of 75 percent (64 percent of Group I and 83 percent of Group II). The factor scores that remained in the model included Planning (.48), Relatedness (-.35), Force (.10), and Scripting (-.19). These results suggest that those rapists whose first rape is closest to home tend to be less interactive and related to their victims but demonstrate more planning in their offenses.

Finally, this same type of analysis was run using the modal variables discussed above. This discriminant analysis (also run using step-wise entry) resulted in a significant model ($p < .05$); it explained 25 percent of the variance and resulted in an overall correct classification rate of 69 percent (39 percent of Group I and 100 percent correct classification of Group II). Interestingly, the two factors left in the model were Restraints (.68) and the criminal history index (-.33). These findings suggest, once again, that rapists who first rape close to home tend to use restraints, while those who rape closer to home near the end of their rape careers tend to have higher scores on the criminal history index (for a full explanation of the index, see page 43.) This finding may suggest that backtracking is a phenomenon found more frequently among those who have fairly extensive criminal careers.

It is interesting to note that restraints turn out to be important in two out of three of these analyses, suggesting that, at least in the current data set, the use of restraints and having the first rape closest to home seem to be highly correlated. Thirty-six percent of Group I used bindings while only 6 percent of Group II used bindings ($p = .043$). The mean score on the binding and restraint measures remain low, however, suggesting that in the instances in which the perpetrator and the victim, he did not do so in a highly ritualized manner. There are no associated

differences in the age, race, clinical type, Increase status, or indoor/outdoor nature of these offenses, suggesting that this represents a difference in modus operandi that apparently stands outside of these more obvious factors.

CHAPTER VII

CONTINUITY AND CHANGE

One of the questions integral to this study of serial rape lay in whether, to what extent, and on what variables the behavior of a serial rapist stays the same and/or changes over the course of his rape career. Some theories of rape behavior have posited the existence of personality characteristics that help to determine the motivation for rape; they imply that the personality of the offender is unchanging, and that his offense behavior therefore remains consistent (Prentky, Knight, and Rosenberg, 1988). In contrast, research that focuses on victim resistance during a rape (Ullman and Knight, 1991; Ullman and Knight, 1992; Ullman and Knight, 1993; Quinsey and Upfold, 1985) suggests that the behavior of the victim has much to do with the offense behavior of the rapist. Finally, as outlined in Chapter I, profiling literature asserts that certain of the rapist's behaviors (i.e., the modus operandi that evolves with increased experience) change, while others (i.e., the sexual ritual embedded in the offense) do not. In order to explore these assumptions empirically, consistency on the individual variables was examined, and then repeated measures were performed on the behavioral scales to see if there was consistent change in these behaviors over time.

A. CORRELATIONAL CONSISTENCY

As part of his search for crime scene taxonomic discriminators that could be used in bootstrapping the present data set onto the existent MTC:3 taxonomy (see Appendix D for a full discussion of these analyses), Knight examined the cross-temporal consistency for each offender on 119 variables. These variables, summarized in Table 38, were chosen because they were

TABLE 38

**DEGREE OF CROSS-TEMPORAL CONSISTENCY
FOR RAPISTS ON CRIME SCENE VARIABLES**

| RIABLE | VALUE | CATEGORY |
|---|--------------|-----------------|
| No Consistency | | |
| Blunt Force (3,4,5) | 0 | None |
| Offender Bites Victim (2) | 0 | None |
| Blunt Instrument Brought to Scene | 0 | None |
| Blunt Instrument Used | 0 | None |
| E.A. Initial Approach Overpowering | 0 | None |
| E.A. Offender Biting | 0 | None |
| E.A. Demeaning About Victim | 0 | None |
| E.A. Sexual Acts--Biting | 0 | None |
| E.A. Excessive Response to Resistance | 0 | None |
| Displays Fetishes (2) | 0 | None |
| Function of Force Used by Offender (2,3,4,5) | 0 | None |
| Household Appliance Brought to Scene | 0 | None |
| Household Appliance Used | 0 | None |
| Ligature Brought to Scene | 0 | None |
| Ligature Used | 0 | None |
| Offender Biting (2) | 0 | None |
| Restraints: Handcuffs | 0 | None |
| Screwdriver Brought | 0 | None |
| Screwdriver Used | 0 | None |
| Sexual Dysfunction: Premature Ejaculation | 0 | None |
| S.X. Sexual Fetishes | 0 | None |
| Victim Injury Resulting from Blunt Force | 0 | None |
| V.N. No Premature Ejaculation | 0 | None |
| Weapon Brought | 0 | None |
| Very Low Consistency | | |
| Anal Sex (2,3,4,5) | 1 | Very Low |
| A.U. Macho Behavior | 1 | Very Low |
| Complimentary Toward Victim (3,4,5) | 1 | Very Low |
| E.A. Victim Injury | 1 | Very Low |
| E.A. Force Expresses Rage | 1 | Very Low |
| E.A. Victim Physical Resistance | 1 | Very Low |
| E.A. Victim Injury Other than by Blunt Weapon | 1 | Very Low |

TABLE 38 (cont'd)

2. Very Low Consistency (cont'd)

| | | |
|---|---|----------|
| Excessive Profanity (?) | 1 | Very Low |
| Anal Penetration with Inanimate Object (2) | 1 | Very Low |
| Vaginal Penetration with Inanimate Object (2) | 1 | Very Low |
| P.A. Hostility in General (?) | 1 | Very Low |
| Physical Resistance (2,3,4,5) | 1 | Very Low |
| Rifle/Shotgun Brought to Scene | 1 | Very Low |
| Rifle/Shotgun Used | 1 | Very Low |
| Evidence of Sexual Ritual (2?) | 1 | Very Low |
| RL.V. Complimentary | 1 | Very Low |
| S.D. Anal Sex | 1 | Very Low |
| Sexual Dysfunction: Retarded Ejaculation | 1 | Very Low |
| S.X. Sexual Ritual | 1 | Very Low |
| V.N. Retarded Ejaculation | 1 | Very Low |

3. Low Consistency

| | | |
|---|---|-----|
| Apologetic (3,4,5) | 2 | Low |
| A.U. Sensitive-Macho | 2 | Low |
| Victim Injury (3,4,5) | 2 | Low |
| E.A. Blunt/Excessive Force | 2 | Low |
| E.A. Hostility toward Women | 2 | Low |
| E.A. Intended Injuries | 2 | Low |
| Enjoyment (2,3,4,5) | 2 | Low |
| Hostility in General (2,3,4,5) | 2 | Low |
| Macho Behavior of Rapist (5) | 2 | Low |
| Manner of Removing Victim's Clothing (3) | 2 | Low |
| *Anger Range (4,5) | 2 | Low |
| *Demeaning about Victim Range (4,5) | 2 | Low |
| *Injuries Range (4,5) | 2 | Low |
| Anal Intercourse with Penis (2) | 2 | Low |
| P.A. Overwhelming Anger | 2 | Low |
| RL.V. Reassures Victim | 2 | Low |
| RL.V. Sensitivity to Victim | 2 | Low |
| RL.V. Apologetic | 2 | Low |
| Sexual Dysfunction: Conditional Impotence | 2 | Low |
| SDSRBND | 2 | Low |
| Sensitivity to Victim (3,4,5) | 2 | Low |
| Sexually Oriented Comments (3,4,5?) | 2 | Low |
| S.X. Sexual Comments | 2 | Low |
| V.N. Impotence | 2 | Low |
| E.A. Weapon Use | 2 | Low |

TABLE 38 (cont'd)

Moderate Consistency

| | | |
|--|---|----------|
| A.U. Offender Drinking | 3 | Moderate |
| A.U. Offender Used Drugs | 3 | Moderate |
| Offender Had Been Drinking | 3 | Moderate |
| Offender Used Drugs | 3 | Moderate |
| E.A. Intentional Infliction of Pain | 3 | Moderate |
| Evidence Sexual Dysfunction (2) | 3 | Moderate |
| Foreign Object (2,3,4,5) | 3 | Moderate |
| Harming Victim "Turned Rapist On" (2) | 3 | Moderate |
| Hostility toward Women (2,3,4,5) | 3 | Moderate |
| Humiliation of Victim (2,3,4,5) | 3 | Moderate |
| Inquisitive (3,4,5) | 3 | Moderate |
| Sadistic Infliction of Pain (2,3,4,5) | 3 | Moderate |
| Knife/Cutting Used | 3 | Moderate |
| *Planning of Rape Range (1,2,3,4,5) | 3 | Moderate |
| *Sensitive-Macho Range (4,5) | 3 | Moderate |
| P.A. Excessive Use of Profanity | 3 | Moderate |
| Planning of Rape (1,2,3,4,5) | 3 | Moderate |
| P.L. Careful Victim Selection | 3 | Moderate |
| P.L. Extensive Planning | 3 | Moderate |
| P.L. Indication of Victim Selection | 3 | Moderate |
| Reassuring (3,4,5) | 3 | Moderate |
| RL.V. Inquisitive | 3 | Moderate |
| Rapist's Response to Victim Resistance | 3 | Moderate |
| S.D. Foreign Object in Sex | 3 | Moderate |
| S.D. Harm Arouses Offender | 3 | Moderate |
| S.D. Sadistic Infliction of Pain | 3 | Moderate |
| Sexual Dysfunction: Erectile Insufficiency | 3 | Moderate |
| Verbal Indication of Selection (2) | 3 | Moderate |
| S.X. Offender Enjoyment | 3 | Moderate |
| S.X./V.N. Sexual Dysfunction | 3 | Moderate |
| S.D. Offender Humiliates Victim | 3 | Moderate |
| V.N. Erectile Insufficiency | 3 | Moderate |

High Consistency

| | | |
|--------------------------|---|------|
| E.A. Cut/Slash Clothing | 4 | High |
| A.U. Gun Present | 4 | High |
| Handgun Brought to Scene | 4 | High |
| Handgun Used | 4 | High |
| Knife Brought to Scene | 4 | High |

TABLE 38 (cont'd)

5. High Consistency (cont'd)

| | | |
|-------------------------|---|------|
| *Victim Selection Range | 4 | High |
| P.L. Manner of Binding | 4 | High |
| P.L. Planning of Rape | 4 | High |
| Rope Restraints | 4 | High |
| Tape Restraints | 4 | High |

6. Very High Consistency

| | | |
|---------------------------------------|---|-----------|
| Approach (20-24) | 5 | Very High |
| Bindings | 5 | Very High |
| Binding Material (5) | 5 | Very High |
| P.L. Nature of Binding Material | 5 | Very High |
| P.L. How Restraints Obtained | 5 | Very High |
| No Restraints Used (1=Res Used) | 5 | Very High |
| How Restraints Obtained (3,4) | 5 | Very High |
| S.D. Victim Bound | 5 | Very High |
| S.D. Excessive Response to Resistance | 5 | Very High |

*=Modified Scale Range Variable

A.U.=Adult Unsocialized

E.A.=Expressive Aggression

P.A.=Pervasive Anger

P.L.=Planning

R.L.=Relationship with Victim

S.D.=Sadistic

S.X.=Sexualization

V.N.=Vindictiveness

orted with enough frequency to warrant further study and also showed some conceptual
mise in terms of linking the crime-scene behavior quantified in the current data set to the
ssificatory dimensions intrinsic to the MTC:3 taxonomy.

The consistency analysis focused on the first five rapes perpetrated by each offender, as
s represented the modal number of rapes in the current data set. The degree of consistency was
essed by creating a cross-crime correlation matrix for each of the variables. Each of the ten
relations that resulted from this type of analysis was subsequently summarized into a single
ttman-like value: zero equalled no consistency, three equalled moderate degrees of
isistency, and five equalled very high degrees of consistency.

The results summarized in Table 38 prove to be of interest in terms both of the
isistency and of the change that is indicated. As summarized above, 69 (58 percent) of the
iables that were created reflected zero or minimal consistency across the rapes perpetrated by
same offender, while 51 (42 percent) of the variables reflected moderate to high consistency
oss these same rapes. The first category included many variables that reflected rather extreme
es of behaviors (i.e., high levels of blunt force, anal sex, high levels of anger and hostility, the
gree of victim injury, and certain of the sexual dysfunctions). Also included in this low-
isistency category were certain aspects of the modus operandi (i.e., the bringing of a weapon,
use of ligatures, the offender's response to victim injury, and the function of the force used) as
ll as certain characteristics of the rapist's verbal and attitudinal interaction with the victim (i.e.,
nplimentary toward victim, demeaning about victim, excessive profanity, macho behavior,
oyment, reassurance, apologetic, or sexually-oriented comments). The variables with moderate
igh consistency included the offender's use of alcohol and drugs, components of a sexually

sadistic arousal pattern (i.e., intentional infliction of pain, hostility, humiliation, being "turned on" by the victim's pain, and sadistic infliction of pain), the degree of planning manifested by the rape, the nature and procurement of bindings, and specificity of the victim selection demonstrated. There are a number of possible explanations for these differences. These results may simply reflect the constant and variable aspects of rapes perpetrated by the same offender. It may be that aspects of the rapist's interaction with different victims change while motivational themes (e.g. sadism) and aspects of his modus operandi (i.e., victim selection, planning, bindings, and the bringing of a gun to the scene of the crime) do not. On the other hand, these results may reflect different degrees of specificity in the variables coded. Obviously, the procurement of bindings is a more specific act than the manifestation of an apologetic attitude toward the victim. The inconsistency observed on many of the attitudinal scales might therefore reflect difficulty in gauging these behaviors from the review of a victim statement. Finally, it may be that more "normal" aspects of rape tend to change as do "normal" aspects of non-criminal interaction, while the more unusual and pathological aspects of behavior are, by nature, more repetitious.

B. REPEATED MEASURES ANALYSES

The correlational analyses explored consistency within each variable without addressing the issue of trends (i.e., Increasers/Non-Increasers) across time within each of these crime scene variables. Repeated measures analyses were therefore conducted using each of the behavioral scales across the first five rapes of offenders in order to test for the presence of directional change in mean scores. The analysis was conducted at the level of clinical type, with rapists nested within the three clinical types.

These analyses revealed no significant systematic change in rapist behavior across the first

rapes for scales related to force or sexual behavior. Only one verbal behavior, making uses, showed significant change across time ($p < .0063$). However, three behaviors related to *modus operandi* showed significant change over time: preparation ($p < .02$), protection of identity ($p < .02$), and binding materials ($p < .02$). The largest change in the three scales ("planning" was not a scale but a composite score) was for binding materials, which increased by 0.39, from 1.44 to 1.83. The smallest was for protection of identity, which increased by .22, from 1.90 to 2.12. On the average, these changes over time did not reflect gross changes in rapist behavior.

These findings offer some empirical support to the observations by Douglas and Munn (1992) regarding the evolution of a rapist's *modus operandi* over time (see page 9). As indicated, however, this may be true only of certain types of rapists, such as the Anger Retaliatory rapist. This finding, paired with the consistency and lack of systematic change on the sexually sadistic component of a rape, might also constitute preliminary empirical support for their assertion that the sexual ritual component of rape remains consistent, and therefore constitutes a more reliable basis for trying to link offenses perpetrated by the same offender.

McCleary, in his temporal analysis (Appendix C), sought to explore the relationship between the crime scene behavior of the rapist and the time to the next rape. He found, "The extensive analysis of the variance in waiting times across the j th offender's career found not one variable that could predict, to a criterion of nominal statistical significance, the time to next rape" (1982: 32). In reporting this finding, McCleary cautions against interpreting this finding to suggest that the time distribution is random, noting that the combined sample of rapists was quantitatively and qualitatively insufficient to produce positive multiple equation hierarchical models, and he recommended that data collection until the career sample is more adequate.

CHAPTER VIII

DISCUSSION AND DIRECTIONS FOR FURTHER RESEARCH

The analysis of these data according to a number of conceptual themes has highlighted the multidimensional nature of rape and the complex empirical, theoretical, and analytic dilemmas that occur in the study of serial crime perpetrated by a large number of repeat offenders. The size of the data set has often proven unwieldy, the creation and operationalization of diverse classificatory themes complex and demanding, and the thrust of integrating ideas and methodologies from diverse disciplines, such as cognitive geography, environmental psychology, criminal investigative analysis, criminology, and psychiatry, simultaneously challenging and frustrating.

It would seem, however, that this type of exploratory study has isolated certain patterns and themes that help substantially to broaden our understanding of serial rape. One pattern that lies at the core of the current project involves the geography of the rapes themselves; it appears to relate both to characteristics of the offender and to characteristics of his offenses. The data clearly suggest that the rapist's geographical decisions, in terms of the distance travelled and the clustering of the offenses in relation to places of psychological significance, vary systematically with certain of his demographic characteristics, with certain observable aspects of the modus operandi, and with other aspects of the crime-scene behavior manifest within the crime itself. The cognitive decision-making that determines the patterning of offenses has been likened to a geographical fingerprint, which is intrinsic to but often overlooked in the offense behavior of serial offenders.

The current study has focused on two dimensions of cognitive geography: the distances

travelled by the rapist and the patterning of his offenses in relation to other places of significance to him. As summarized in Table 32, the distance travelled by the serial rapists in the current study was influenced by the race of the offender (white offenders travelled farther than minority offenders), by the presence or absence of ritualized behavior in the majority of offenses (rapists who manifested ritualized behavior travelled farther), by the use of restraints (rapists who used restraints in the majority of their offenses travelled farther), by the bringing of restraints to the scene of the crime (rapists who brought restraints to the scene of their crimes travelled less distance than rapists who obtained restraints at the scenes of their crimes), by the timing of the rape in terms of the time of day (rapists who raped during the daytime had larger "close" distances than those who raped at night) and possibly in terms of the day of the week (there was a trend in which rapists who raped during the week travelled less distance to rape than rapists who raped predominantly on the weekends), and by the presence of forced entry and the burglarizing of the rape victim (those rapists who used forced entry and/or burglarized their victim tended to travel farther and had more property offenses in their criminal histories). The clustering of offenses (i.e., whether the rapist lived inside or outside the Convex Hull Polygon) was related to the clinical type of the rapist (Power rapists tend to live inside the Convex Hull Polygon), to whether the rapist predominantly raped indoors or outdoors (indoor rapists more often live inside the Convex Hull Polygon), and to whether there were sadistic acts in the majority of the offenses (rapists who engaged in sadistic acts more often lived inside the Convex Hull Polygon).

The results also suggest that more precision is obtained when both of these measures, distance travelled and clustering of offenses, are used simultaneously in exploring these patterns. As indicated in Table 15, there were more significant differences on the first rape when the cluster

was described using models that combined distance measures with cluster variables than there were when the Convex Hull Polygon was used alone. A third geographic measure, directionality, was not examined in the current study. Directionality, as explored by LeBeau (1985; 1987) and Rengert and Wasilchick (1990) was only meaningful in the context of the characteristics of a region or city and therefore is not discernible on the "mapless maps" used in the current study. It is the impression of the authors, however, that the combination of all three geographic measures (i.e., distance, clustering, and directionality) will produce the models with the most explanatory potential for subsequent use in the investigation of serial crime. In order to explore these three dimensions simultaneously, the findings from the present study will need to be integrated with information specific to the cities and regions represented in it. For example, in a series of rapes perpetrated by an Anger rapist who uses bindings and who rapes within an area of 22 miles, is the direction of movement more likely to occur in the direction of the central business district of the particular city or in the direction of neighborhoods with particular demographic characteristics? This type of exploration would allow for the creation of models that integrate the offender-determined factors explored in the current study with the situation-specific characteristics of each individual area or region. Results thus far have confirmed that serial rapists do not manifest random patterns when geographically choreographing their offenses. Therefore, the development of models that capture a significant amount of this patterning (which is likely both consciously and unconsciously experienced by the individual) is clearly possible, particularly within each individual area or region.

The current study has also demonstrated that the behavioral scales developed by Warren et al. (1991) to describe the crime-scene behavior of a rapist can be useful in ascertaining the type

he offender, using both the Groth typology and, quite possibly, a crime-scene version of the MC:3 paradigm. Data from three independent samples have now provided support for the validity of the typological scales used to make assignments in Groth's system. This fact seems to confirm that behavioral scales can be used to make the same discriminations as classifications based on motivational type, a finding that may constitute the first step in replacing motivational types with a series or continuum. Further, these scales "focus on the interaction occurring between the rapist and his victim, rather than on either of the individuals independently, and seek to quantify behavior rather than the complexities of motivation and meaning lying behind the behavior" (Warren et al., 1991, pp. 63-64). As such, they are more easily used by investigators who do not have full training as criminal investigative analysts.

Certain limitations in the typing of rape behavior also became apparent during the course of the study. The scales were useful in summarizing large amounts of interactional behavior and vividly captured the "flavor" of the particular offense. This classification could then be collapsed into a single clinical type that best described the overall rape behavior of each offender. However, these overall behavioral types did not prove to be particularly useful in predicting offender-specific behaviors, such as the type of criminal history the offender might have, the distance he might travel, and the location of his offenses in relation to his residence. Rather, it was particular behaviors which seemed most useful in determining these characteristics of the offender (i.e., those who used forced entry tended to travel farther to rape and those who travelled farther tended to have criminal histories that contained more property offenses). These type of relationships were much stronger at the lower level of inference. Therefore, further study into the relationship between crime behavior and the characteristics of the offender should likely focus on

these individual behaviors or on the factor composite scores that organize these scaled behaviors into eight behavioral dimensions (i.e., Force, Relatedness, Deprecation, Scripting, Planning, Masculine Stereotypes, Romance, and Seduction) rather than on types per se. This suggestion is not meant to imply, however, that simple linear analysis that by-passes motivational themes will ever result in the comprehensive description of a particular offender. It is hoped that these kinds of probabilistic occurrences will simply more accurately inform investigators in their attempts to understand an individual series of crimes. As suggested by Pinizzotto and Finkel (1990), the accuracy of the multilevel process of profiling is best enhanced by the development of base rates derived from the detailed study of a large number of similar crimes.

In hindsight, it would also seem that many of the scales could have been designed in such a way so as to simultaneously retain their interpretive and empirical integrity. For example, the Protect I. D. Scale could have been composed of a number of questions about the methods utilized (i.e., did the offender wear a mask?), which could have subsequently been collapsed into a scaled value. This would have allowed for the retention of both types of data (i.e., the types of methods used and the extent of the effort), both of which might have been of value in the data analysis. By going directly to the scaled value, some of the qualitative detail was lost. This is not, however, to suggest that the simple counting of behaviors is being recommended. As discussed on page 56, it was clear that a simple counting of behaviors (e.g., the number of demeaning statements reported by the victim) would have lost the flavor of the interaction that also proved of value in the analysis. Therefore, it would seem that individual behaviors should be captured wherever possible, but also that the overall quality conveyed by these behaviors should be assessed. For example, one question might involve recording each thing that the rapist said to the

im and then assigning a scaled value to the overall sense of hostility reflected in these elements. In this way, the study would retain both the interpretive assessment and the precise aviators that may be of independent value in subsequent empirical analysis.

The inverse of this process was used by Knight in his exploration of a crime-scene version of the MTC:3 paradigm of rape type. In seeking discriminating variables that could be used to bootstrap the crime-scene behavior contained in the current data base onto the offender-based MTC:3 system, he took proportions of the scales and created more distinctive variables. For example, high scores on the victim resistance scale might become an independent variable for this purpose. It was encouraging to see that five of the seven dimensions used to classify rapists in the MTC:3 system could be reproduced to some degree using crime-scene information obtained in the current project. Because there is less detailed crime-scene information in the MTC:3 data base, the proper cut-off points for deriving the MTC:3 types could not be ascertained without further coding of the MTC:3 dataset. The preliminary results, however, are very encouraging in terms of creating a crime-scene version of the MTC:3 paradigm. It seems highly advantageous to pursue this kind of classificatory transposition, as it potentially synthesizes years of empirical research into offender classification with the investigative needs of law enforcement. As noted above, the Groth rapist type was also not particularly useful in determining certain filing questions (e.g., the nature of the offender's past criminal history). It is more likely that dimensions of behavior captured in the MTC:3 system will be more useful in this regard. In addition, recent research has shown that the recidivism of a rapist is highly correlated with his score on the impulsivity dimension of the paradigm (Prentky et al., 1995). One might expect that a similar type of relationship will be discovered between impulsivity and the offender's past criminal

history, and possibly the mean distance he travels to rape as well. This type of exploration will require further development of the MTC:3 crime-scene paradigm so that it can be applied systematically to the current data set.

Another central aspect of the current analysis was the replication and extension of the concept of rapists as being Increasers or Non-Increasers. In previous research, Hazelwood et al. (1989) and Warren et al. (1991) had found a number of attributes apparently correlated with the increasing use of violence across a series of rapes by some rapists, termed Increasers. However, an analysis attempting to replicate the findings from the 1991 study as exactly as possible was not significant.

In the previous research, increase in violence was defined very simply as a series of rapes in which more violence was used in the last rape than in the first. In the present study, a measure using more of the information in the data was devised to define the increase in violence: the violence score was regressed on the rape sequence numbers. If the slope was positive, the rapist was classified as an Increaser (in violence). Using this revised definition of Increaser/Non-Increaser status, two discriminant models proved to be significant. (See Table 28.) The first model, which used the behavioral scales that quantified the rapist's behavior at the time of the first rape, resulted in a significant model ($p=.001$) that explained 18 percent of the variance and resulted in correct overall classification of 79 percent. (Regrettably, there was a large discrepancy: the Non-Increasers were classified with 93 percent accuracy, but the Increasers were classified with an accuracy of only 37 percent.) The model suggested that those rapists who demonstrate more specificity in victim selection at the time of their first rapes were more likely to become Increasers than those who did not. The second model, which used demographic and

al variables, was also significant ($p < .001$). It explained 28 percent of the overall variance and sified with an overall accuracy of 81 percent (91 percent of the Non-Increasers and 47 percent he Increasers). This model suggests that the Increasers tended to be white, to fall more ward the Anger end of the rape-type continuum (Power to Anger), and to commit rapes that ed longer. In this regard, there is some degree of replication in terms of the transportation and ation variables that were of different levels of importance in the earlier and current analyses. indicated in Table 33, Increasers also tended to travel shorter distances, on average, to rape 1 Non-Increasers.

The Increaser/Non-Increaser concept therefore continues to be of interest. Despite ability on the structure of the various models that were created in the two studies, the levels of ificance and the degree of variance explained suggests that there are behaviors present at the e of the first rape that are correlated with a subsequent increase in violence. Alternatively, the that the models themselves were not as consistent as was expected and that the degree of lance explained dropped substantially from the first to the second study suggests that the cept is not as robust as originally thought. One explanation for this may be embedded in the al patternings that were discovered in the current data set. Clearly, an increase in violence r a successive number of rapes by the same offender is much more likely for a white rapist 1 a minority rapist. In the current study, containing an approximately equal number of white minority rapists, 79 percent of the Increasers were white and only 21 percent were minority. s finding led the authors to reexamine the data from the earlier study where they found the ie pattern: all of the Increasers in the original sample of 41 serial rapists were white. This sistency across different studies suggests that this is a valid finding: there are racial differences

in the potential to increase in violence over a series of rape. This may reflect different motivations for the rape or different reactions to having raped previously. It is not an artifact of different levels of violence at the time of the first rape.

For the geographic part of the study, it was clear from the beginning that finding appropriate dependent variables would be crucial. Because no research that related crime-scene variables to geographic variables existed at the time that the project began, there was no guidance in the literature. Therefore, the Convex Hull Polygon and the four geographical models were created as discussed above. During the course of the study, Canter and Larkin's work using the Canter Circle (Canter and Larkin, 1993) was published, and therefore efforts were made to replicate their findings. Interestingly, Canter and Larkin found that 87 percent of their rapists lived inside the Canter Circle (Marauders), while only 51 percent of the current sample lived inside the Canter Circle. This may reflect cultural differences in the cognitive structuring of space, differences in the actual geographical layout of cities, or both.

Because of the comprehensive nature of the current data set, further exploration of the Canter Circle was possible. Three discriminant analyses were run using the behavioral scales, the composite factor scores, and the modal variables. Each of these was significant. The results suggest that those rapists who live inside the Canter Circle tend to manifest more "macho" behavior, were more demeaning, tended to be white, and tended to manifest sexual dysfunctions more often than the rapists who lived outside the Canter Circle (Commuters). As indicated on page 224, the most important variable in the modal variable analysis was whether or not the rapist lived inside or outside the Convex Hull Polygon. This was a negative correlation and its interpretation brought to light the fact that there are three cluster variables that need further

parative study (i.e., the area inside the Convex Hull polygon, the area outside the Convex Polygon but inside the Canter Circle, and the area outside the Canter Circle). This parative exploration is important because each of these designations represents increasingly larger areas, areas that seem to embody graduated concepts of the relationship between each offender's residence and his crimes.

In order to help inform investigative efforts, an attempt was also made to discriminate between cases in which the first rape was closest to the rapist's residence and cases in which the fifth rape (defined in the study as the fifth rape, the modal number) was closest. The discriminant analysis using the behavioral scales accounted for 43 percent of the variance. Rapists whose first rape was closest to home made more efforts to protect their identity and were more likely to bind their victims, although only 36 percent of these rapists did bind their victims. Further study of this interesting phenomenon seems to be warranted, as it represents a geographical variable that is of considerable use to law enforcement and seems, upon this first analysis, to be related to crime-related behavior at the time of the first rape.

Finally, the current study began to explore the issue of consistency and change as it is reflected in the behavior of serial rapists over the course of successive rapes (i.e., which dimensions of behavior remain consistent and which change randomly or undergo directional change). As summarized in Chapter VII, the analyses suggest that approximately half of the identified behaviors manifest by a rapist remain consistent over the course of successive rapes, while the other half show minimal or low levels of consistency. When the direction of change is examined, it appears that aspects of the modus operandi (i.e., degree of planning, protection of identity, and binding materials) show the most obvious degree of increase over time, particularly

for Anger rapists. The idea of consistency and change represents an important area of serial crime: in theory, it helps to define relevant dimensions of classificatory paradigms, which can inform investigative efforts to link crimes perpetrated by the same offender.

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APPENDIX A: CODING PROTOCOL

GEOGRAPHY OF RAPE

THIS PROTOCOL IS MADE UP OF THREE SECTIONS:

SECTION A: Questions that pertain to each rape.

SECTION B: Behavioral scales that describe the interaction between the victim and the perpetrator during each rape.

SECTION C: Questions that pertain to each rapist.

Sections A and B will be completed by the coders on each victim statement.

Section C will be completed separately from the entirety of information contained in each case file.

This protocol was developed as a collaborative effort between the Behavioral Science Services Unit of the FBI Academy and the Institute of Law, Psychiatry and Public Policy at the University of Virginia. It was developed under support from a National Institute of Justice reimbursable agreement # 91-IJ-R-027 and cannot be reproduced without permission.

Rape Code Number: _____

Offender I.D.: _____

Date of Offense: _____

Day of the Week: _____

Hour of Offense: _____
(Military Time)

1. Relationship of offender to victim:

1. stranger (never encountered before)
2. acquaintance (encounter only once prior to the rape)
3. acquaintance (encountered on more than one occasion prior to the rape, but not a frequent contact)
4. acquaintance (encountered on numerous occasions prior to the rape, but not a personal friend)
5. friend (close personal relationship with the victim, i.e., implies some reciprocity and closeness, rather than mere social contact)
6. relative by blood
7. relative by law (step-father; sister's husband)
8. victim is not sure, couldn't tell
99. no data/can't tell

2. General context in which offender encountered victim:

1. date rape
2. victim encountered and picked up in some social context (e.g., at bar or party)
3. victim hitchhiking
4. victim encountered and picked up in some business/commercial context (e.g., real estate sales)
5. victim jogging or bike riding
6. victim encountered in some other outside activity (e.g., walking down street)
7. babysitting
8. offender broke into victim's home - no goods stolen
9. offender broke into victim's home - stole items from victim
10. offender gained access to victim's home through a con
11. Other: specify _____
99. no data/can't tell

3. The initial contact site was:

1. indoors
2. outdoors
99. no data/can't tell

Specific description of the initial contact site:

1. in victims residence
2. in victim's work place
3. shopping mall/area
4. school or playground
5. public street
6. parking lot
7. in a vehicle
8. remote open area/wooded area
9. hotel/motel
10. bike path/jogging trail
11. other/describe _____

99. no data/can't tell

Description of community where initial contact occurred (code
ments as suburban unless clearly indicated as being urban):

1. rural
2. suburban
3. urban
99. no data/can't tell

Description of neighborhood where initial contract occurred:

1. uninhabited or wilderness
2. farm or agriculture
3. residential
4. commercial, industrial
99. no data/can't

If the initial contact site was inside a building,
did offender make entry?

1. offense not in building
2. building was open to public
3. through unlocked door
4. let in by victim
5. forced entry
6. let in by 3rd person
7. victim does not know
99. no data/can't tell

Describe the offender's initial approach to the
victim:

Deceptive Approaches:

1. posed as authority figure
2. pseudo business transaction
3. asked victim to pose or model for photographs
4. offered job, money, treats, toys

and 6 to be cross checked with map by coder responsible for coding
tion C

5. implied family emergency or illness
 6. wanted to show something to victim
 7. asked for or offered assistance (e.g. ask to use phone; ask for directions.)
 8. caused or staged traffic accident
 9. phoney police traffic stop
 10. solicitation for sex
 11. offered ride or transportation
 12. some other deception. Describe _____
-

Surprise Approaches (can involve the use of a weapon):

13. lay in wait - out of doors
 14. lay in wait - in building
 15. lay in wait - in a vehicle
 16. victim in home
 17. victim in home sleeping
 18. followed/stalked victim
 19. other surprise. Describe _____
-

Direct or Immediate Assault:

20. immediately physically overpower victim
(tackled, picked up)
 21. immediately hit victim with hand, fist or
clubbing weapon
 22. grabbed and immediately choked victim
 23. immediately stabbed victim
 24. some other direct assault. Describe _____
-

99. no data/no information on any of the approach strategies

. Specific description of rape site:

1. in victims residence
 2. in victim's work place
 3. shopping mall/area
 4. school or playground
 5. public street
 6. parking lot
 7. in a vehicle
 8. remote open area/wooded area
 9. hotel/motel
 10. bike path/jogging trail
 11. other/describe _____
-

99. no data/can't tell

0. Which of the following types of restraints were used:

1. no restraints used
2. rope

tape
belt
nylons/panty hose
underclothing
outer clothing
socks
handcuffs
blindfold
restraints used, but victim doesn't know what they were
other _____ (describe)
no data/can't tell

were restraints obtained?
no restraints employed
restraints available at the scene of the offense were used
restraints available at the scene AND those brought to the scene
were used
only restraints brought to the scene were employed
no data/can't tell

oval of victim's clothing:
vaginal area exposed
breast area exposed
vaginal and breast area exposed
victim disrobed completely
victim nude at time of encounter
not applicable/no clothing removed
no data/can't tell

er of removing the victim's clothing:
victim forced to remove her own clothes
torn/ripped by offender
cut/slashed by offender
without damage by offender
both victim and offender took part in clothing removal
Other. Describe _____
not applicable/no clothing removed
no data/can't tell

thing worn by the offender:
soiled, tattered or unkempt
decent but not expensive
expensive (e.g., designer jeans, expensive sweaters, good suit)
other
no data/can't tell

fender's removal of his own clothing:
genital area only exposed
completely removes pants (clear indication of patn removal)
exposes chest and genital areas
disrobes completely

- 88. not applicable/didn't remove clothing
- 99. no data/can't tell

Did the rapist give some verbal indication that he had carefully acted this victim:

- 1. no
- 2. yes
- 99. no data/can't tell

What types of weapons were present or used?

- | | |
|---|---------------------------------|
| 1. knife/cutting | |
| 1. no knife/cutting | 1. brought to scene by offender |
| 2. present/displayed | 2. found by offender at scene |
| 3. used on victim | crime |
| 2. screw driver | |
| 1. no screwdriver | 1. brought to scene by offender |
| 2. present/displayed | 2. found by offender at scene |
| 3. used on victim | crime |
| 3. blunt instrument (pipe, rock, club) | |
| 1. no blunt instrument | 1. brought to scene by offender |
| 2. present/displayed | 2. found by offender at scene |
| 3. used on victim | crime |
| 4. handgun | |
| 1. no handgun | 1. brought to scene by offender |
| 2. present/displayed | 2. found by offender at scene |
| 3. used on victim | crime |
| 5. rifle/shotgun | |
| 1. no rifle/shotgun | 1. brought to scene by offender |
| 2. present/displayed | 2. found by offender at scene |
| 3. used on victim | crime |
| 6. ligature (around neck) | |
| 1. no ligature | 1. brought to scene by offender |
| 2. present/displayed | 2. found by offender at scene |
| 3. used on victim | crime |
| 7. household appliance | |
| 1. no household appliance | 1. brought to scene by offender |
| 2. present/displayed | 2. found by offender at scene |
| 3. used on victim | crime |
| 8. victim unsure about presence or type of weapon | |
| 9. other Describe _____ | |
| 99. no data/can't tell | |

Sexual acts committed by the offender to the victim:

- 1. kissing/nuzzling
- 2. fondling
- 3. biting
- 4. cunnilingus
- 5. masturbation
- 6. vaginal intercourse with penis
- 7. anal intercourse with penis
- 8. digital penetration of vagina or anus
- 9. vaginal penetration with inanimate object

- . anal penetration with inanimate object
- . Other Please specify _____
- . Not applicable
- . no data/can't tell

fender had victim perform the following sexual acts:

- . fellatio
- . kissing
- . fondling/masterbation of offender
- . foreign object(s) in victim
- . foreign object(s) in offender
- . masturbation of victim
- . wear specific clothing
- . Other Please specify _____
- . Not applicable
- . no data/can't tell

there was foreign object penetration, what object
_____ was inserted into what body
g _____.

d the offender display any obvious fetishes?

- . no
- . yes
- . no data/can't tell
- f yes, describe _____

as there evidence of:

- . Sexual ritual (e.g. meals, outfits, chitchat, repetitive patterns of sexual acts, verbal/behavioral scripting, bondage, torture, behavior, exhibitionistic behavior)
- 1. no
- 2. yes
- 99. no data/can't tell

. Did harming the victim seem to "turn the rapist on?"

- 1. no
- 2. yes
- 99. no data/can't tell

. Did the rapist request masochistic stimulation?

- 1. no
- 2. yes
- 99. no data/can't tell
- If yes, describe _____

. The rater should try to capture whether the rapist performed any acts that were masochistic in nature:

- 1. no
 - 2. yes
 - 99. no data/can't tell
5. Offender had been drinking (if no mention, code 1):
- 1. no
 - 2. yes
 - 99. no data/can't tell
6. Offender used drugs (if no mention, code 1):
- 1. no
 - 2. yes
 - 99. no data/can't tell
7. Offender gave drugs to victim (if no mention, code 1):
- 1. no
 - 2. yes
 - 99. no data/can't tell
8. Offender experience or knowledge about police or prison (do n code if offender only demonstrates awareness of ID protection
- 1. no
 - 2. yes
 - 99. no data/can't tell
9. Offender wearing any item of victim clothing:
- 1. no
 - 2. yes
 - 99. no data/can't tell
10. Did the offender bite the victim?
- 1. no
 - 2. yes
 - 99. no data/can't tell
11. Location of bite marks on the victim's body:
-
12. Besides the offender, did another male participate in the assault?
- 1. no
 - 2. yes
 - 99. no data/can't tell
13. Besides the offender, did a female participate in the assault?
- 1. no
 - 2. yes
 - 99. no data/can't tell

of the offender with multiple assailants?

follower
accomplice
leader; initiator
not applicable/no multiple assailants
no data/can't tell

other persons present during the assault (must be present in the same room):

no one else present
parent of victim
spouse of victim
child of victim (actually witnessing the assault)
male friend of victim
female friend of victim
other: _____

describe

no data/can't tell

if another person was present, were they included in the sexual behavior?

no
yes
not applicable
no data/can't tell

presence of sexual dysfunction:

absent
present
no data/can't tell

what did the offender do to overcome the dysfunction?

no dysfunction
nothing
masturbate self
forced victim to orally copulate offender
forced victim to fondle/masturbate offender
other Describe _____
no data/can't tell

specific description of release site:

same as contact site
same as rape site
same as contact and rape site
in victim's residence
in victim's business
shopping mall/area
school or playground
public street
parking lot
in a vehicle

- 11. remote, open area/wooded area
- 12. hotel/motel
- 13. bike path/jogging trail
- 14. other _____
- 99. no data

33. Age of victim at time of assault, in years:
99=no data available _____

34. Race/ethnicity of victim:
- 1. white, Caucasian
 - 2. black, African-American
 - 3. brown, Hispanic
 - 4. Asian
 - 5. native American
 - 6. other: _____

describe

99. no data available/can't tell

35. Marital status of victim:
- 1. never married
 - 2. separated
 - 3. divorced
 - 4. widowed
 - 5. unmarried, living with significant other
 - 6. married at time of assault
 - 7. other
 - 99. no data/can't tell

36. Victim's residence at time of assault:
- 1. rooming house
 - 2. dormitory
 - 3. hotel/motel
 - 4. apartment/town house/ any attached dwelling
 - 5. single family
 - 6. other: _____
- describe in detail
99. no data/can't tell

37. At time of assaults, the victim resided with:
- 1. alone
 - 2. group living situation (e.g., dormitory)
 - 3. in family situation (specify who lived in home _____)
 - 4. with female or male roommate
 - 5. other (specify): _____
 - 99. no data/can't tell

38. Victim's occupation at time of assault?

39. Sex of co-victim of sexual assault:

no co-victims
female only
male only
both male and female co-victims
no data/can't tell

or weather conditions at time of offense:

very hot
fair, warm
cool
foggy
rain
very cold
snow
other: describe _____
no data/can't tell

articles removed from crime scene:

nothing taken
money/credit cards
any item of victim clothing
any other personal items of victim
(describe:) _____
jewelry
other articles of value
other: _____ describe
no data/can't tell

is weapon taken from the scene by the offender:

no
yes
no data/can't tell

did offender leave anything at scene of crime:

no
yes Specify _____
no data/can't tell

if offender made a statement indicating that:

. he is married
. he has a girlfriend
. is consistently employed or has stable employment
. indicates his involvement in other criminal behavior
. no data/doesn't mention these topics

if offender indicates the following about his job:

. has no job
. he is a laborer
. he has a white collar job
. he has a professional job
. is a student

99. no data/doesn't mention his job
46. Did offender vandalize (damage for the sake of damaging) any vict
property?
1. no
2. yes
99. no data/can't tell
47. Vehicle used in the assault:
1. no
2. yes
99. no data/can't tell
48. Ownership of vehicle used in assault:
1. victim's vehicle
2. vehicle borrowed or stolen by offender
3. vehicle owned by offender
88. not applicable; no vehicle used
99. no data/can't tell
49. If vehicle used, in what way?
1. offender gave victim a ride
2. offender hid in victim's car
3. offender forced victim into victim's car
4. offender forced victim into offender's car
5. offender disabled victim's car
6. offender involved victim's car in accident
7. offender simulated accident or car trouble
8. offender assaulted victim in the car
9. offender parked car and followed victim on foot
10. other: _____

describe in detail
88. not applicable; vehicle not used
99. no data/can't tell
50. Age of vehicle owned by offender at the time
of the offense:
1. less than 6 months old
2. 6 mos. to 1 year old
3. 1-5 years old
4. more than 5 years old
88. does not apply; no vehicle used
99. no data/can't tell
51. Vehicle condition:
1. well cared for
2. average wear and tear
3. neglected, poor condition
88. does not apply; no car used

99. no data/can't tell

Quality/expense of vehicle used in the offense:

1. inexpensive sub-compact
 2. average cost car (full size, sports, or pick-up)
 3. expensive car (Jaguar, Mercedes, Buick Park Avenue, etc.)
88. does not apply; no car used
99. no data/can't tell

SECTION B

VERBAL BEHAVIORAL SCALES

PERSONAL INFORMATION ABOUT SELF

1. Did not talk about self; Did not talk at all, or, did talk but none of it was about self (e.g. all he did was given orders to the victim).

2. Scoring 2 or higher means the rapist said one thing about self.

3. Talk about self is less than a significant part of what rapist says.

4. Talk about self was a significant part of rapist's conversation, however much conversation there is.

5. Talked mostly about self; virtually everything the rapist said was about himself. Rapist may have talked a lot or not talked at all, but almost all of what he did say was about himself.

EXCUSES

1. Did not make any excuses or justifications of his behavior.

2. Made one statement that excused or justified his behavior.

3. Justifications are less than a significant part of what rapist said.

4. Justifications were a significant part of the rapist's conversation.

5. Virtually everything the rapist said was designed to justify or excuse his behavior.

3. SELF-PROMOTION

1. Says nothing at all, or nothing self-promoting about himself.
2. Says one self-promoting thing about himself.
3. Less than a significant part of his conversation.
4. A significant part of rapists conversation, however much conversation there is.
5. Almost everything rapist says is self-promoting.

4. SELF-DEPRECATING

1. Says nothing at all, or nothing demeaning about himself.
2. Says one demeaning thing about himself.
3. Less than a significant part of his conversation.
4. A significant part of rapist's conversation, however much conversation there is.
5. Almost everything rapist says is demeaning about himself.

5. SENSITIVITY TO VICTIM

1. No verbal indication of any interest in victim's feelings or needs. Total lack of interest in how victim feels.
2. Rapist makes one statement indicating concern about victim feelings or needs.
3. Less than a significant part of his conversation.
4. A significant part of the conversation.
5. Verbal indications of concern for victim's needs are major part of rapist conversation.

6. INQUISITIVE

1. No questions: if none are asked, mark this.
2. Rapist asks victim one question about her life.
3. Less than a significant part of conversation.

4. A significant part of the conversation.
5. Questions about victim's life are a major part of rapist conversation.

COMPLIMENTARY TOWARD VICTIM

1. Says nothing at all, or nothing complimentary about victim.
2. Says one complimentary thing about victim: (e.g., "You a nice body.")
3. Less than a significant part of the conversation.
4. Complimentary about victim is a significant part of rapist's conversation.
5. Almost everything rapist says is complimentary about victim.

HOSTILITY/WOMEN

1. Says nothing at all, or nothing hostile about victim.
2. Says one hostile thing about victim.
3. Hostile statements about victim were less than a significant part of rapist's conversation.
4. Hostile statements about victim are a significant part of rapist's conversation, however much conversation there is.
5. Almost everything rapist says is hostile about victim.

HOSTILITY/GENERAL

1. Says nothing hostile, or only hostile comments about the victim or women in general (Code Hostility/Women).
2. Makes one generic hostile statement.
3. Hostile statements were less than a significant part of conversation.
4. Hostile statements are a significant part of the rapist's conversation, however much conversation there is.
5. Almost everything the rapist says is hostile.

10. REASSURING

1. No verbal attempts to reassure victim.
2. Rapist makes one verbal attempt at reassurance.
3. Reassuring comments are less than a significant part of conversation.
4. Reassuring comments are a significant part of rapist's conversation, however much conversation there is.
5. Almost everything the rapists says is reassuring.

11. APOLOGETIC

1. No apologetic statements by rapist.
2. Rapist makes one apologetic statement.
3. Apologetic statements are less than a significant part of t rapist's conversation, however much conversation there is.
4. Apologetic statements are a significant part of the rapist' conversation.
5. Apologies are the primary theme in the rapist's conversatio

12. DEMANDS

1. No demanding statements by rapist.
2. Rapist makes one demanding statement (this would include is orders: "Roll over"; "Shut up").
3. Demanding statements less than significant part of the rapi conversation, however much conversation there is.
4. Demanding statements are a significant theme in the rapist' conversation.
5. Demands are the primary theme in the rapist's conversation.

13. THREATS

1. No threatening statements by rapist.
2. Rapist makes one threatening statement.

3. Threatening statements less than significant part of the st's conversation, however much conversation there is.

4. Threatening statements are a significant theme in the st's conversation.

5. Threats are the primary theme in the rapist's ersion.

SEXUALLY-ORIENTED

1. No explicit sexual verbal content at all.

2. One explicit sexual reference.

3. Sexual content was less than a significant part of the rapist's ersion, however much conversation there is.

4. Sexual references are a significant theme in the rapist's ersion.

5. Conversation is filled with explicit sexual references.

VERBAL SCRIPTING

1. No verbal scripting.

2. One directive regarding verbal scripting.

3. Verbal scripting was less than a significant part of the st's encounter with the victim.

4. Verbal scripting was a significant theme in the rapist's unter with the victim.

5. Victim scripting was dominant part of the encounter.

DEMEANING SCRIPTING

1. No demeaning scripting.

2. One directive regarding demeaning scripting.

3. Demeaning scripting was less than a significant part of rapist's encounter with the victim.

4. Demeaning scripting was a significant theme in the st's encounter with the victim.

5. Victim scripting was dominant part of the encounter.

17. SCRIPTING TO COMPLIMENT RAPIST

1. No scripting to compliment rapist.
2. One directive regarding scripting to compliment rapist.
3. Scripting to compliment rapist was less than a significant part of the rapist's encounter with the victim.
4. Scripting to compliment rapist was a significant theme in the rapist's encounter with the victim.
5. Victim scripting was dominant part of the encounter.

18. BEHAVIORAL SCRIPTING

1. No behavioral scripting.
2. One directive regarding behavioral scripting.
3. Behavioral scripting was less than a significant part of the rapist's encounter with the victim.
4. Behavioral scripting was a significant theme in the rapist's encounter with the victim.
5. Victim behavioral scripting was dominant part of the encounter.

19. VERBAL NEGOTIATION

1. No attempt at negotiation took place.
2. One attempt at negotiation took place.
3. Attempts at negotiation are less than significant part of the conversation, however much conversation there is.
4. Attempts at negotiation are a significant theme in the rapist's conversation.
5. Attempts at negotiation are a primary theme in the rapist's conversation.

PHYSICAL BEHAVIOR SCALES

BLUNT FORCE

1. No such force.
2. Minimal force (struck the victim, but more to intimidate to punish).
3. Moderate force (victim was struck repeatedly in a painful er).
4. Excessive force (victim was seriously beaten).
5. Brutal/Fatal force (victim was severely beaten and/or ed).

se check if incident resulted in the death of the victim _____.

VICTIM INJURY RESULTING FROM BLUNT FORCE

1. No blunt force used.
2. Minor injuries (cuts, scratches, abrasions).
3. Moderate injuries requiring medical treatment (stitches, testing).
4. Extreme injuries resulting in long-term or permanent ge).
5. Death.

VICTIM INJURY BY OTHER THAN A BLUNT WEAPON

1. No such force/injury.
2. The offender had a weapon, but did nothing other display or threaten with it.
3. A weapon was present and injuries, not requiring italization, were involved.
4. A weapon was present and injuries involving hospitalization were inflicted.
5. A weapon was present and life-threatening injuries were involved.

4. VICTIM INJURY

1. No physical injury.
2. Minor cuts, scratches, abrasions only; injuries that would not ordinarily require professional medical attention.
3. Injuries require medical attention.
4. Injuries are life threatening or may result in permanent disfigurement or impairment.
5. Victim is killed.

4. BINDINGS

1. No bindings involved.
2. Victim was bound but later unbound by the rapist.
3. Victim was bound and left bound by the rapist.
4. Victim was bound in a physically painful manner, and was left bound by the rapist.
5. Victim was bound in a variety of positions and/or in an unnecessary manner (upper arms, calves, thighs, hogtied).

5. BINDING MATERIAL

1. No bindings used.
2. Bindings of opportunity (items from victim's possessions).
3. Items other than listed in 4 or 5 brought by the rapist.
4. Pre-cut lengths of rope, handcuffs, tape brought by the rapist.
5. Special purchase items (leather wrist restraints, hoods, leather restraints) brought by the rapist.

6. SADISTIC INFLICTION OF PAIN

1. No intentional infliction of pain involved.
2. Rapist intentionally inflicted pain on the victim on one occasion.

Rapist intentionally inflicted pain on victim at least

Rapist intentional inflicted pain on victim at least
times.

Intentional infliction of pain dominated the sexual

CTION OF FORCE USED BY OFFENDER

Force used was instrumental only, that is, used only for
of forcing victim compliance.

On one occasion, rapist used force that was more than
ry to achieve compliance.

Force not necessary to achieve compliance was used more
ce, but was not a significant theme in the use of force in this

Force that was not necessary to achieve compliance was a
cant part of the force used in this rape.

Expressing rapist rage or other emotions was the primary
n of force used by the rapist in this encounter.

TIVITY

No captivity occurred.

Captivity involved 24 through 48 hours.

Captivity involved 49 through 72 hours.

Captivity involved 73 through 96 hours.

Captivity involved more than 96 hours.

PORT NOT TO HARM VICTIM

No effort at all is made to ensure victim suffers no
al injury; whether or not the victim is harmed is not the issue.

Rapist makes one effort to protect victim from physical

Attempts at avoiding harm are less than significant
hout rape.

4. Attempts at avoiding harm are a significant part of rapist's behavior.

5. Rapist demonstrates a continuous, concerted effort to avoid causing physical harm to the victim. Avoiding physical harm to victim is principal concern of the rapist.

TRANSPORTATION OF VICTIM

1. No transportation involved.
2. Transporting the victim less than a city block.
3. Transporting the victim up to a mile.
4. Transporting the victim up to five miles.
5. Transporting the victim more than five miles.

RAPIST'S EFFORTS TO PROTECT IDENTITY

1. Value of one on identity protection.
2. Value of two on identity protection.
3. Value of three on identity protection.
4. Value of four on identity protection.
5. Value of five on identity protection.

DURATION OF THE ASSAULT

1. Less than 10 minutes.
2. 11 through 45 minutes.
3. 46 through 90 minutes (1 1/2 hours).
4. 91 through 135 minutes (2 1/4 hours).
5. More than 2 1/4 hours.

MACHO BEHAVIOR OF THE RAPIST

1. Not at all macho.

Not usable code.

Some indication of rapist being macho-like; but not a defining sense of this being a very macho individual.

Not usable code.

Rapist could hardly act in a more macho manner.

PLANNING OF RAPE

No evidence of any planning or preparation. The assault is as if it occurred impulsively after the victim was encountered.

Minimal planning, although the encounter with the victim may have preceded the assault, there is some evidence that the offender being so wait. For example, a man who picks up hitchhiker, who takes a woman from a bar, who stops to offer assistance on roadside.

Moderate planning, there is clear evidence that the offender had had the idea of raping before the offense. For instance, he went into the victim's residence and/or carries with him one crime item, e.g., a mask, gloves.

Significant planning, evidence of fairly extensive preparation on a previous occasion, e.g., rapist already knew the layout of the house, names of the children. Suggestion that particular victim had been identified. Brought a variety of crime related articles (e.g., restraints, blindfold).

Extensive planning, every aspect of rape seemed prearranged, e.g., used a modified vehicle, took victim to a preselected location, brought rape kit, brought recording equipment. Clear evidence of specific plan of the rapist was following.

HUMILIATION OF VICTIM

None of the rapist's acts are performed specifically to humiliate the victim.

Rapist deliberately humiliated the victim on one occasion.

A few instances where rapist humiliated the victim.

It's clear that humiliation of the victim is one theme, others, of the rape.

Causing humiliation to the victim is a central concern of the rapist and is present in many of his acts.

ENJOYMENT

1. No rapist interest in display of enjoyment by victim.
2. Any evidence at all of interest in victim enjoyment ("I you liked that").
3. Some talk about victim enjoyment.
4. Interest in victim enjoyment is more than just casual.
5. Demands excessive display of enjoyment.

SEXUAL BEHAVIOR OF THE RAPIST

KISSING ON MOUTH

1. No kissing took place.
2. One kiss.
3. Kissing less than significant part of rape.
4. Kissing a significant part of rape.
5. Kissing was a definitive part of the attack.

NUZZLING (SUCKING, NIBBLING, BITING, RUBBING BUT NOT BITING) ON TI DY (E.G., BREASTS)

1. No nuzzle took place.
2. One nuzzle.
3. Nuzzling less than significant part of rape.
4. Nuzzling a significant part of rape.
5. Nuzzling was a definitive part of the attack.

FONDLING

1. No act took place.
2. Took place once.
3. Less than a significant part of rape.

Significant part of rape.

Dominated the sexual assault.

ELLATIO

No fellatio took place.

Victim was forced to place penis in mouth on one
1.

Fellatio was forced on 2 occasions.

Fellatio was forced on 3 occasions.

Fellatio was forced more than three times.

UNILINGUS

No acts took place.

Cunnilingus occurred on one occasion.

Cunnilingus occurred on at least two occasions.

Cunnilingus occurred on at least three occasions.

Cunnilingus occurred on more than three occasions.

SEX

No act took place.

Anal sex occurred once.

Anal sex occurred at least twice.

Anal sex occurred at least three times.

Anal sex occurred more than three times.

INAL SEX

No act took place.

Vaginal sex occurred once.

Vaginal sex occurred at least twice.

4. Vaginal sex occurred at least three times.
5. Vaginal sex occurred more than three times.

FOREIGN OBJECT

1. No act took place.
2. Took place once.
3. Took place at least twice.
4. Took place at least three times.
5. Took place more than three times.

DIGITAL OR MANUAL INSERTION

1. No act took place.
2. Took place once.
3. Took place at least twice.
4. Took place at least three times.
5. Took place more than three times.

SEXUAL DYSFUNCTION OF THE RAPIST

1. No sexual dysfunction reported.
2. Erectile insufficiency.
3. Premature ejaculation.
4. Retarded ejaculation.
5. Conditional impotence/ejaculation.

RESISTANCE SCALES

RBAL RESISTANCE BY VICTIM

- . No verbal resistance.
- . One resistive statement.
- . Resistive statements are less than a significant ent of the victim's remarks.
- . Resistive statements are a significant component of the 's remarks.
- . Continuous, verbal resistance throughout encounter.

NCONFRONTATIVE RESISTANCE BY VICTIM

- . No nonconfrontative resistance.
- . One nonconfrontative resistive behavior.
- . Nonconfrontative resistance less than a significant ent of rape.
- . Nonconfrontative resistance significant component of
- . Extensive and pervasive nonconfrontative resistance hout entire encounter.

YSICAL RESISTANCE

- . No physical resistance.
- . One attempt at physical resistance.
- . Physical resistance less than significant part of ter.
- . Physical resistance a significant part of encounter.
- . Pervasive, prolonged physical resistance throughout e encounter.

APIST'S RESPONSE TO VICTIM RESISTANCE

- 1. None

2. Verbal (offender responds nonphysically with verbal statements intended to gain victim compliance via threat or negotiation).

3. Physical nonbrutal (offender uses physical force that is noninjurious to gain victim compliance, such as slapping or holding the victim down).

4. Physical, excessive (uses more force than necessary to overcome resistance.)

5. Physical, brutal (offender uses physical force that is highly injurious, resulting in long-term or permanent injury to the victim).

RAPE TYPE

What type rape is this?

Power-reassurance _____

Power-assertive _____

Anger-retaliatory _____

Anger-excitation _____

Please complete the following scales. These represent earlier versions of the verbal/behavioral scales and will be used for comparative purposes only.

No info

_____ 1 2 3 4 _____
Complimentary about self Demeanor about self

No info

_____ 1 2 3 4 _____
No overt anger Overwhelmed anger

No info

_____ 1 2 3 4 _____
Complimentary about victim Demeanor about victim

No info

| | | | | | |
|------|-----------------------------------|---|---------------------|---|-----------------------------|
| | 1 | 2 | 3 | 4 | 5 |
| | Apoletic | | | | Demanding |
| info | | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| | No profanity | | | | Excessive profanity |
| info | | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| | Opportunistic selection of victim | | | | Careful selection of victim |
| info | | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| | Spur of the moment rape | | | | Extensive planning of rape |
| info | | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| | No injuries | | Accidental injuries | | Intended injuries |
| info | | | | | |
| | 1 | 2 | 3 | 4 | 5 |
| | Sensitive | | | | Macho |

ION C

st ID # _____

and State in which offenses occurred

Date of Birth: _____

Physique at time of last offense:

| | |
|-------------------------|---|
| thin, skinny..... | 1 |
| slim, slender..... | 2 |
| medium, average..... | 3 |
| muscular..... | 4 |
| heavy, stocky..... | 5 |
| obese, fat..... | 6 |
| data not available..... | 9 |

Race or ethnic origin:
(as defined by rapist)

| | |
|-------------------------------|---|
| white, caucasian..... | 1 |
| black, African-American..... | 2 |
| hispanic, Latin American..... | 3 |
| asian..... | 4 |
| native american..... | 5 |
| other..... | |
| data not available..... | 9 |

Most recent marital status:

| | |
|--|---|
| unmarried, no significant other... | 1 |
| unmarried, lives with significant other..... | 2 |
| married..... | 3 |
| separated..... | 4 |
| divorced..... | 5 |
| widowed..... | 6 |
| no data available..... | 9 |

Education:

Highest grade completed or attended: _____
0 = less than 1st grade
1= first grade - 13 = college freshman, etc.
No Data Available = 99

Offender's normal work hours: (Military Time) _____
88=Unemployed; 99= No recall, no data

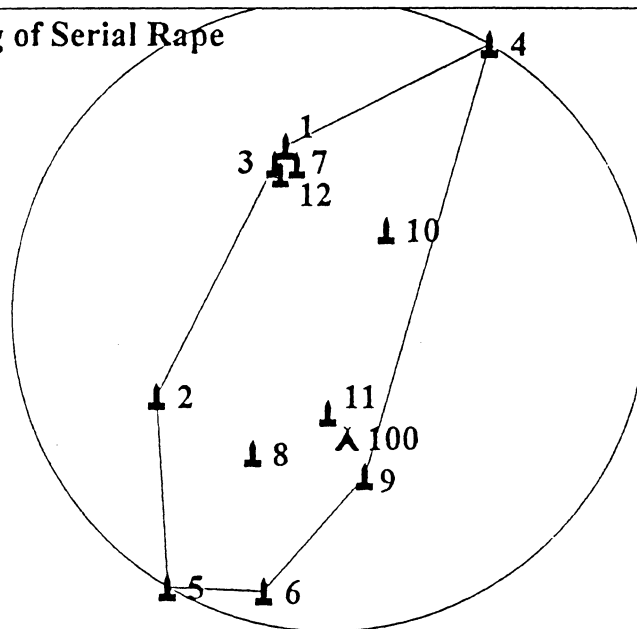
Did the offender demonstrate similarities between his victims in te

1. hair color
 - 1 no similarity
 - 2 suspected similarity

3 confirmed similarity
physical build (large breasts)
1 no similarity
2 suspected similarity
3 confirmed similarity
physical handicap
1 no similarity
2 suspected similarity
3 confirmed similarity
psychological handicap
1 no similarity
2 suspected similarity
3 confirmed similarity
dress or clothing
1 no similarity
2 suspected similarity
3 confirmed similarity
age
1 no similarity
2 suspected similarity
3 confirmed similarity
occupation
1 no similarity
2 suspected similarity
3 confirmed similarity
other (specify)

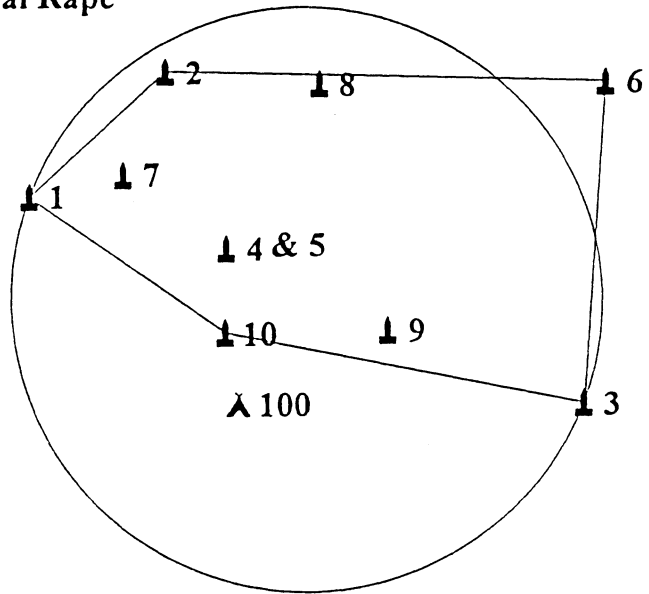
APPENDIX B: EXAMPLES OF THE "MAPLESS MAPS"

**Cognitive Mapping of Serial Rape
Case 117**



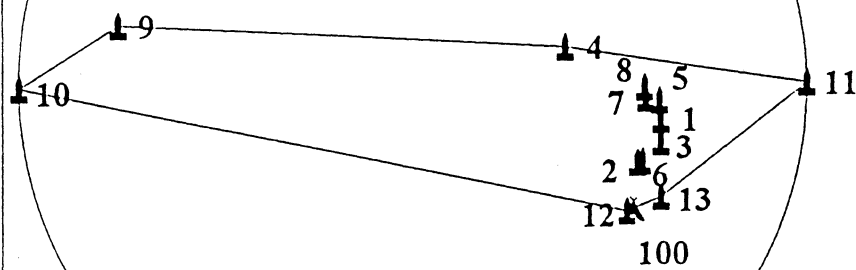
Scale: 1"=1.7 Miles

**Cognitive Mapping of Serial Rape
Case 68**



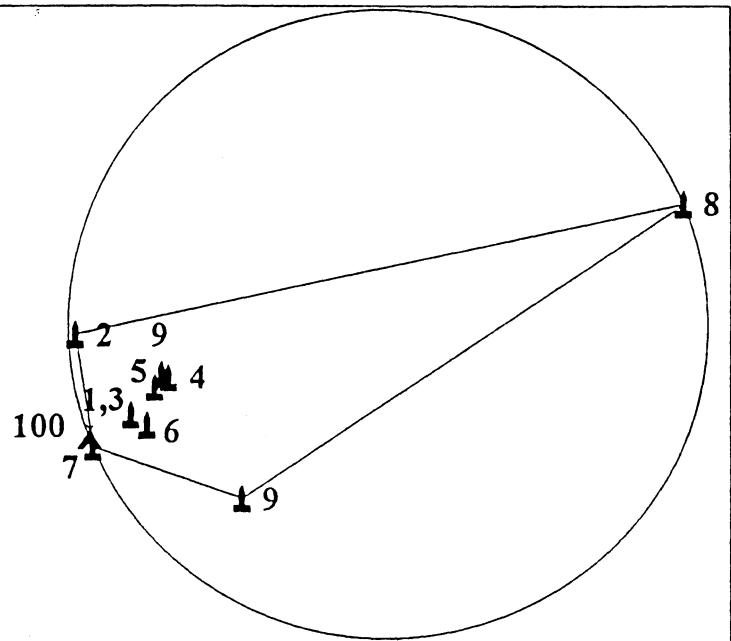
Scale: 1"=0.15 Miles

**Cognitive Mapping of Serial Rape
Case 21**



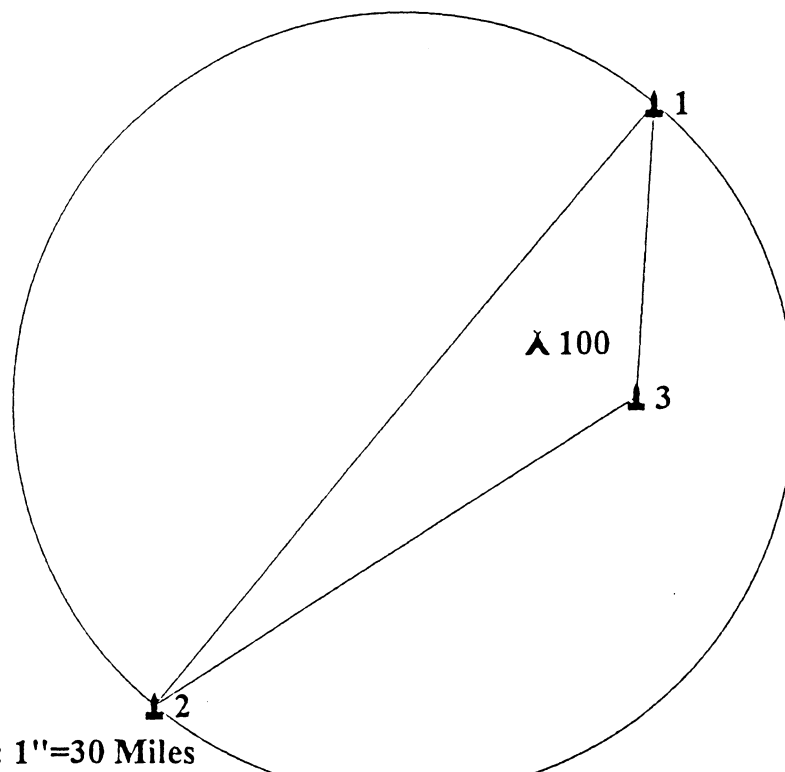
Scale: 1"=1.9 Miles

**Cognitive Mapping of Serial Rape
Case 106**

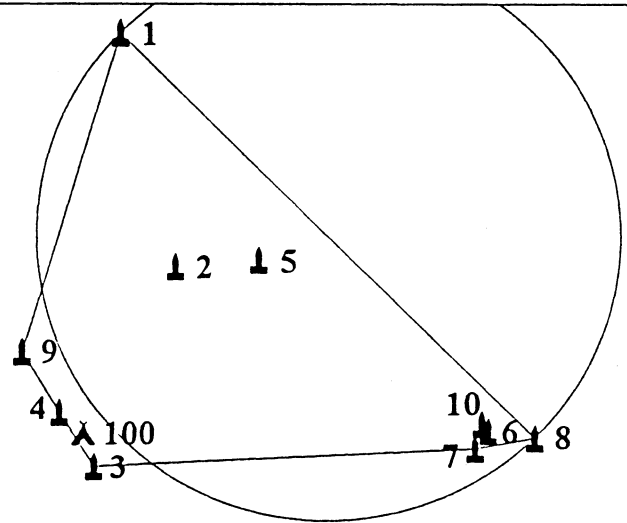


Scale: 1"=0.75 Miles

**Cognitive Mapping of Serial Rape
Case 33**

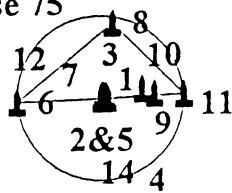


**Cognitive Mapping of Serial Rape
Case 910**



Scale: 1"=8 Miles

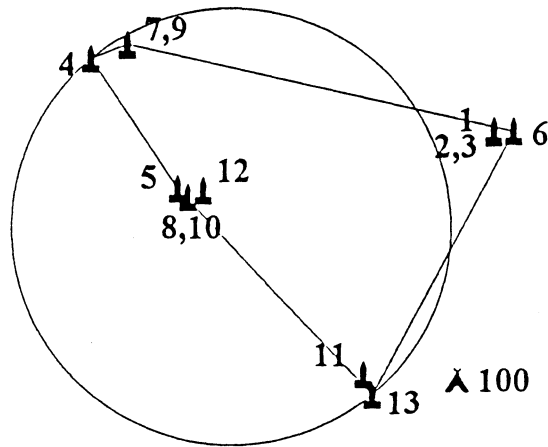
Cognitive Mapping of Serial Rape
Case 75



▲ 100

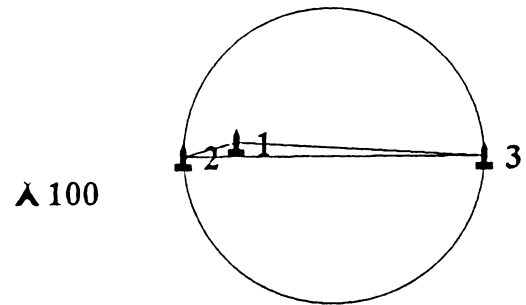
Scale: 1"=17 Miles

**Cognitive Mapping of Serial Rape
Case 119**



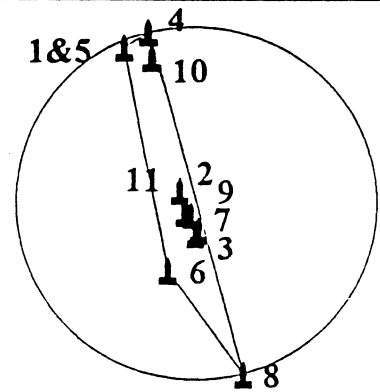
Scale: 1"=5 Miles

**Cognitive Mapping of Serial Rape
Case 118**



Scale: 1"=2 Miles

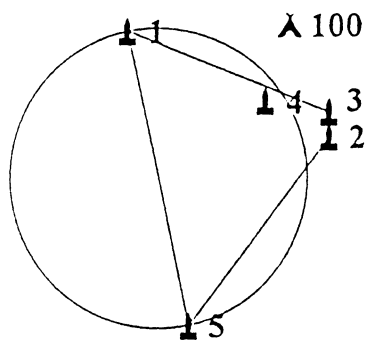
**Cognitive Mapping of Serial Rape
Case 51**



100

Scale: 1"=3.5 Miles

Cognitive Mapping of Serial Rape
Case 46



Scale: 1"=0.75 Miles

APPENDIX C: TEMPORAL DISTRIBUTION OF RAPE EVENTS

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First draft submitted to the Behavioral Sciences Service Unit, Federal Bureau of Investigation, on September 1, 1994. Do not quote or cite without permission of the authors.

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TEMPORAL DISTRIBUTION of RAPE EVENTS

1.0 Introduction

Event distributions can generally be characterized by the rate of occurrence or by the mean waiting time between events. If T_i is the waiting time between two events, the total time of observation is

$$\text{Observation Time} = \sum_{i=2}^N T_i$$

The rate of occurrence is then defined as

$$\lambda = \frac{N \text{ of Events}}{\sum_{i=2}^N T_i}$$

To be consistent with recent criminological literature, we use the lower case Greek lambda (λ) to denote the rate of occurrence. Note that λ is always expressed "per unit time." Depending on context, we analyze events per month or year; the time scale is arbitrary, however, and was usually selected on aesthetic grounds. Note also that, unlike ratios or proportions, a rate can be greater than one.

The event distribution can also be characterized by the expected waiting time between events. Denoted T , this is approximately

$$T = \frac{1}{N-1} \sum_{i=2}^N T_i$$

Under simple assumptions, λ and T hold the exact same information about the generating process

e., an offender). To facilitate understanding, and to be consistent with the recent criminological literature, we analyze waiting time statistics throughout.

In the next section, we assume that each offender in the combined sample has a unique offense rate. For the j th offender, this rate is λ_j . Where X_j is some characteristic of the j th offender, we assume that the individual's offense rate is function of that characteristic and a random error. Regression of λ_j on X_j allows us to assess the effects of independent variable characteristics on the rate of offending. But while individual offense rates may be determined entirely by individual offender characteristics, variations from offense to offense are apparent. In some cases, moreover, these variations are related not to static offender characteristics, but to characteristics of the event.

To discover the temporal covariates of events, we next analyzed the time between the j th offender's i th and $i+1$ st offense (T_{ji}). These analyses consist of regressing T_{ji} on an appropriate function of X_{ji-1} ; *i.e.*, on characteristics of the preceding event. The substantive theory behind these regressions is that, under certain circumstances, the experience of one event will affect the waiting time to the next event. In several instances, this theory is supported by the data in that waiting time to the next event can be predicted from (or is significantly correlated with) characteristics of the last event.

In addition to analyses of rates (λ_j) and waiting times (T_{ji}), we analyzed the length of each career (ΣT_j). Although several offender characteristics appear to predict career length, we cannot express great confidence in the validity of the relationships due to the nature of the event data. Not simply, the manner in which these data were collected raises the potential for confounds of career length and reporting. Nevertheless, the relationships discovered in our analyses suggest the

need for further research on this issue.

2.0 Analysis of Rates

To analyze the covariates of offense rate, offense dates from the combined datasets were used to create variables which estimate the periods of time between rapes. Two variables of the variables calculated from these dates were used as "dependent" variables: the average number of days between rapes (T_j) and the average number of rapes per month (λ_j). Because T_j and λ_j are redundant variables (λ is merely a function of the average number of days between rapes), the statistical results are the same regardless of which variable we use as the dependent variable. Therefore we will use T_j in the presentation of the data. This can easily be converted to monthly rates by the formula: $(1/T_j)*30.42$.

Missing Data. Some words of caution about the character of the data being used is in order. Ideally, our dataset would contain information for every single rape committed by the offenders and would have the exact dates of these offenses. This would make it possible to estimate T_j with absolute certainty for each of the j offenders and to determine whether these covary with other characteristics of the offender. Unfortunately, it is highly unlikely that the list of rapes for each offender present in the dataset is a complete list of all such rapes. In fact, authors who have interviewed offenders have often found that the rapists in their samples committed many, many more rapes than the number for which they had actually been caught (Warren, J.I., Hazelwood, R.R. and Reboussin, R. *Serial Rape: The Offender and His Rape Career*). Due to this missing information, the waiting times (T_j) in our data are likely to *overestimate* of the real time between rapes; in other words, the rapists in this dataset probably committed rapes more frequently than the data suggest. This should be kept in mind when

dictions regarding the occurrence of the next rape in an investigation are made.

It may seem as if the obvious overestimation of waiting time would render our predictions less. However, this is not the case. If the missing data are randomly distributed across rapists, relationships we find between other variables when predicting rates and career lengths should be in the "true" direction. For example, if we find that the "more violent" rapists tend to commit rapes at higher rates, this finding will be valid provided there is no difference in the number of "missing" rapes in the less violent group than there are in the "more" violent group.

However, if there *is* some systematic reason why there is more missing information for the types of rapists than others, our estimates of waiting time may be biased and misleading. We could easily speculate numerous reasons that certain rapists may have more missing data than others (rape victims of a certain race may report rapes less frequently, rapists that are extremely violent may have killed their victims and hidden the bodies, rapists who were willing to go further may never have been identified as the rapist in some of their rapes, rapists who choose strangers over acquaintances or vice versa may have had fewer rapes of their rapes reported, *etc.*) If the reason for missing data is related to both the dependent and the predictor variables, then relationship estimates will be biased and irrelevant. In the example above, it may be that victims of the more violent rapes are more likely to report their rapes to the police thus making it seem as if violent rapists commit more rapes and commit rapes at a higher rate when, perhaps, they don't. Unfortunately, there is no way to determine the amount of missing data given the variables present in the combined dataset. Therefore, it is important for those investigators who are familiar with rapist patterns and the actual collection of this data to use their judgement as to whether an individual variable is likely to be related to the extent of missing data or not.

Transformations. Many of the statistical problems encountered in analyses of mean waiting times stem from the fact that these data (as well as rates, event-wise waiting times, and careers) are not even approximately normally distributed. Figure 2.0a shows the distribution of 127 values of T_j . The distribution is heavily skewed to the left; outliers range far to the right. Most of these rapists have fairly short waiting times between rapes. The frequency of shorter waiting times is cut off at 0 days, of course, while the frequency of longer waiting times trails off gradually to extremely long waits ($T_j > 2000$ days). Regressions of this distribution would lead to invalid conclusions. Most obviously, parameter estimates would be extremely influenced by the few high values present and would lead to unreliable predictions.

One solution to the problem posed by the skewed distribution of waiting times is to transform the data. In the present case, the natural logarithm accomplishes the goal of creating a normal distribution from the skewed distribution (see Figure 2.0b) in the context of a relatively interpretable model. Although the transformation adds a step when it comes time to interpret the models and make predictions in "real" days, it is always possible to do so and the resulting interpretations will be as understandable as if we used the original, untransformed data.

2.1 Independent Variables

The analyses commenced with a review of variables in the combined offender-level dataset. Variables thought to be potentially related to offense rates were chosen for closer examination. Since the unit analysis was the offender, variables defined at the offense level were aggregated. Variables that had been dummy coded (1=No, 2=Yes, *i.e.*), were transformed into proportions.

to illustrate, the proportion of an offender's rapes where a gun was brought to the rape scene was created from the variables HGBR - HGBR20 and GUNBR - GUNBR20. Variables that had been coded as continuous were transformed into means: for example, the mean level of planning that went into the rape. These variables were used to characterize the rapist's overall style. Occasionally several different variables were combined to create a new aggregate variable. For example, the average level of "cruelty" was created by combining three dummy coded variables that reflected what we considered "cruel" treatment of the victim, and the number of these behaviors per rape was calculated (See Appendices A "Independent Variable Descriptions" and B "Aggregated Variable Calculations" for complete variable descriptions).

Eight categories of variables were examined: Geographical Distance between rapes, Degree of Victim Injury, Level of Planning, Race of Victim, Rapist "Clinical Type," "Psychological" variables, Offender Drug or Alcohol use, and a Miscellaneous group of situational and other factors. Numerous indicators were created for each category in an effort to increase our chances of discovering relationships if they did, indeed, exist.

Initially, all potential independent variables were tested as possible predictors of mean waiting time (T_j) in a bivariate ordinary least-squares regression. This procedure is used to determine if, all else being equal, there is a correlation between the predictor variable and the dependent measure of interest. Based on the results of the regressions, larger multivariate models were developed in an effort to predict as closely as possible from the information at hand the mean waiting time between rapes (T_j) or rate of offending (λ_j). Ordinarily, it is better to develop regression models based on an informed theory of the phenomenon at hand or previous results in the literature. Because data of this kind has not been available in the literature, and

because the task here is to create a practical model useful in actual rape investigation, we have relaxed these scientific standards and chosen methods more conducive to discovering unexpected relationships.

As noted, eight categories of predictor variables were examined: Geographical Distance between rapes, Degree of Victim Injury, Level of Planning, Race of Victim, Rapist "Clinical Type", "Psychological" variables, Offender Drug or Alcohol use, and a Miscellaneous group of situational and other factors. Our results are presented in that order.

2.1.1 Distance

Distance indicators posed a unique problem among the variables. Examining the set of average distances from the initial rape (AVGDIS1), an outlying value was found; when the outlier was deleted from the dataset, the next value became an outlier. The outlier values proved unduly influential in estimating the relationship between the predictor and dependent variable. The most practical solution to this problem was a transformation, in this case, the natural logarithm of the average distance. When natural logarithms are used on both the left-hand and right-hand side of the model, interpretation is complicated. To illustrate, for independent variables X and Y , the model is

$$\text{Ln}(T_j) = \alpha + \beta X_j + \gamma \text{Ln}(Y_j) + \eta_j$$

Solving the model for T_j ,

$$T_j = e^\alpha e^{\beta X_j} Y_j^\gamma e^{\eta_j} = \alpha e^{\beta X_j} Y_j^\gamma \eta_j$$

where $e \approx 2.718$ is the base of natural logarithms. Substituting the mean value of X into this

ation, the $T_j Y$ relationship is shown to be a Cobb-Douglas function (see A.C. Chang, *Fundamental Methods of Mathematical Economics*, pp. 416-418):

$$T_j = \alpha Y_j^\gamma \eta_j$$

ough formidable in appearance, this function has a relatively straightforward interpretation and is widely used in waiting time analyses.

Considering only the natural logarithm of average distance, the following regression equations were obtained:

$$T_j = 3.753795 + (.005836*AVGDIS1); R^2=.08578, p<.0080$$

$$T_j = 3.581531 + (.385064*LNAVGDIS); R^2=.18875, p<.0001$$

$$T_j = 3.644077 + (.024698*AVGDISX); R^2=.11009, p<.0026$$

$$T_j = 3.585564 + (.368414*LNAVDISX); R^2=.15091, p<.0004$$

Clearly, each indicator of distance was significantly and positively related to mean waiting time between offenses. There are a few possible interpretations of this finding. 1) It takes less time to travel around and find a victim if you stay in the same area; 2) Offenders who stay within the same area have a higher proportion of their rapes attributed to them because law enforcement recognizes their patterns and therefore *seem* to be committing rapes more frequently when they may not be; 3) There is some psychological reason that some offenders tend to stay in the same area and commit rapes more frequently and others tend to venture out and wait longer periods of time between rapes.

If the distance variables are coded in miles, terms for each logged mile increase in distance between any rape and the first rape, there would be a .368414 increase in logged average number

of days between rapes. Using the fourth indicator, LNAVDISX, the following predictions were made (from Appendix J):

| | Predicted | | |
|----------|-----------|--------------|--------------|
| LNAVDISX | Value | Value (days) | Waiting Time |
| Minimum | -2.990 | 2.484 | 12 |
| Median | 0.661 | 3.829086 | 46 |
| Mean | 0.628 | 3.318693 | 28 |
| Maximum | 4.930 | 5.40185 | 222 |

2.1.2 Victim Injury

Victim injury variables were examined in an attempt to discover whether offenders who tend to physically injure their victims, or those who physically injure their victims more severely, differ from other offenders in their waiting time between offenses. First, the variables AVGINJ, PCMODINJ, PCSEVINJ, and PERCBFCE were calculated based on the original data. These variables are all averages or percentages and are therefore called "continuous" variables. However, most of these variables have skewed distributions and it was important to attempt to correct for this in case outlier values were responsible for distortions in the results. Therefore, dummy-coded variables were created: INJDUM, INJURE1, INJURE2, INJURE3 AND BLUNT (See appendices A and B for variable descriptions and calculations).

BLUNT (whether or not an offender used moderate blunt force in any rape) was significantly related to average Waiting Time and the relationships between AVGINJ (average degree of victim injury), PERCBFCE (percentage of rapes where moderate or more serious blunt

ce was used, PCMODINJ (percentage of rapes where moderate or more serious injury was inflicted) and average Waiting Time all approached statistical significance (see Appendix C for results). In each case the injury variable was positively related such that offenders who injured their victims, and those who injured them more severely, tended to wait longer between rapes than those who did not.

BLUNT was related to waiting time such that offenders who had used moderate blunt force in any rape (moderate is described as repeated, painful striking), were predicted to wait, on average, 87 days between rapes while offenders who had not done so were predicted to wait, on average, 49 days between rapes. AVGINJ was also marginally related to average Waiting Time between rapes. This relationship was also positive and the following predictions can be made from the resulting regression equation:

| Level of Injury | Predicted | |
|----------------------------|-------------|--------------|
| | Natural Log | Waiting Time |
| No Physical Injury | 3.849029 | 47 days |
| Scrapes and Bruises | 4.418152 | 83 days |
| Medical Attention Required | 4.987275 | 147 days |
| Life Threatening Injury | 5.556398 | 259 days |

The probability that this relationship was not due to chance is approximately 97%. Caution could be taken when interpreting the predictions for the "Life Threatening Injury" category as one of the rapists in the combined dataset had an Average Injury score of more than 3.25; predictions beyond the range of one's data is ill-advised.

PERCBFCE was marginally related to the average Waiting Time as well. It would be

predicted that for each percent increase in PERCBFCE we would predict a one day increase in the average number of days between rapes. PCMODINJ was also marginally related to mean waiting time with the following resulting predictions:

| PCMODINJ | Predicted | |
|-------------|-------------|--------------|
| | Natural Log | Waiting Time |
| 10 Percent | 4.139599 | 63 days |
| 20 Percent | 4.272799 | 72 days |
| 30 Percent | 4.405999 | 82 days |
| 40 Percent | 4.539199 | 94 days |
| 50 Percent | 4.672399 | 107 days |
| 60 Percent | 4.805599 | 122 days |
| 70 Percent | 4.938799 | 140 days |
| 80 Percent | 5.071999 | 160 days |
| 90 Percent | 5.205199 | 182 days |
| 100 Percent | 5.338399 | 208 days |

Because the distributions of AVGINJ, PERCBFCE, and PCMODINJ were highly skewed, it is possible that the findings for these variables are unduly influenced by outlier values. However, since the dummy-coded blunt variable, which had 75 cases in the no moderate blunt force group and 51 cases in the moderate blunt force used at least once groups, was significantly related to mean waiting time, it is likely that some real relationship exists between these variables.

If increased violence leads to increased reporting, we would expect the opposite relationship to result because we would expect law enforcement to be notified about such an offender. Because this relationship is positive, there may be a psychological reason that increased

brutality and a longer waiting time between rapes go together. Perhaps the offender is harboring some hostility and does so to the point where he is unable to control his violence; perhaps the offender is afraid of being caught because of his brutality or is remorseful about his brutality and waits a longer period to commit his next offense. Perhaps there is a mediating factor such as distance, where the offender commits rapes just as often but must travel further away to avoid having all his rapes attributed to him.

2.1.3 Evidence of Planning

Planning variables were examined in an attempt to discover whether offenders who go to greater lengths to plan their rapes differ from those who do not in their waiting time between offenses. First, variables AVGPLAN, AVGSELEC, PERCBIND and PRCGUNBR were calculated based on the original data. These variables are all "continuous" variables. PERCBIND and PRCGUNBR have skewed distributions and were also recoded as dummy variables ANYBIND and ANYGUN (See appendices A and B for variable descriptions and calculations).

The simple regression results suggest that the Waiting Time between rapes was not related to whether or not an offender put more effort into planning a rape or not—no matter how planning was measured. If planning really is related to Waiting Time, the variables as coded were not sensitive enough to detect this.

2.1.4 Victim Race

Another interesting question is whether the race of the rapist influences the rate at which he commits his offenses. Because the combined dataset does not contain information on the rapist, we had to rely on victim information as a proxy. Fortunately, it is fairly well documented that

rapists tend to choose victims of their own race. So the percentage of victims who were white, black, Hispanic, or Asian can be used as a weak proxy for the offender's probable race. Dummy variables were also created to see if they worked better as predictors of offense rate.

The variables PERCWHIT, PERCBLCK, PERCHISP AND PERCASN (percentage of victims who were white, black, hispanic or asian) were calculated based on the original data. These variables were also dummy-coded as ANYWHIT, ANYBLACK, ANYHISP, ANYASN (Were any victims white, black, hispanic, or asian–yes or no), AND BLACTHRD (Were more than 1/3 of the victims black–yes or no).

The only two variables which had even marginally significant relationships with Waiting Time were PERCBLCK (percentage of victims who were black) and ANYBLACK (whether that offender had raped any black victims or not). Both of these variables were negatively related to Waiting Time such that offenders who raped any black offenders on average waited only 38 days between rapes while offenders who raped no black victims waited 69 days.

2.1.5 Clinical Type

Prior research on the National Academy dataset categorized rapists into "Clinical Types." This variable, denoted "CLINTYPE" was not available in the combined dataset, however, so findings regarding this variable are limited. The CLINTYPE variable has four categories: 1) power reassurance rapist, 2) power assertive rapist, 3) anger retaliatory rapist, and 4) anger excitation rapist. These four categories were dummy-coded., with CLINTYP1, CLINTYP2, CLINTYP3, and CLINTYP4 compared to the rest of the offenders. The second set of variables, CLIN12, CLIN13, CLIN14, CLIN23, CLIN24 AND CLIN34, compared each group to each of the other groups individually. Bivariate regression results showed no differences between the

nical types in mean waiting time between offenses.

2.1.6 Psychological Variables

The next group, loosely referred to as "Psychological" variables, assumes that offenders with certain psychological tendencies or characteristics differ from other serial rapists in the rate of offending. The continuous variables in this group include: PERCHOST (percentage of rapes where hostility to the victim was a significant theme), PERCHARM (percentage of the offender's rapes where harming the victim appeared to "turn the rapist on", AVGCRUEL (the average number of acts arbitrarily defined as "cruel" on a 0-3 scale), PERCDYS (the percentage of rapes where the rapist apparently had some sort of sexual dysfunction), and PERCLONG (the percentage of rapes which lasted longer than 90 minutes) (see Appendices A and B for more detail). Each of these variables was dummy coded to eliminate the influence of outliers. The dummy psychological variables were: HOSTILE (whether the rapist's hostility toward the victim was a significant theme in any of his rapes or not), SADIST (whether the rapist was apparently turned on by harming the victim in any of his rapes or not), DUMLONG (whether any of the rapist's rapes endured longer than 90 minutes or not), ANYDYS (whether there was any evidence of sexual dysfunction in any of the rapes or not) and ANYCRUEL (whether the rapist committed any act of cruelty in any rape) (See appendices A and B for further detail).

Bivariate regression results showed that PERCHARM and SADIST (indicators of the same construct) were both statistically significantly related to mean waiting time. PERCDYS, and DUMLONG were both marginally related to mean waiting time. PERCHARM and SADIST were both positively related in that offenders who appeared to be turned on by harming the victim tended to wait longer periods between their rapes. Offenders who were turned on by

harming the victim in any of their rapes waited, on average, 104 days between rapes while rapists who did not waited 53 days.

Interpreting this relationship, we encounter a similar phenomenon to that encountered with the injury variables. We would expect that sadistic rapes would have a higher reporting rate and therefore the relationship to mean waiting time would be negative due to more reporting. However, we find that in this data sadistic rapists tend to wait longer between rapes. This may tell us something about the actual behavior of sadistic rapists. As with the injury variables, it may be that offenders who commit sadistic rapes are waiting longer between rapes, storing up higher levels of hostility and violence which then are released when they commit a rape. It could also be that they wait longer because they fear being caught or are more remorseful.

PERCDYS was marginally related to Waiting Time such that offenders who experienced more sexual dysfunction tended to wait longer between rapes. However, the fact that when this variable was recoded as a dummy-variable, most of this relationship was lost ($p > .2344$) it is likely that much of the strength in the relationship between PERCDYS and waiting time is due to outliers in this unusually distributed variable.

PERCLONG on the other hand, was not related to mean waiting time. After recoding into categories, however, there was a marginal relationship between committing long rapes and waiting longer periods of time between rapes. The strength of this relationship was not particularly convincing ($p > .10$) however it is interesting to note that the relationship was in the same unexpected direction as that for victim injury and sadistic tendencies lending support to a hypothesis that rapists who are more brutal or sadistic wait longer between rapes.

2.1.7 Offender Use of Alcohol and Drugs

Four variables were examined to determine whether or not offender use of alcohol or drugs was related to offense rate. PERCDRINK (percentage of rapes in which offender had been drinking) and PERCDRUG (percentage of rapes in which offender had been using drugs) were continuously coded; DRUNK and ANYDRUG were dummy coded to distinguish offenders who used alcohol or drugs in any rapes versus those who had not.

The only relationship of note was between mean waiting time and DRUNK which was marginally significant. Offenders who appeared to have been drinking in one rape or more had longer waiting times (51 days versus 86). It is not clear why offenders who use alcohol would wait a longer time between rapes than those who do not. It is possible that drinking and rape are separate components of binge type behavior which occurs less frequently than typical serial rapes.

2.1.8 Situational/Miscellaneous Variables

Variables in this category are related to whether a rape was committed indoor versus outdoor and what relationship the offender had to the rape victim. Seven indicators of these constructs were created. The four continuous indicators were PERCOUT (percentage of rapes which took place outdoors), PERCACQ (percentage of rape victims who were categorized as "acquaintances" of the rapist), PRCSTRGR (percentage of rape victims who were categorized as complete strangers to rapist), and PRCSTRG2 (percentage of rape victims who were categorized as either complete strangers or acquaintances who had only one encounter with rapist prior to offense). From these, three dummy variables were recoded: ACQVIC (whether any of the rape victims was categorized as an acquaintance or not), ALLSTRGR (whether all the rape victims were strangers or if even one rape victim was an acquaintance, relative or friend), and

NONEOUT (distinguishing between rapists who committed all rapes indoors versus those who committed even one rape outdoors).

The findings indicate that PERCACQ, PRCSTRGR, PRCSTRG2, ACQVIC, and ALLSTRGR were all significantly related to mean waiting time. Because the coding of PERCACQ and ACQVIC suffer from some logical problems in interpretation (comparing acquaintances to a group of all others which includes strangers, relatives and friends), these results will be ignored.

All three variables used as indicators of the extent to which an offender chose "strangers" as victims were strongly, significantly related to offense rate. All had negative relationships such that offenders who chose strangers as their victims appeared to have shorter mean waiting times. For example, rapists who chose victims who were all strangers (or had been encountered only once prior to the rape) waited on average 93 days between rapes. Rapists who chose even one victim who was an acquaintance, friend, or relative waited on average 50 days between rapes. The interpretation of this finding is somewhat difficult. It could indicate a psychological phenomenon where offenders who are more typical of the "serial rapist" profile, choosing strangers as victims, tend to wait less time between rapes. However, it could be simply that data for offenders who choose a higher proportion of strangers as victims is more complete, that victims are more likely to report stranger rapes and as a result it merely appears that these rapists are committing rapes more frequently.

2.1.9 Summary of Bivariate Regressions

In summary, it appears that while Planning, Clinical Type, and site (indoor vs. outdoor) have no relationship to mean waiting time between rapes there is a strong and consistent positive

ationship between waiting time and a group of variables that measure "brutality"—degree of victim injury, sadism, and perhaps rape length. A few other variables appear to be related to mean waiting time (distance between rapes and extent to which offender chooses strangers as victims) but the relationships may be mathematical artifacts. Finally, there were several relationships discovered (ratio of black to non-black victims, alcohol consumption) for which an interpretation of the finding is difficult to make.

Note on Bivariate Regressions and Variables Overall. We made the point earlier that missing data may be a problem in this dataset. We were referring to the fact that we may not know about all the rapes committed by the rapists in these data. There is another type of missing data which will also influence the quality of the predictions we are able to make: uncollected data. Two variables that were not present in the current dataset were the offender's race and the offender's approximate age. These variables should be obtainable from victim statements and may very well be highly related to the Waiting Time and Rate an offender commits rapes. Without these variables it is likely that our current model will not explain as much variance in rates and waiting times as it would with them.

2.2 Multiple Regressions

While bivariate regressions can give some indication of which indicators are most likely to predict the dependent variable, the simplicity of bivariate regression often obscures more complex findings. In particular, when a variable is related to more than one construct, the variable will sometimes appear to be related to the dependent variable even though the implied construct does not. For example, our bivariate regression results suggest that several measures of "brutality"—degree of victim injury, sadism, and length of rape—may be related to mean waiting

time between rapes. It could be that all of these indicators really measure another construct like "brutality" and it is that construct that is related to waiting time. In such cases, including several of these indicators in a multiple regression model helps us decide whether our measures make any individual contribution to our predictions.

2.2.1 Models

Using the results of the bivariate regression analyses, we attempted to build a larger, comprehensive model that would account for the largest significant proportion of variance in mean waiting time. The following methods for were used to choose variables for the larger models:

Model 1. Include all bivariate relationships with $t > 1.0$

Model 2. Include variable representing each concept (eliminating redundancy) regardless of bivariate regression results.

Model 3. Include one variable representing each concept (eliminating redundancy) regardless of bivariate regression results but favoring continuously coded variables when feasible.

Model 4. Include one variable representing each indicator that did well in bivariate regression results.

Variables were excluded from these four models by a backward elimination algorithm that removes variables one by one until the resulting model contains only variables that meet a specified statistical criterion. We used the criterion of a partial t-value greater than or equal to 1.0. See Appendix L for complete modeling results.

In choosing a "best" model, several criteria must be considered, including 1) predictive ability; 2) robustness to outliers; 3) minimum redundancy; 4) parsimony; and 5) practical ease of use. Of the four models, none did well in explaining the variance in the logged mean waiting time between rapes. Although *Model 1* explained the largest proportion of variance (54%), it had a large number of variables (16), a large number of redundant variables (7), and a problem with outliers. With only eight variables, *Model 2* was much more parsimonious and, because most of its variables were non-redundant and dummy-coded, it was relatively resistant to outliers and easy to use. Unfortunately, *Model 2* explained only 34% of the variance in logged mean waiting times. *Model 3* had thirteen non-redundant variables but, since most were continuous, had a potential outlier problem. Nevertheless, *Model 3* explained approximately 50% of the variance in logged mean waiting times and used much of the available information. *Model 4* was the most parsimonious with only six variables. The six included continuous variables, however, which can be heavily influenced by outliers. *Model 4* explained only 32% of the variance.

3.0 Analysis of Time to Next Event

We now step back one level of aggregation to consider the set of $N=708$ waiting times to next rape accrued by the 127 offenders in the combined dataset. The mean waiting times analyzed in sections 2.0-2.3 are given by

$$T_j = \sum_{i=1}^{N-1} T_{ji}$$

the j th offender. The j th offender's individual waiting times (T_{ji}) are now presumed to be a function of the j th offender's characteristics—in particular, whether he offends at a high, medium, or low rate—and characteristics of the i -1st event. Controlling for the offender's natural rate of

offending, *i.e.*, is the nature of one rape related to the waiting rape to the next? If so, what specific characteristics of a rape are associated with increases or decreases in waiting time to the next rape?

Figure 3.0 Here

Like the mean waiting times (T_j) analyzed in sections 2.0-2.3, the times to the next rape (T_{ji}) are badly skewed. A natural logarithm transformation once again produces a reasonable approximation to Normal, however. Figures 3.0a and 3.0b show the distributions of T_{ji} and $\text{Ln}(T_{ji})$ for $N=708$ cases. Since these histograms are *unweighted*, offenders with long careers (and these offenders tend to have slightly higher than average rates of activity) are disproportionately represented. To avoid the associated interpretational problems, our analyses are based on data *weighted* by the inverse number of rapes committed by an offender. In fact, our analyses were replicated under several weighting regimes with little change in substantive conclusions. Overall, *we find little evidence to suggest that the j th offender's waiting times are influenced by anything other than the j th offender's natural rate of activity.*

3.1 Independent Variables

The independent variables (or predictors) in these analyses are not characteristics of the offender *per se* but, rather, characteristics of the event. Characteristics of the offender and his rapes are confounded to some extent, of course. A "brutal" offender's rapes are more likely to result in injury, *e.g.* Some characteristics of the event appear to vary within each offender's record, however, and this gave us some hope that covariates of the T_{ji} could be found.

Figure 3.1 Here

To control for the j th offender's natural rate of activity, each bivariate model included the natural logarithm of T_j on the right-hand side. Each model then was of the form

$$T_{ji} = \alpha T_j^\gamma e^{\beta X_i} \eta_i$$

rationale for including T_j in each regression is illustrated by the scatter plot shown in Figure 3.1. Approximately 31% of the variance in T_{ji} is explained by the j th offender's mean rate of activity. From another perspective, 69% of the variance in T_{ji} remains to be explained by other factors, including, hopefully, characteristics of the rape.

3.1.1 Degree of Injury

Only one measure of injury was available for analysis in the sense that it was defined for all of the 708 events with some independence across offenders. DVVINJ is a five-point scale ranging from one (1=no injury) to five (5=death of victim). The regression of T_{ji} on DVVINJ was estimated as

$$T_{ji} = .050079 + (.865009 * T_j) + (.010526 * DVVINJ); R^2 = .41657, p < .9610$$

effect of DVVINJ on T_{ji} given by the exponentiated regression weight. In this case,

$$e^{.010526} \approx 1.01058; \text{ so } T_{ji} = 1.01058 * T_{j+1}$$

each unit change in DVVINJ, time to the next rape increases by one percent. This trivial percentage of change is statistically insignificant, of course. Recoding DVVINJ as a set of dummy

variables gives similar results. The regression of T_{ji} on DVVINJ coded in two categories (0=no injury, 1=some injury), *e.g.*, was estimated as,

$$T_{ji} = .055628 + (.853867*T_j) + (.030004*DVVINJ); R^2=.41663, p<.9230$$

Following a rape that results in injury, time to the next rape increases by slightly more than three percent—a trivially small and statistically insignificant increase.

3.1.2 Offender's Clinical Behavior

This research has paid much attention to manifestations of the offender's psychological make-up. Just as each offender can be classified as one of four "clinical types," *e.g.*, each event can be classified as a Power-Reassurance (CLINTYPE=1), a Power-Assertive (CLINTYPE=2), an Anger-Retaliatory (CLINTYPE=3), or an Anger-Excitation (CLINTYPE=4) rape. These event-types are uncorrelated with time to next rape, however. The only defensible model uses dummy variables for the Power-Reassurance and Power-Assertive types. The regression of T_{ji} on these variables was estimated as,

$$T_{ji} = .306694 + (.855821*T_j) - (.313366*TYPE1) - (.214892*TYPE2); R^2=.41891, p<.6791$$

Compared to either Anger-type rape, time to the next rape following a Power-Reassurance rape is 73% less; the corresponding reduction following a Power-Assertive rape is 81%. Although these reductions are non-trivial, they are statistically insignificant. This reflects not only a high degree of homogeneity within each rapist's career—Power-Assertive rapists tend to commit Power-Assertive rapes, *i.e.*—but, also, the heterogeneity in T_{ji} .

Another variable that is representative of a class of variables that we have referred to as "psychological," is the apparent degree of sexual excitement derived from harming the victim. The variable HARM is dummy-coded for this characteristic of a rape. The regression of T_{ji} on

HARM was estimated as:

$$T_{ji} = -.319749 + (.854373 * T_j) + (.005836 * \text{HARM}); R^2 = .42006, p < .5137$$

are again, the effect is trivially small (.5%) and statistically insignificant. Other variables in this analysis were analyzed and found to have no significant effect on time to the next rape.

3.1.3 Offender's Career Trajectory

One of the most interesting questions of this section concerns the offender's career trend or trajectory. Does the time to next rape change systematically during the offender's career? This question can be answered most directly by regressing T_{ji} on T_j and an event count variable, t_{ji} . Here $t_{ji} = 1, 2, \dots, k$ for the j th offender's first, second, and k th rapes, this regression was estimated as

$$T_{ji} = .531108 + (.857543 * T_j) - (.094839 * t_{ji}); R^2 = .43677, p < .1130$$

The exponentiated weight of t_{ji} is interpreted as a multiplicative trend. Since

$$e^{-.094839} \approx .91$$

the j th offender's time to next rape decreases by roughly nine percent from rape to rape. On average then, the 127 rapists in our sample "speed up" as their careers grow longer.

Figure 3.1.3 Here

Unfortunately, the estimated trend is *not* statistically significant—although it comes closer to significance than any other variable we have examined in this section. Figure 3.1.3 further illuminates the trend phenomenon. When standard Normal predicted trends are arrayed in a histogram, it appears that the relationship may be a function of outlying "types." Although the

distribution of trends is skewed to the negative side, consistent with the estimated model, there are disproportionately many significantly positive ($t \geq 3.00$, *e.g.*) and negative ($t \leq -3.00$, *e.g.*) trends. When these outlying cases are removed, the estimated trend is insignificant. This may suggest that *some* offenders may be increasers or decreasers. The outlying cases have no obvious common characteristics, however.

Since many values of T_{ji} are greater than one year, career trends may be confounded with seasonal patterns of offending. To test this hypothesis, rapes were grouped into three trimesters, February to May, June to September, and October to January. The regression weights for the dummy-coded trimesters were estimated as -.106105, -.066284, and .078262 respectively with $p < .8512$. When t_{ji} is added to the model, its estimated regression weight is almost identical to the weight estimated for the model without the seasonal trimesters.

The months were grouped into the three trimesters on the basis of ambient temperature. However, other trimester configurations lead to the same conclusion and, indeed, when dummy-coded variables for the twelve months are entered, we find no evidence of confounding. Otherwise, the fact that time to the next rape does *not* vary by season is an interesting finding that may be difficult to explain. Nevertheless, there are no discernable seasonal effects in data, however.

3.1.4 Weapons

The use of weapons varies from rape to rape for some (but obviously, not all) of these 127 offenders. The use of a weapon in one rape seems to have no effect on the time to the next rape, however. For interpretability, weapon variables were dummy-coded. Regressions of T_{ji} on weapons *brought* to the scene (*vs.* used at the scene) by the offender were estimated as

| Weapon Brought | Parameter Estimate | Percent Effect on T_{ji} | Significance |
|-------------------------|---------------------------|--|---------------------|
| Blunt Instrument | 0.973298 | 264.67 | .5595 |
| Gun | -.214922 | 80.66 | .6219 |
| Knife | 0.027854 | 102.82 | .9334 |
| Ligature | 1.333805 | 379.54 | .5483 |
| Rifle | -.323223 | 72.38 | .8380 |
| Screwdriver | -.384299 | 68.09 | .7930 |
| Any Weapon | .039334 | 104.01 | .9475 |

gressions of T_{ji} on weapons used (vs. brought to the scene) by the offender were estimated as

| Weapon Used | Parameter Estimate | Percent Effect on T_{ji} | Significance |
|-------------------------|---------------------------|--|---------------------|
| Blunt Instrument | .393627 | 148.23 | .7728 |
| Gun | -.223987 | 79.93 | .6088 |
| Knife | -.019040 | 98.11 | .9541 |
| Ligature | .466274 | 159.40 | .6374 |
| Rifle | -.050856 | 95.04 | .9702 |
| Screwdriver | -.707938 | 49.26 | .6374 |
| Any Weapon | -.030973 | 96.95 | .9239 |

ie to outliers and small numbers, weapon-specific effect estimates are unstable due. When the offender brings a blunt instrument to the scene, *e.g.*, time to the next rape increases by more in 260 percent; this increase is statistically insignificant, however. Considering any weapon whatsoever, the effect on time to the next rape are trivially small–1.04 times greater for bringing a

weapon and 0.96 times smaller for using a weapon—and statistically insignificant.

3.1.5 Planning

In sections 2.0-2.2, we used the fact that a weapon was brought to scene as an indicator of planning. Failure to find any significant relationship between T_{ji} and bringing a weapon to the scene suggests that the relative premeditation of a rape has no effect on waiting time. When other indicators of planning are considered, this conclusion is supported. The regression of T_{ji} on RESNO, which indicates whether the offender used restraints to tie up the victim (1=yes, 0=no), was estimated as

$$T_{ji} = .099914 + (.857226*T_j) - (.143242*RESNO); R^2=.41205, p<.6633$$

The regression of T_{ji} on SELEC, which indicates whether the offender indicated that he had "selected" this particular victim (1=yes, 0=no), was estimated as

$$T_{ji} = .222954 + (.851966*T_j) - (.177100*SELEC); R^2=.41810, p<.6635$$

Since both RESNO and SELEC were dummy-coded, they can be exponentiated for interpretation. Neither is statistically significant, however.

3.1.6 Demeanor

In some respects, the j th offender's demeanor varies from rape to rape. Sexual dysfunction, as measured by SDYSF1 through SDYSF5, is not constant across the offender's career. Since these five indicators are relatively rare events, a general SDYSF variable was defined with dummy codes (1=yes, 0=no) to indicate any sexual dysfunction. The regression of T_{ji} on SDYSF was estimated as

$$T_{ji} = .094576 + (.854213*T_j) - (.015382*SDYSF); R^2=.41657, p<.9678$$

Dysfunction in one rape has no effect on the offender's waiting time. In addition to dysfunction,

offender's verbal and nonverbal behavior varies across his career. Five verbal behavior variables (SENSIT, HOSTWM, HOSTGN, REASSR and APOLG) and two nonverbal behavior variables were dummy-coded (1=yes, 0=no). Regressions of T_{ji} on these variables were estimated

| Verbal or Nonverbal Behaviors | Parameter Estimate | Percent Effect on T_{ji} | Significance |
|-------------------------------|--------------------|----------------------------|--------------|
| SENSIT | .091973 | 109.63 | .8751 |
| HOSTWM | -.105972 | 89.94 | .7805 |
| HOSTGN | -.254750 | 77.51 | .7811 |
| REASSR | .093952 | 109.85 | .8713 |
| APOLG | -.251887 | 77.73 | .6848 |
| MACHO | .145470 | 115.66 | .7296 |
| HUMIL | -.115022 | 89.13 | .7478 |

shown, none of these indicators has any statistically significant effect on T_{ji} but they are not equal in that respect. These variables are presumably filtered through the victim's perception recall mechanisms, however, and this may explain why these variables (vs. a more objective variable such as sexual dysfunction) are more variant from rape to rape.

Finally, the offender's drug and alcohol use may be regarded either as an element of demeanor or as a cause of demeanor. Neither variable has any significant effect on the offender's sentencing time, however. The estimated effects for drug use (measured by DRUG) and alcohol use (measured by DRINK) are .024403 and .264030 respectively with significance levels of .9782 and .0000. Given these results, DRUG and DRINK were combined into a dummy variable coded for the presence of either drugs or alcohol (EITHER, 1=yes, 0=no). The regression of T_{ji} on the combined

variable was estimated as

$$T_{ji} = .011294 + (.856715 * T_j) - (.294697 * \text{EITHER}); R^2 = .42052, p < .4860$$

The effect offender's waiting time is insignificant.

3.1.7 Crime Scene Variables

The scene of the crime presumably reflects an interaction between the situation, the offender's method of operation, the offender's psychological make-up, including his propensity to take risks and his commitment to a career. Three related variables were extensively explored in an attempt to discover relationships between variance in site and waiting. CONSIT, a variable that indicates the site of contact, was dummy coded for indoor (=1, outdoor=0) initial contacts; RAPSIT, a variable that indicates the eventual crime scene, was dummy coded for victim's home (=1, other place=0); and ENC, a variable that indicates the offender's method of entry to the scene, was dummy coded for break-in (=1, other methods=0). A related concept is captured by the variable RELVIC which indicates whether the rapist knew his victim; RELVIC was dummy coded for stranger (=1; other=0). Regressions of the variables on T_{ji} were estimated as

| Variable | Parameter Estimate | Percent Effect on T_{ji} | Significance |
|----------------------|--------------------|----------------------------|--------------|
| Indoor Contact | -.090474 | 91.35 | .7903 |
| Victim's Home | .015324 | 101.54 | .9614 |
| Break-in | -.056080 | 94.55 | .8573 |
| Victim is a Stranger | .030196 | 103.06 | .9536 |

None of these variables has any substantively or statistically significant effect on T_{ji} . It appears that the presumed interaction between the situation, methods, and psychological make-up cannot

plain the variance in waiting times across the offender's career.

3.2 Summary

The extensive analyses of the variance in waiting times across the j th offender's career and not one variable that could predict, to a criterion of nominal statistical significance, the time next rape. This is the most important aspect of the phenomenon and, in that sense, the results are most disappointing. Before interpreting these results to mean that the distribution of T_{ji} is categorically "random," however, we should consider the statistical properties of the models on which the results are based. The basic model can be expressed in an additive form,

$$T_{ji} = \alpha + \gamma \ln(T_j) + \beta X_i + \eta_i$$

or in a multiplicative form,

$$T_{ji} = \alpha T_j^\gamma e^{\beta X_i} \eta_i$$

Whichever form is used, however, the model parameters were estimated in a single equation and this method is less than optimum. A more efficient method of estimation is to array the variables in two hierarchical equations. Details of these methods are developed in *Hierarchical Linear Models* (A.S. Bryk and S.W. Raudenbush, Sage, 1993: Chapter 6). Our attempts to estimate the regressions of T_{ji} with multiple-equation hierarchical models suggests that the present combined sample of rapists is inadequate for these models—both in terms of quantity and quality of data. For a number of reasons, the most widely used software (*HLM2/3*) fails to converge on a set of acceptable parameter estimates within a reasonable number of iterations. With an expanded set of data that included more long careers, we believe that these models could be estimated. Given the

importance of the motivating questions and the value of the results, we strongly recommend that data collection continue until the career sample is adequate.

4.0 Analysis of Career Duration

In this section we attempt to build models of career length of serial rapists. We proceed as we did in Section 2.0 and refer the reader back to that section for preliminary discussions. If the j th offender's career begins with an initial offense at time t_0 , then the first waiting time is

$$T_{j1} = t_1 - t_0$$

The career of N offenses ends arbitrarily at t_N —although the apprehension of this offender would necessarily occur at a later point—and the duration is thus

$$D_j = \sum_{i=1}^{N-1} T_{ji}$$

In many respects, the distribution of D_j is more problematic than the distributions of mean waiting times (T_j) and times to next event (T_{ji}). The original measure of D_j was the number of days from the first rape until the last rape. This was transformed into the natural logarithm in order to make the distribution compatible with statistical assumptions of regression. As with the waiting time, unless otherwise specified, the term "career length" will henceforth refer to the natural logarithm of the number of days from first to last rape; *i.e.*, $\text{Ln}(D_j)$.

Similarly, some words of caution about the interpretation of the results is in order.

Because the rapists in this dataset were all caught, the end of the career should not be mistakenly interpreted as the last rape the offender chose to commit. If we discover that rapists who rape

are often have shorter careers, it should not be assumed this is because they tire out earlier and stop committing more rapes; it is more likely that they are caught sooner. For other reasons, this same *caveat* applies to the "first" rape of a career.

Another limitation of using career length as a dependent variable is that rapists who wait longer times between rapes will, by definition, have longer careers. A longer career length in this sense does not mean that the offender necessarily committed more rapes (although one suspects there is missing data if these waiting times are very long).

4.1 Independent Variables

As with the mean waiting time analysis in section 2.0-2.2, we start with bivariate regression analyses using each independent "predictor" variable on the natural log of the career length. Then we attempt to build models from this information to help predict career length. See section 2.0-2.1 for a discussion of problems of missing data. A summary of all bivariate regression results is found in Appendix D. Unlike the analyses of mean waiting time, however, there are two available covariates that are of great use in predicting career length: mean waiting time and total rapes. As we discuss later, a model predicting the natural log of career length using mean waiting time and total rapes alone accounts for 99.8% of the variance. Therefore, the utility of using additional covariates may be minimal. See section 2, and Appendices A and B for full descriptions of predictor variables as these descriptions will not be repeated here.

4.1.1 Distance

It appears from the simple regression results that mean distance between each rape and the first rape is positively related to career length; offenders who travel greater distances appear to have longer careers. Using the predictions based on the natural log of the mean distance, we

would expect that offenders who had the minimum mean distance between rapes (approximately .05 miles) would have a career only 35 days long. Offenders with mean distances around the median or mean value (1.94 and 1.87 miles respectively) would have careers approximately 138 or 136 days long. Finally, offenders with mean distances around the maximum (approximately 138 miles) were predicted to have career lengths of approximately 688 days. One important factor that is missing here, preventing us from interpreting these results, is the total number of rapes committed. The dataset included rapists who committed only 1, 2, or 3 rapes as serial rapists. Therefore it is probable that not only did these rapists commit these rapes within a small geographical distance but committed them within a short period of time as well. Although it appears that distance is related to career length, it is likely that at least some of this relationship could be accounted for if total number of rapes was included as a covariate.

4.1.2 Victim Injury

Of the nine Victim Injury indicators, four appear to be related to the career length of an offender: AVGINJ, INJDUM, INJURE1, and BLUNT. All of these variables were *positively* related to career length such that offenders who tend to use more blunt force or injure victims have *longer* careers than those who do not. A number of explanations for this fairly strong finding are possible. If the interpretation of the career length variable that it is merely a measure of when an offender gets caught were correct, we would expect the opposite result since, presumably, more law enforcement effort is typically lodged against more brutal offenders. Therefore, we do not think these variables are inadvertently measuring enforcement.

Or the relationship could be due to the high correlation between career length and mean waiting time and may disappear if mean waiting time (T_j) were added to the model. As it turns

it, however, when mean waiting time is added as a covariate, the relationship between career length and AVGINJ virtually disappears while the relationships with INJDUM, INJURE1 and BLUNT all remain positive and significant. It is also possible that offenders who injure their victims are more likely to have a higher total number of rapes; the career length relationship could then be an artifact of that relationship. When the natural log of total rapes is added to the model, INJDUM remains marginally significant, BLUNT remains statistically significant and INJDUM and INJURE1 are no longer related to career length. If both mean waiting time and total rapes are added to the model, AVGINJ, INJDUM and BLUNT are no longer related to career length but INJURE1 remains statistically significant.

Finally, it could be that more brutal offenders who are more committed to a serial rape lifestyle and are thus able to avoid detection and prosecution better than other rapists. There are no variables in the combined dataset that could be used to test this hypothesis.

4.1.3 Evidence of Planning

AVGPLAN and AVGSELEC were both significantly positively related to career length and ANYBIND was marginally significantly related. All of these variables are strong variables and have no problems with outliers or skewing. The finding can be interpreted to indicate that offenders who put more effort into planning a rape or selecting a victim tend to have longer career lengths than those who do not. Planning was completely unrelated to mean waiting time and therefore it is unlikely that the several significant and marginally significant relationships discovered here are an artifact of increased waiting times between rapes. Extent of planning was coded in the original data on a scale of 1 to 5, 1 indicating the least amount of planning (spur of the moment) and 5 indicating extensive planning. Rapists who, on average committed spur of the

moment rapes had an average career length of 61 days; those who fell around the median in planning had approximately 210 day careers and those who planned extensively had 726 day careers. This relationship is probably not an artifact of mean waiting time because these variables were not related to mean waiting time (and in fact when mean waiting time is added as a covariate to the model, AVGPLAN, AVGSELEC and ANYBIND all remain statistically significant). However it could be an artifact of the total number of rapes. Support for this contention is raised when we add the natural log of total rapes to the model as a covariate and AVGPLAN and ANYBIND are no longer related to career length. Interestingly, however, when both mean waiting time and total rapes are added to the model, AVGPLAN, AVGSELEC and ANYBIND are still significantly related to career length. It is possible that the relationship between planning and career length is due to the possibility that offenders who put more effort into planning are thus able to avoid apprehension and go on longer in their rape careers.

AVGSELEC, which measures the offender's tendency to select victims, had similar results which could be interpreted analogously. Predictions for the minimum, median and maximum values of AVGSELEC were 104 days, 241 days and 560 days respectively, indicating that those offenders who more carefully selected their victims had longer rape careers than those who did not.

Finally, the variable ANYBIND, which groups offenders into two groups (those who bound at least one victim and those who bound none of their victims), was also related to career length (270 days vs. 167 days). This variable was meant as an indicator of planning and if AVGPLAN was included as a covariate its relationship might fall to the wayside.

4.1.4 Victim Race

Only one victim race indicator showed any relationship to career length: ANYWHIT. Offenders who raped at least one white victim had longer careers than offenders who did not (80 vs 230 days on average). Since ANYWHIT had no relationship to mean waiting time, it is likely that this is an artifact of differences in rates of offending. Nevertheless, it could be an artifact of differences in total number of rapes. In fact, when mean waiting time is added to the model, ANYWHIT remains marginally significant and when total rapes is added to the model, it no longer has any relationship to career length. It is also unlikely that the choice of victim is the main factor here; highly correlated with the race of the victim is the race of the offender and it would be that white offenders have shorter career lengths than non-white offenders.

4.1.5 Clinical Type

The results of the simple regression analyses show that none of the clinical type comparisons yielded a significant result. This suggests that diagnosing clinical type of a rapist will not be a useful tool in predicting the career lengths of serial rape offenders.

4.1.6 Psychological Variables

Several of the psychological variables appear to be related to career length as well: PERCHARM, PERCDYS, SADIST, DUMLONG, ANYDYS, and ANYCRUEL. PERCHARM and SADIST measure the same construct and compare offenders who appear to enjoy harming their victims to those who do not. The relationship to career length was positive such that offenders who enjoyed harming victims had longer careers. If more enforcement resources are allocated to apprehending sadistic offenders we would expect the opposite artifactual result so this finding may reveal a real relationship between the sadist tendency, or commitment to serial rapist lifestyle and career length. However, because these variables were also highly related to

Waiting Time between rapes it is possible they are only related to career length because it took these offenders more time between rapes.

Measures of sexual dysfunction, PERCDYS and ANYDYS, were both found to be positively related to Career length. This indicates that offenders with sexual dysfunction tend to have longer career lengths. These variables were not significantly related to mean waiting time and therefore this relationship is probably not an artifact. It could be an artifact of total rapes, however, and if it is not, explaining this relationship will be fairly difficult. Perhaps sexual dysfunction is characteristic of the more committed serial rapists and this is why we see longer careers in these offenders.

The dummy-coded indicator of rape length, DUMLONG, was also significantly positively related to Career length. Offenders who committed at least one rape which lasted longer than 90 minutes had careers on average 394 days long while those who committed shorter rapes had careers on average 156 days. Once again, it is possible that total rapes is a confounding factor (or planning or some other variable related to serial rape commitment) or that this variable is measuring some kind of commitment to a serial rape lifestyle that lasts a longer time before detection and apprehension.

Finally, whether an offender committed any of three acts defined as "cruel" (vaginal penetration with object, anal penetration with penis, or anal penetration with object) or not made a difference in his career length. Offenders that committed none of these acts had an average career length of 140 days while those who did had an average of 331 days. Once again it is difficult to explain this considering we would expect greater investigative effort in such rape cases but one possible explanation is that such rapists have a greater commitment to the serial rape

estyle and that this variable would drop out in the presence of a variable designed to measure that construct more closely.

When mean waiting time and total rape covariates are added to the model a few changes occur. When mean waiting time is added to the model of career length, PERCHARM and PERCDYS are no longer significantly related to career length. When total rapes is added to the model, only ANYDIS becomes completely insignificant. When both mean waiting time and total rapes are added to the model, only PERCHARM remains statistically significant, SADIST remains marginally significant, and PERCDYS, DUMLONG, ANYDYS and ANYCRUEL no longer have any relationship with career length. Given these results it is likely that the relationship between PERCHARM and PERCDYS and career length relies a great extent on the fact that offenders who enjoy harming their victims and those with sexual dysfunctions have a longer waiting time between rapes. However there is still probably some "real" relationship between this series of psychological variables and career length, above and beyond the influence of the rapist's waiting time and total number of rapes.

4.1.7 Alcohol and Drugs

Offenders who were reported to have been drinking in any rape had an average career length of 321 days compared to offenders who had not been drinking with an average career length of 165 days. Because drinking was associated with mean waiting time it is possible that this relationship is merely an artifact of the longer mean waiting time between rapes. It could also be that offenders more committed to the serial rape lifestyle are heavier drinkers.

When mean waiting time is added as a covariate to the model, DRUNK no longer is related to career length; when total rapes is added, DRUNK maintains its significance. Interestingly,

when both total rapes and mean waiting time are added, DRUNK again has a significant relationship with career length. It is difficult to interpret this finding but it is certainly possible that offenders who drink, for unexplained reasons have longer careers.

4.1.8 Situational/Miscellaneous Variables

As discussed in Sections 2.0-2.2, the variables PERCACQ and ACQVIC will be ignored and results for the other variables indicating the relationship between offender and victim will be examined. Both PRCSTRG2 and ALLSTRGR (two indicators of the same construct) were significantly related to career length. The relationship was negative in both cases such that offenders who chose strangers as victims tended to have shorter careers. offenders who had all victims who were strangers had a mean career length of 153 days while offenders who chose at least one acquaintance had careers lasting on average 369 days. Given that raping acquaintances should lead to greater likelihood of apprehension, this is a surprising result. A number of explanations could be attempted: 1) investigators do not take rape complaints seriously if the rape victim had encountered the rapist on more than one occasion prior to the rape and therefore the offender was free to continue his career; 2) offenders who choose strangers are more likely to harm victims, commit brutal acts *etc.* and are therefore more likely to attract the attention of law enforcement and be caught and processed and their careers are ended more quickly; 3) the effect found here is merely an artifact of mean waiting time—offenders who choose strangers as victims also tend to have shorter waiting times which would lead to shorter career length measured in days. It is very difficult to interpret this result.

When covariates mean waiting time and total rapes are added to the model, the relationship between extent of stranger rapes and career length loses much of its strength. However, both

RCSTRG2 and ALLSTRGR remain marginally significantly related to career length even after both covariates are added. This suggests that choosing strangers as victims has some "real" relationship to career length—as postulated before, perhaps it is related to some kind of commitment to the serial rapist lifestyle.

4.1.9 Mean Waiting Time

In sections 2.0-2.2, we attempted to predict the mean waiting time between rapes. We could not use information about career length because, during a rape investigation the career length information is unavailable; rapists have not ended their careers yet. However, in the case of predicting the end of a rapist's career, it is likely that information about the rate of offending (*i.e.*, mean waiting time) *will* be available. Therefore, if it is helpful in predictions, it can, logically, be included in our models.

The results of bivariate and multiple regression analyses show that mean waiting time is highly correlated with career length as is the total number of rapes committed by an offender. In fact, these two variables alone account for almost 99% of the variability in career length. Although it is certainly interesting to look at other variables to see their relationships to career length, the utility of using any other variables in predictions is clearly minimal.

4.2 Multiple Regression Models

See section 2.1 for a description of the development of multiple regression equations. As with the analyses of mean waiting time, an exploratory analysis was done here using a "backward elimination" multiple regression algorithm. Additionally, one model was developed in a more informed manner, using simultaneous entry, after looking at the results of simple and multiple regression equations. See Appendix K for complete results and equations. The following

methods were used for deciding on the inclusion of variables in the backward elimination analyses:

Model 1: All simple relationships with $t \geq 1.0$

Model 2: All variables whose simple relationships resulted in $t \geq 1.0$ but choosing between redundant indicators based on their relative qualities

Model 3: Including indicators thought to be most representative of their respective groups, eliminating redundancy and regardless of simple regression results

Model 4: Same as Model 1 but including LN(Waiting Time) as a covariate

Model 5: Same as Model 2 but including LN(Waiting Time) as a covariate

A sixth model was also attempted. In this case backward elimination was not used; the analyst used informed judgements based on previous regression results to choose variables and added and subtracted such variables to obtain this model:

$$\text{Ln}(D_j) = \gamma_1 \text{Ln}(N_j) + \gamma_2 \text{Ln}(T_j) + \beta_1 \text{AVGSELEC}_j + \beta_2 \text{AVGINJ}_j + \beta_3 \text{DRUNK}_j + \eta_j$$

where N_j and T_j are the total number of rapes and mean times respectively for the j th offender.

Of the six models attempted, all did very well at explaining substantial proportions of the variability in career length (See Appendix K for complete equations and results). Although the sixth model was the most parsimonious and is probably the easiest to interpret and use, it adds little to the understanding of career length above and beyond a model which bases its predictions on $\text{Ln}(N_j)$ and $\text{Ln}(T_j)$ alone.

Appendix A Independent Variable Descriptions

| Variable Name | Description |
|---------------|-------------|
|---------------|-------------|

Indicators of Geographical Distances Between Rapes:

Continuous Variables:

| | |
|---------|---|
| AVGDIS1 | Average Distance of each rape to the location of the offender's first rape site |
| AVDISX | same as AVGDIS1 except top outlier was eliminated |
| NAVGDIS | Natural Log of AVGDIS |
| NAVDISX | Natural Log of AVGDIX |

Indicators of Victim Injury:

Continuous Variables:

| | |
|--------|--|
| AVGINJ | Average (physical) Injury inflicted on victim: 1= none 2= minor cuts and abrasions, 3= medical attention required, 4= life threatening, permanent damage, 5= victim killed |
| MODINJ | Percentage of rapes where Moderate Injury (requiring medical attention) or more serious injury was inflicted |
| SEVINJ | Percentage of rapes where Severe Injury (life threatening or permanent damage) was inflicted |
| RCBFCE | Percentage of rapes in which repeated and painful Blunt Force (or more severe) was used |

Dummy-Coded Variables:

| | |
|-------|---|
| JDUM | 1= rapist inflicted moderate injury in at least one rape; 0= otherwise |
| JURE1 | 0= rapist inflicted no injury physical injury in any rape, 1= rapist inflicted any type of physical injury in any rape |
| JURE2 | 0= rapist inflicted minor injury or no injury in all rapes, 1= rapist inflicted more than minor injury in any rape (at least one rape victim required medical attention) |
| JURE3 | 0= rapist never inflicted more than moderate injury during any rape (includes no physical injury, minor injury -- scratches and abrasions, and moderate injury requiring medical attention), 1= rapist inflicted life threatening injury, permanent damage or killed victim at least once |
| JUNT | 1= rapist used at least moderate blunt force (striking victim repeatedly and painfully) during at least one rape, 0 = otherwise |

Indicators of Planning:

Continuous Variables:

| | |
|--------|---|
| GPLAN | Average Planning: rated 1= spur of the moment to 5= extensive planning |
| GSELEC | Average Selection of victim: rated 1= opportunistic selection of victim to 5= careful selection of victim |
| CGUNBR | Percentage of rapes to which a gun was brought (handgun, rifle or shotgun) |
| RCBIND | Percentage of rapes where Victim was bound by offender |

Appendix A Independent Variable Descriptions

Variable

| <u>Name</u> | <u>Description</u> |
|-------------|--------------------|
|-------------|--------------------|

Indicators of Planning (cont.):

Dummy-Coded Variables:

| | |
|---------|--|
| ANYGUN | 0= a gun was not brought to the scene of any rapes; 1= A gun was brought to the scene of at least one rape |
| ANYBIND | 0= no victims were bound by this rapist; 1= at least one victim was bound by this rapist |

Indicators of Victim Race:

Continuous Variables:

| | |
|----------|--|
| PERCHISP | Percentage of victims who were of Hispanic descent |
| PERCBLCK | Percentage of victims who were Black |
| PERCWHIT | Percentage of victims who were White |
| PERCASN | Percentage of victims who were of Asian descent |

Dummy-Coded Variables:

| | |
|----------|---|
| ANYWHIT | 0= no white victims, 1= one or more white victim |
| ANYHISP | 0= no Hispanic victims, 1= Any of the Victims was of Hispanic descent |
| ANYASN | 0= no Asian victims, 1= Any of the Victims was of Asian descent |
| ANYBLACK | 0=no black victims, 1=any black victims |
| BLACTHRD | 0= fewer than 1/3 black victims, 1=34%+ black victims |

Clinical Type:

Dummy-Coded Variables:

All of these were coded using the following codes from the original "CLINTYPE" data:

1= Power Reassurance Rapist

2= Power Assertive Rapist

3= Anger Retaliatory Rapist

4= Anger Excitation Rapist

| | |
|--------|--|
| CLIN12 | 1= Clintype 1, 2= Clintype 2 (most common Clintypes, eliminates those rapists categorized as 3 or 4 which are unusual and may throw off comparisons) |
|--------|--|

| | |
|----------|----------------------------------|
| CLINTYP1 | 1= Clintype 1, 0= any other type |
|----------|----------------------------------|

| | |
|----------|----------------------------------|
| CLINTYP2 | 1= Clintype 2, 0= any other type |
|----------|----------------------------------|

| | |
|----------|----------------------------------|
| CLINTYP3 | 1= Clintype 3, 0= any other type |
|----------|----------------------------------|

| | |
|----------|----------------------------------|
| CLINTYP4 | 1= Clintype 4, 0= any other type |
|----------|----------------------------------|

| | |
|--------|------------------------------|
| CLIN13 | 1= Clintype 1, 3= Clintype 3 |
|--------|------------------------------|

| | |
|--------|------------------------------|
| CLIN14 | 1= Clintype 1, 4= Clintype 4 |
|--------|------------------------------|

| | |
|--------|-----------------------------|
| CLIN23 | 2= Clintype 2, 3=Clintype 3 |
|--------|-----------------------------|

| | |
|--------|------------------------------|
| CLIN24 | 2= Clintype 2, 4= Clintype 4 |
|--------|------------------------------|

| | |
|--------|-----------------------------|
| CLIN34 | 3= Clintype 3, 4=Clintype 4 |
|--------|-----------------------------|

Appendix A

Independent Variable Descriptions

Variable

| Name | Description |
|------|-------------|
|------|-------------|

Indicators of Hostility:

Continuous Variables:

| | |
|----------|--|
| AVGCRUEL | Average Cruelty: 0= neither anal penetration with penis nor anal penetration with object or vaginal penetration with object was performed at any rape, 3= all three of these behaviors were performed at all rapes |
| PERCDYS | Percentage of rapes where victim reported obvious Sex Dysfunction |
| PERCHARM | Percentage of rapes where offender appeared to enjoy harming the victim |
| PERCHOST | Percentage of rapes where Hostility to Women was a theme |
| PERCLONG | Percentage of rapes which lasted 91+ minutes |

Dummy-Coded Variables:

| | |
|----------|--|
| ANYDYS | 1= There was evidence of sexual dysfunction in at least one rape, 0= no reported sexual dysfunction |
| ANYCRUEL | 1= The rapist committed at least one of three "cruel" acts in any rape (vaginal penetration with object, anal penetration with penis, anal penetration with object), 0= rapist did not perform any of these acts at any rape |
| HOSTILE | 0= no overt hostility toward women, 1=any rape had evidence of overt hostility to women as a theme |
| DUMLONG | 0= no rapes lasted longer than 90 minutes, 1= at least one rape that lasted 91+ minutes |
| SADIST | 0= no evidence reporting rapist enjoyed harming the victim, 1=any rape had evidence of rapist being "turned on" by harming victim |

Indicators of Alcohol or Drug Use:

Continuous Variables:

| | |
|-----------|--|
| PERCDRINK | Percentage of rapes where it appeared offender had been Drinking |
| PERCDRUG | Percentage of rapes where it appeared offender had used Drugs |

Dummy-Coded Variables:

| | |
|---------|--|
| ANYDRUG | |
| DRUNK | 0= not drunk at any rapes, 1= evidence of drinking at any rape |

Miscellaneous Indicators:

Continuous Variables:

| | |
|----------|--|
| PERCACQ | Percentage of rapes where victim was categorized as an "Acquaintance" (encountered on more than one occasion but not a personal friend) |
| PERCOUT | Percentage of rapes which took place Outdoors |
| PRCSTRG2 | Percentage of rapes where victim was categorized as a "Stranger" (had never been encountered or had been encountered once prior to rape) |
| PRCSTRGR | Percentage of rapes where victim was categorized as a complete Stranger (had never been encountered prior to rape) |

Appendix A Independent Variable Descriptions

| Variable | Description |
|--|--|
| Miscellaneous Indicators (cont.): | |
| <i>Binary-Coded Variables:</i> | |
| LSTRGR | (based on PRCSTRGR2) 0= at least one rape of an acquaintance, friend or relative, 1=all victims were complete strangers or had been encountered at most one time prior to the rape |
| QVIC | 0= no victims were categorized as "acquaintances", 1= at least one victim was categorized as an acquaintance (encountered more than once prior to rape but not a personal friend) |
| NEOUT | 0= at least one outdoor rape, 1= no outdoor rapes |

Appendix B Aggregated Variable Calculations

| Variable | |
|----------|-------------|
| Name | Calculation |

Indicators of Geographical Distances Between Rapes:

| | |
|-------------------------|--|
| AVGDIS1 | Average Distance of Each Rape from the First Rape site First, excluded any values over 5000 (per note to Janet from Andrea 11/29/93) $(DSRAP12 + DSRAP13 + DSRAP14 + DSRAP15 + DSRAP16 + DSRAP17 + DSRAP18 + DSRAP19 + RAP1RP10 + RAP1RP11 + RAP1RP12 + RAP1RP13 + RAP1RP14 + RAP1RP15 + RAP1RP16) / TOTRAP$ |
| AVGDISX | [Our variables are titled RAPE1_2, RAPE1_3...RAPE1_16] Average Distance of Each Rape from the First Rape site Same as AVGDIS1 after excluding one outlier at top end |
| LNAVGDIS Ln(AVGDIS) | Natural Log of the Average Distance of Each Rape from the First Rape Site |
| LNAVDISX Ln(AVGDISX) | Natural Log of the Average Distance of Each Rape from the First Rape Site (after excluding top outlier) |

Indicators of Victim Injury:

Continuous Variables:

| | |
|----------|---|
| AVGINJ | Average Injury $(DVVINJ + DVVINJ2 + DVVINJ3 + DVVINJ4 + DVVINJ5 + DVVINJ6 + DVVINJ7 + DVVINJ8 + DVVINJ9 + DVVINJ10 + DVVINJ11 + DVVINJ12 + DVVINJ13 + DVVINJ14 + DVVINJ15 + DVVINJ16 + DVVINJ17) / TOTRAP$ |
| PCMODINJ | Percentage of Rapes where Moderate Injury (or more) was inflicted $(\text{Count each time } DVVINJ \text{ to } DVVINJ20 = 3, 4, \text{ or } 5) / TOTRAP * 100$ |
| PCSEVINJ | Percentage of Rapes where Severe Injury (or more) was inflicted $(\text{Count each time } DVVINJ \text{ to } DVVINJ20 = 4 \text{ or } 5) / TOTRAP * 100$ |
| PERCBFCE | Percentage of Rapes in which moderate (repeated, painful) blunt force or more was used $(\text{Count each time } BFCE \text{ } BFCE20 = 3, 4, \text{ or } 5) / TOTRAP * 100$ |

Dummy-Coded Variables:

| | |
|---------|--|
| INJDUM | If PCMODINJ = 0, INJDUM = 0, if PCMODINJ > 0, INJDUM = 1 |
| INJURE1 | If AVGINJ = 1, INJURE1 = 0, If AVGINJ > 1, INJURE1 = 1 |
| INJURE2 | If AVGINJ < 2, INJURE2 = 0, If AVGINJ >= 2, INJURE2 = 1 |
| INJURE3 | If AVGINJ < 3, INJURE3 = 0, If AVGINJ >= 3, INJURE3 = 1 |
| BLUNT | If PERCBFCE > 0 THEN BLUNT = 1, otherwise BLUNT = 0 |

Appendix B Aggregated Variable Calculations

able

e Calculation

ators of Planning:

inuous Variables:

PLAN Average Planning
 $(NG + NG2 + NG3... + NG20)/TOTRAP$

SELEC Average Selection of Victim
 $+ NF2 + NF3... + NF20)/TOTRAP$

GUNBR Percentage of Rapes to Which a gun was brought
 Count each time GUNBR to GUNBR20 = 2 and RIFBR to RIFBR20 = 2 (yes))/TOTRAP)*100 (note that if
 offenders brought both a handgun and a rifle or shotgun to the rape scene, this figure will be an
 estimate)

CBIND Percentage of Rapes in which Victim was Bound
 $(\text{Count BIND to BIND20} = 2, 3, 4, 5)/TOTRAP)*100$

my-Coded Variables:

GUN Any gun brought to any rape?
 If $PRCGUNBR > 0$ then $ANYGUN = 1$, otherwise $ANYGUN = 0$

BIND Any victim bound at any rape?
 If $PERCBIND > 0$, $ANYBIND = 1$, otherwise $ANYBIND = 0$

ators of Victim Race:

inuous Variables:

CHISP Percentage of Victims who were Hispanic
 Count each time $RAETHV$ to $RAETHV20 = 3$ (Hispanic))/TOTRAP)*100

CBLCK Percentage of Victims who were Black
 Count each time $RAETHV$ to $RAETHV20 = 2$ (Black))/TOTRAP)*100

CWHIT Percentage of Victims who were White
 Count each time $RAETHV$ to $RAETHV20 = 1$ (Hispanic))/TOTRAP)*100

CASN Percentage of Victims who were Asian
 Count each time $RAETHV$ to $RAETHV20 = 3$ (Hispanic))/TOTRAP)*100

my-Coded Variables:

THISP Any Hispanic Victims?
 $ERCHISP > 0$, $ANYHISP = 1$, otherwise $ANYHISP = 0$

TASN Any Asian Victims?
 $ERCASN > 0$, $ANYASN = 1$, otherwise $ANYASN = 0$

TBLACK Any Black Victims?
 $ERCBLCK > 0$, $ANYBLACK = 1$, otherwise $ANYBLACK = 0$

CTHRD Were more than 1/3 of the Victims Black?
 $ERCBLCK > 33$, $BLACTHRD = 1$, otherwise $BLACTHRD = 0$

TWHIT Any White Victims?
 If $PERCWHIT > 0$, $ANYWHIT = 1$, otherwise $ANYWHIT = 0$

Appendix B Aggregated Variable Calculations

| Variable | |
|----------|-------------|
| Name | Calculation |

Clinical Type:

Dummy-Coded Variables:

All of these were coded using the following codes from the original "CLINTYPE" data:

- 1= Power Reassurance Rapist
- 2= Power Assertive Rapist
- 3= Anger Retaliatory Rapist
- 4= Anger Excitation Rapist

| | |
|----------|--|
| CLIN12 | 1= Clintype 1, 2= Clintype 2 (most common Clintypes, eliminates those rapists categorized as 3 or 4 which are unusual and may throw off comparisons) |
| CLINTYP1 | 1= Clintype 1, 0= any other type |
| CLINTYP2 | 1= Clintype 2, 0= any other type |
| CLINTYP3 | 1= Clintype 3, 0= any other type |
| CLINTYP4 | 1= Clintype 4, 0= any other type |
| CLIN13 | 1= Clintype 1, 3= Clintype 3 |
| CLIN14 | 1= Clintype 1, 4= Clintype 4 |
| CLIN23 | 2= Clintype 2, 3=Clintype 3 |
| CLIN24 | 2= Clintype 2, 4= Clintype 4 |
| CLIN34 | 3= Clintype 3, 4=Clintype |

Indicators of Hostility:

Continuous Variables:

| | |
|----------|---|
| AVGCRUEL | Average Level of Cruelty per Rape Possible values 0 - 3 ((Count OAAI to OAAI20 = 2 (yes), OAAP to OAAP20 = 2 (yes) and OAVP - OAVP20 = 2(yes)) [giving total score of 0-3 for each rape]/TOTRAP) |
| PERCDYS | Percentage of Rapes where Sexual Dysfunction was Evident ((Count EVDY to EVDY20 = 2 (Yes))/TOTRAP)*100 |
| PERCHARM | Percentage of Rapes where Harming the Victim seemed to "Turn the Rapist On: ((Count HARM to HARM20 = 2 (yes))/TOTRAP)*100 |
| PERCHOST | Percentage of Rapes where hostility toward victim is a significant theme of the rape ((Count HOSTWM to HOSTWM20 = 4 or 5)/TOTRAP)*100 |
| PERCLONG | Percentage of Rapes which lasted longer than 90 minutes ((COUNT DUR - DUR20 = 4, or 5)/TOTRAP)*100 |

Appendix B Aggregated Variable Calculations

Variable _____ Calculation

Indicators of Hostility (cont.):

Binary-Coded Variables:

ANYDYS Any Sexual Dysfunction?
If PERCDYS > 0, ANYDYS = 1, otherwise ANYDYS = 0

ANYCRUEL Any Cruel Acts Committed?
If AVGCRUEL > 0 then ANYCRUEL = 1, otherwise ANYCRUEL = 0

ANYHOSTILE Any Hostility Verbally Expressed About Victim?
If PERCHOST > 0, HOSTILE = 1, otherwise HOSTILE = 0

ANYMLONG Any Long Rapes (90 minutes +)
If PERCLONG > 0 DUMLONG=1, otherwise DUMLONG = 0

ANYDIST Any Indication of Sadism?
If PERCHARM > 0, SADIST = 1, otherwise SADIST = 0

Indicators of Alcohol or Drug Use:

Continuous Variables:

PCDRNK Percentage of Rapes where Rapist had been Drinking
(((Count DRINK to DRINK20 = 2 (yes))/TOTRAP)*100

PCDRUG Percentage of Rapes where Rapist had been using Drugs
(((Count DRUG to DRUG20 = 2 (yes))/TOTRAP)*100

Binary-Coded Variables:

ANYDRUG Any Drug Use?
If PERCDRUG > 0, ANYDRUG = 1, otherwise ANYDRUG = 0

ANYJNK Any Drinking?
If PERCDRNK > 0, DRUNK = 1, otherwise DRUNK = 0

Cellaneous Indicators:

Continuous Variables:

PCACQ Percentage of Rapes where Victim was an Acquaintance (encountered on more than one occasion but not a personal friend)
(((Count RELVIC to RELVIC20 = 3 or 4)/TOTRAP)*100
Problem with this variable is that relatives and friends are not considered "acquaintances" and are lumped in as strangers

PCOUT Percentage of Rapes which were outdoor
(((Count CONSIT to CONSIT20 = 2)/TOTRAP)*100

PCSTRG2 Percentage of Rapes where Victim was a stranger or had only encountered offender once prior to rape
(((Count RELVIC to RELVIC20 = 1 or 2)/TOTRAP)*100

PCSTRGR Percentage of Rapes where Offender was a complete stranger to victim
(((Count RELVIC to RELVIC20 = 1)/TOTRAP)*100

Appendix B

Aggregated Variable Calculations

| Variable | Calculation |
|----------|-------------|
|----------|-------------|

Miscellaneous Indicators (cont.):

Dummy-Coded Variables:

| | |
|----------|---|
| ALLSTRGR | All Victims were Strangers? If PRCSTRG2 = 100 ALLSTRGR = 1, otherwise ALLSTRGR = 0 |
| ACQVIC | Any Victims Acquaintances? If PERCACQ > 1 ACQVIC = 1, otherwise ACQVIC = 0 *problem with this variable is that relatives and friends are not included as "acquaintances" and are lumped in with strangers |
| NONEOUT | No Rapes Outdoors? If PERCOUT > 0, NONEOUT = 0, otherwise NONEOUT = 1 |

Appendix C
Waiting Time Summary
Natural Log of the Average Number of Days between Rapes

| IV | RSQ | Constant | b | t | sig t |
|----------|--------|----------|----------|--------|----------|
| Distance | | | | | |
| AVGDIS1 | .08578 | 3.753795 | .005836 | 2.723 | .0080*** |
| LNAVGDIS | .18875 | 3.581531 | .385064 | 4.233 | .0001*** |
| AVGDISX | .11009 | 3.644077 | .024698 | 3.106 | .0026*** |
| LNAVDISX | .15091 | 3.585564 | .368414 | 3.675 | .0004*** |
| | | | | | |
| Injury | | | | | |
| AVGINJ | .02669 | 3.279906 | .569123 | 1.844 | .0676** |
| PERCBFCE | .02359 | 3.970485 | .012770 | 1.731 | .0859** |
| PCMODINJ | .02260 | 4.006399 | .013320 | 1.693 | .0929** |
| PCSEVINJ | .00612 | 4.15077 | -.016639 | -.874 | .3840 |
| INJDUM | .00524 | 4.048802 | .229654 | .808 | .4205 |
| INJURE1 | .00007 | 4.097466 | .031885 | .092 | .9266 |
| INJURE2 | .01888 | 4.042882 | .597747 | 1.545 | .1250* |
| INJURE3 | .00078 | 4.117042 | .272499 | .311 | .7560 |
| BLUNT | .03594 | 3.891184 | .574032 | 2.150 | .0335*** |
| | | | | | |
| Planning | | | | | |
| AVGPLAN | .00994 | 3.394908 | .244408 | 1.115 | .2668* |
| AVGSELEC | .01793 | 3.481898 | .242165 | 1.505 | .1349* |
| PERCBIND | .00501 | 4.043929 | .002914 | .790 | .4310 |
| PRCGUNBR | .00845 | 4.206426 | -.004366 | -1.028 | .3059* |
| ANYBIND | .00395 | 4.038648 | .187634 | .701 | .4846 |
| ANYGUN | .00383 | 4.193315 | -.191150 | -.691 | .4910 |

Appendix C
Waiting Time Summary
Natural Log of the Average Number of Days between Rapes

| | RSQ | Constant | b | t | Sig t |
|--------------|--------|----------|----------|--------|---------|
| Age | | | | | |
| ERCHWIT | .00676 | 3.866545 | .003598 | .918 | .3602 |
| ERCBLCK | .02215 | 4.212410 | -.008438 | -1.676 | .0963** |
| ERCHISP | .00814 | 4.151074 | -.011195 | -1.009 | .3149* |
| ERCASN | .0049 | 4.119015 | .005211 | .247 | .8054 |
| NYBLACK | .02325 | 4.227762 | -.596961 | -1.718 | .0883** |
| LAETHRD | .00911 | 4.179562 | -.41521 | -1.068 | .2877* |
| NYHISP | .00214 | 4.141415 | -.281685 | -.515 | .6074 |
| NYASN | .00001 | 4.122586 | .029751 | .039 | .9689 |
| NYWHIT | .01641 | 3.536758 | .648538 | 1.438 | .1529 |
| | | | | | |
| Initial Type | | | | | |
| INTYP1 | .00080 | 4.093311 | .088551 | .315 | .7535 |
| INTYP2 | .00066 | 4.156158 | -.077568 | -.287 | .7746 |
| INTYP3 | .00051 | 4.129615 | -.19168 | -.252 | .8016 |
| INTYP4 | .00086 | 4.112984 | .189830 | .326 | .7450 |
| IN12 | .00108 | 4.285133 | -.103271 | -.319 | .7504 |
| IN13 | .00250 | 4.303825 | -.121963 | -.336 | .7386 |
| IN14 | .00092 | 4.141544 | .040317 | .210 | .8345 |
| IN23 | .00048 | 4.359901 | -.140655 | -.163 | .8714 |
| IN24 | .00192 | 3.854367 | .112112 | .334 | .7398 |
| IN34 | .02224 | 2.843299 | .364879 | .452 | .6616 |

Appendix C
Waiting Time Summary
Natural Log of the Average Number of Days between Rapes

| IV | RSQ | Constant | b | t | Sig t |
|-----------------------|--------|----------|-----------|--------|----------|
| Psychological | | | | | |
| PERCHOST | .01481 | 4.196822 | -.016317 | -1.365 | .1747* |
| PERCHARM | .05571 | 3.964144 | .021928 | 2.705 | .0078*** |
| AVGCRUEL | .00149 | 4.084641 | .202515 | .430 | .6682 |
| PERCDYS | .02607 | 3.867579 | .010006 | 1.822 | .0709** |
| PERCLONG | .00631 | 4.065730 | .005769 | .887 | .3767 |
| HOSTILE | .00550 | 4.175639 | -.285464 | -.828 | .4090 |
| SADIST | .03689 | 3.967442 | .678176 | 2.179 | .0312*** |
| DUMLONG | .02120 | 3.978631 | .468138 | 1.639 | .1038* |
| ANYDYS | .01138 | 3.886687 | .343015 | 1.195 | .2344* |
| ANYCRUEL | .01874 | 3.935627 | .408204 | 1.539 | .1264* |
| | | | | | |
| Alcohol/Drugs | | | | | |
| PERCDRINK | .01674 | 4.07739 | .09247 | 1.453 | .1488* |
| PERCDRUG | .00262 | 4.101135 | .006331 | .570 | .5695 |
| DRUNK | .02733 | 3.943524 | .515472 | 1.867 | .0643** |
| ANYDRUG | .00002 | 4.125958 | -.017990 | -.046 | .9633 |
| | | | | | |
| Situational/ Misc. | | | | | |
| PERCOUT | .00010 | 4.136481 | -.0003627 | -.111 | .9119 |
| PERCACQ | .09386 | 3.988720 | .038678 | 3.584 | .0005*** |
| PRCSTRGR | .04979 | 5.545485 | -.016410 | -2.549 | .0120*** |
| PRCSTRG2 | .10072 | 6.807778 | -.029636 | -3.727 | .0003*** |
| ACQVIC | .04008 | 4.022601 | .978235 | 2.275 | .0246*** |

Appendix C
Waiting Time Summary
Natural Log of the Average Number of Days between Rapes

| IV | RSQ | Constant | b | t | Sig t |
|-----------------------------|--------|----------|----------|--------|----------|
| Situational/ Misc. cont. | | | | | |
| ALLSTRGR | .04126 | 4.535663 | -.633277 | -2.310 | .0225*** |
| NONEOUT | .00424 | 4.211451 | -.194352 | -.726 | .4690 |
| | | | | | |
| Career Length and Total | | | | | |
| CAREER | .46669 | 3.477462 | .001061 | 10.417 | .0000*** |
| TOTAL | .00118 | 4.202591 | -.014110 | -.382 | .7030 |
| LN(CAREER) | .75825 | -.055283 | .782989 | 19.721 | .0000*** |
| LN(TOTAL) | .00235 | 4.303208 | -.117301 | -.540 | .5900 |

* POWER ($t \geq 1.00$)

** Marginal Significance ($.100 > p > .05$)

*** Significant ($p \leq .05$)

Appendix D
Simple Regression Summary
Dependent Variable = Natural Log of Career

| | RSQ | Constant | b | t | sig t |
|--------|--------|----------|----------|--------|----------|
| tance | | | | | |
| GDIS1 | .03045 | 4.864555 | .003949 | 1.575 | .1192* |
| AVGDIS | .12732 | 4.681091 | .360437 | 3.352 | .0012*** |
| GDISX | .06236 | 4.762586 | .021479 | 2.278 | .0255*** |
| AVDISX | .11730 | 4.677156 | .376681 | 3.178 | .0021*** |
| | | | | | |
| ry | | | | | |
| GINJ | .02218 | 4.481723 | .576986 | 1.677 | .0960** |
| RCBFCE | .01730 | 5.191241 | .012163 | 1.478 | .1420* |
| MODINJ | .01406 | 5.234239 | .011686 | 1.330 | .1860* |
| SEVINJ | .00360 | 5.359657 | -.014199 | -.670 | .5044 |
| DUM | .04636 | 5.089815 | .759650 | 2.455 | .0155*** |
| URE1 | .05267 | 4.534204 | .982065 | 2.626 | .0097*** |
| URE2 | .00149 | 5.311799 | .186808 | .430 | .6678 |
| URE3 | .00302 | 5.351180 | -.595435 | -.612 | .5414 |
| UNT | .09725 | 4.911922 | 1.050200 | 3.655 | .0004*** |
| | | | | | |
| ning | | | | | |
| GPLAN | .05164 | 3.489575 | .619697 | 2.599 | .0105*** |
| GSELEC | .04391 | 4.220444 | .421412 | 2.386 | .0185*** |
| RCBIND | .01241 | 5.197682 | .005099 | 1.248 | .2143* |
| CGUNBR | .00920 | 5.433202 | -.005067 | -1.073 | .2853* |
| YBIND | .02089 | 5.119860 | .480001 | 1.627 | .1064* |
| YGUN | .00149 | 5.288644 | .132461 | .430 | .6680 |

Appendix D
Simple Regression Summary
Dependent Variable = Natural Log of Career

| IV | RSQ | Constant | b | t | sig t |
|----------------------|--------|----------|------------|-------|-------|
| Race | | | | | |
| PERCWHIT | .00143 | 5.205453 | .001842 | .422 | .6740 |
| PERCBLCK | .00687 | 5.392064 | -.005227 | -.926 | .3560 |
| PERCHISP | .00632 | 5.363995 | -.010971 | -.888 | .3761 |
| PERCASN | .00034 | 5.332835 | .004810 | .205 | .8380 |
| ANYBLACK | .00262 | 5.37889 | -.222709 | -.570 | .5695 |
| BLACTHRD | .00354 | 5.375867 | -.288050 | -.664 | .5078 |
| ANYHISP | .0000 | 5.337132 | -.002029 | -.003 | .9973 |
| ANYASN | .00429 | 5.317408 | .617254 | .731 | .4664 |
| ANYWHIT | .03515 | 4.381782 | 1.055770 | 2.125 | .0355 |
| | | | | | |
| Clinical Type | | | | | |
| CLINTYP1 | .00009 | 5.325973 | .032321 | .103 | .9179 |
| CLINTYP2 | .00235 | 5.405235 | -.162213 | -.540 | .5901 |
| CLINTYP3 | .00626 | 5.360677 | -.74729 | -.884 | .3786 |
| CLINTYP4 | .00019 | 5.342550 | -.099843 | -.154 | .8778 |
| CLIN12 | .00108 | 5.473565 | -.115271 | -.319 | .7504 |
| CLIN13 | .02055 | 5.729967 | -.371673 | -.972 | .3364 |
| CLIN14 | .00075 | 5.396823 | -.038529 | -.190 | .8504 |
| CLIN23 | .00140 | 6.499173 | -.628075 | -.640 | .5245 |
| CLIN24 | .0000 | 5.243339 | -.00015799 | .000 | .9997 |
| CLIN34 | .07278 | 2.731670 | .627759 | .841 | .4224 |
| | | | | | |

Appendix D
Simple Regression Summary
Dependent Variable = Natural Log of Career

| IV | RSQ | Constant | b | t | sig t |
|---------------------------|--------|----------|----------|-------|----------|
| Hostility/ Psychiatric | | | | | |
| PERCHOST | .00563 | 5.387265 | -.011189 | -.838 | .4037 |
| PERCHARM | .04958 | 5.169791 | .023005 | 2.543 | .0122*** |
| AVGCRUEL | .00804 | 5.236450 | .523627 | 1.002 | .3181* |
| PERCDYS | .02848 | 5.039505 | .0111630 | 1.906 | .0589** |
| PERCLONG | .00418 | 5.284680 | .005222 | .721 | .4720 |
| HOSTILE | .00336 | 5.291745 | .247937 | .646 | .5193 |
| SADIST | .06203 | 5.111907 | .978003 | 2.864 | .0049*** |
| DUMLONG | .06696 | 5.050624 | .925224 | 2.983 | .0034*** |
| ANYDYS | .08228 | 4.628826 | 1.025636 | 3.334 | .0011*** |
| ANYCRUEL | .06723 | 4.941165 | .859925 | 2.990 | .0034*** |
| | | | | | |
| Alcohol/ Drugs | | | | | |
| PERCDRINK | .00676 | 5.255135 | .006538 | .919 | .3599 |
| PERCDRUG | .00081 | 5.323131 | .003921 | .317 | .7515 |
| DRUNK | .03698 | 5.104160 | .666779 | 2.182 | .0310*** |
| ANYDRUG | .00465 | 5.292512 | .329757 | .761 | .4483 |
| | | | | | |

Appendix D
Simple Regression Summary
Dependent Variable = Natural Log of Career

| IV | RSQ | Constant | b | t | sig t |
|---------------------------|--------|----------|----------|---------|----------|
| Situational/ Misc. | | | | | |
| PERCOUT | .01907 | 5.536753 | -.005595 | -1.553 | -.1231* |
| PERCACQ | .03939 | 5.239874 | .027867 | 2.255 | .0259*** |
| PRCSTRGR | .00538 | 6.155382 | -.009445 | -1.295 | .1979* |
| PRCSTRG2 | .04106 | 7.413396 | -.022925 | -2.520 | .0130*** |
| ACQVIC | .02074 | 5.256253 | .782659 | 1.621 | .1076* |
| ALLSTRGR | .06466 | 5.910807 | -.881698 | -2.928 | .0041*** |
| NONEOUT | .00010 | 5.321625 | .033994 | .114 | .9094 |
| | | | | | |
| Waiting Time and Total | | | | | |
| AVGT | .28299 | 4.900290 | .002369 | 6.996 | .0000*** |
| LOGNAVGT | .75825 | 1.343774 | .968401 | 19.721 | .0000*** |
| TOTAL | .18306 | 4.240004 | .195782 | 5.271 | .0000*** |
| LOGNTOT | .19971 | 3.494365 | 1.202952 | 5.563 | .0000*** |
| RATE | .28517 | 5.589141 | -.145407 | -7.033 | .0000*** |
| LOGRATE | .75825 | 4.650959 | -.968401 | -19.721 | .0000*** |

* POWER ($t \geq 1.00$)

** Marginal Significance ($.100 \geq p > .05$)

*** Significant ($p \leq .05$)

Appendix G
Prediction Summary of all Dummy-Coded Independent Variables
on Waiting Time based on Simple Regression

| Indep | Value | Cases | Mean | Std Dev | Mean | F | p = |
|-----------|-------|-------|--------|---------|------|--------|---------|
| Age: | | | | | | | |
| AGE | 0 | 85 | 4.0488 | 1.5894 | 57 | .6533 | .4205 |
| | 1 | 41 | 4.2785 | 1.2717 | 72 | | |
| INJURE1 | 0 | 23 | 4.0975 | 1.8215 | 60 | .0085 | .9266 |
| | 1 | 103 | 4.1294 | 1.4189 | 62 | | |
| INJURE2 | 0 | 109 | 4.0429 | 1.4600 | 57 | 2.3858 | .1250 |
| | 1 | 17 | 4.6406 | 1.6374 | 104 | | |
| INJURE3 | 0 | 123 | 4.1170 | 1.4972 | 61 | .0970 | .7560 |
| | 1 | 3 | 4.3895 | 1.5254 | 81 | | |
| BLUNT | 0 | 75 | 3.8912 | 1.5596 | 49 | 4.6223 | .0335* |
| | 1 | 51 | 4.4652 | 1.3294 | 87 | | |
| Planning: | | | | | | | |
| ANYGUN | 0 | 80 | 4.1933 | 1.4779 | 66 | .4772 | .4910 |
| | 1 | 46 | 4.0022 | 1.5256 | 55 | | |
| ANYBIND | 0 | 69 | 4.0386 | 1.6491 | 68 | .4915 | .4846 |
| | 1 | 57 | 4.2263 | 1.2840 | | | |
| Race: | | | | | | | |
| ANYWHIT | 0 | 12 | 3.5368 | 2.1562 | 34 | 2.0682 | .1529 |
| | 1 | 114 | 4.1853 | 1.4037 | 66 | | |
| ANYHISP | 0 | 118 | 4.1414 | 1.5160 | 63 | .2654 | .6074 |
| | 1 | 8 | 3.8597 | 1.1242 | 47 | | |
| ANYASN | 0 | 122 | 4.1226 | 1.5131 | 62 | .0015 | .9689 |
| | 1 | 4 | 4.1523 | .6635 | 64 | | |
| ANYBLACK | 0 | 104 | 4.2278 | 1.4534 | 69 | 2.9513 | .0883** |
| | 1 | 22 | 3.6308 | 1.6080 | 38 | | |
| BLACTHRD | 0 | 109 | 4.1796 | 1.4464 | 65 | 1.1403 | .2877 |
| | 1 | 17 | 3.7643 | 1.7657 | 43 | | |

Appendix G
Prediction Summary of all Dummy-Coded Independent Variables
on Waiting Time based on Simple Regression

| Indep Variable | Value | Cases | Mean Ln (Waiting Time) | Std Dev | Mean Waiting Time (Days) | F | p = |
|----------------|-------|-------|------------------------|---------|--------------------------|--------|---------|
| Clinical Type: | | | | | | | |
| CLINTYP1 | 0 | 83 | 4.0933 | 1.5391 | 60 | .0990 | .7535 |
| | 1 | 43 | 4.1819 | 1.4132 | 65 | | |
| CLINTYP2 | 0 | 73 | 4.1562 | 1.3341 | 64 | .0824 | .7746 |
| | 1 | 53 | 4.0786 | 1.6985 | 59 | | |
| CLINTYP3 | 0 | 122 | 4.1296 | 1.5081 | 62 | .0634 | .8016 |
| | 1 | 4 | 3.9379 | 1.0027 | 51 | | |
| CLINTYP4 | 0 | 119 | 4.1130 | 1.5021 | 61 | .1062 | .7450 |
| | 1 | 7 | 4.3028 | 1.4072 | 74 | | |
| CLIN12 | 1 | 43 | 4.1819 | 1.4132 | 65 | .1018 | .7504 |
| | 2 | 53 | 4.0786 | 1.6985 | 59 | | |
| CLIN13 | 1 | 43 | 4.1819 | 1.4132 | 65 | .1128 | .7386 |
| | 3 | 4 | 3.9379 | 1.0027 | 51 | | |
| CLIN14 | 1 | 43 | 4.1819 | .4132 | 65 | .0441 | .8345 |
| | 4 | 7 | 4.3028 | 1.4072 | 74 | | |
| CLIN23 | 2 | 53 | 4.0786 | 1.6985 | 59 | .0264 | .8714 |
| | 3 | 4 | 3.9379 | 1.0027 | 51 | | |
| CLIN24 | 2 | 53 | 4.0786 | 1.6985 | 59 | .1114 | .7398 |
| | 4 | 7 | 4.3028 | 1.4072 | 74 | | |
| CLIN34 | 3 | 4 | 3.9379 | 1.0027 | 51 | .2047 | .6616 |
| | 4 | 7 | 4.3028 | 1.4072 | 74 | | |
| Psychological | | | | | | | |
| ANYDYS | 0 | 39 | 3.8867 | 1.6917 | 49 | 1.4277 | .2344 |
| | 1 | 87 | 4.2297 | 1.3911 | 69 | | |
| ANYCRUEL | 0 | 68 | 3.9356 | 1.5190 | 51 | 2.3679 | .1264 |
| | 1 | 58 | 4.3438 | 1.4421 | 77 | | |
| HOSTILE | 0 | 103 | 4.1756 | 1.3956 | 65 | .6863 | .4090 |
| | 1 | 23 | 3.8902 | 1.8848 | 49 | | |
| DUMLONG | 0 | 87 | 3.9786 | 1.4751 | 53 | 2.6859 | .1038** |
| | 1 | 39 | 4.4468 | 1.4985 | 85 | | |
| SADIST | 0 | 97 | 3.9674 | 1.5138 | 53 | 4.7493 | .0312* |
| | 1 | 29 | 4.6456 | 1.3106 | 104 | | |

Appendix G
 Prediction Summary of all Dummy-Coded Independent Variables
 on Waiting Time based on Simple Regression

| Indep Variable | Value | Cases | Mean Ln (Waiting Time) | Std Dev | Mean Waiting Time (Days) | F | p = |
|--------------------|-------|-------|------------------------|---------|--------------------------|--------|---------|
| Alcohol and Drugs: | | | | | | | |
| ANYDRUG | 0 | 109 | 4.1260 | 1.4971 | 62 | .0021 | .9633 |
| | 1 | 17 | 4.1080 | 1.5060 | 61 | | |
| DRUNK | 0 | 82 | 3.9435 | 1.4058 | 52 | 3.4847 | .0643** |
| | 1 | 44 | 4.4590 | 1.6043 | 86 | | |
| Situation: | | | | | | | |
| ALLSTRGR | 0 | 44 | 4.5357 | 1.7064 | 93 | 5.3359 | .0225* |
| | 1 | 82 | 3.9024 | 1.3225 | 50 | | |
| ACQVIC | 0 | 113 | 4.0226 | 1.2954 | 56 | 5.1776 | .0246* |
| | 1 | 13 | 5.0008 | 2.5699 | 149 | | |
| NONEOUT | 0 | 69 | 4.2115 | 1.5678 | 67 | .5275 | .4690 |
| | 1 | 57 | 4.0171 | 1.4017 | 56 | | |

atistically significant at the 95% confidence level

marginally statistically significant

Appendix H
Prediction Summary of all Dummy-Coded Independent Variables
on Career Length based on Simple Regression

| Indep Variable | Value | Cases | Mean Ln (Career) | Std Dev | Career (Days) | F | p = |
|----------------|-------|-------|------------------|---------|---------------|---------|--------|
| Injury: | | | | | | | |
| INJDUM | 0 | 85 | 5.0898 | 1.7438 | 162 | 6.0284 | .0155* |
| | 1 | 41 | 5.8495 | 1.3497 | 347 | | |
| INJURE1 | 0 | 23 | 4.5342 | 1.9328 | 93 | 6.8945 | .0097* |
| | 1 | 103 | 5.5163 | 1.5465 | 249 | | |
| INJURE2 | 0 | 109 | 5.3118 | 1.6844 | 203 | .1851 | .6678 |
| | 1 | 17 | 5.4986 | 1.5274 | 244 | | |
| INJURE3 | 0 | 123 | 5.3512 | 1.6719 | 211 | .3751 | .5414 |
| | 1 | 3 | 4.7557 | 1.0498 | 116 | | |
| BLUNT | 0 | 75 | 4.9119 | 1.7124 | 136 | 13.3587 | .0004* |
| | 1 | 51 | 5.9621 | 1.3697 | 388 | | |
| Planning: | | | | | | | |
| ANYGUN | 0 | 80 | 5.2886 | 1.6878 | 198 | .1849 | .6680 |
| | 1 | 46 | 5.4211 | 1.6243 | 226 | | |
| ANYBIND | 0 | 69 | 5.1199 | 1.7977 | 167 | 2.6456 | .1064 |
| | 1 | 57 | 5.5999 | 1.4474 | 270 | | |
| Race: | | | | | | | |
| ANYWHIT | 0 | 12 | 4.3818 | 2.1598 | 80 | 4.5177 | .0355* |
| | 1 | 114 | 5.4376 | 1.5765 | 230 | | |
| ANYHISP | 0 | 118 | 5.3371 | 1.6710 | 208 | .0000 | .9973 |
| | 1 | 8 | 5.3351 | 1.5844 | 208 | | |
| ANYASN | 0 | 122 | 5.3174 | 1.6792 | 204 | .5338 | .4664 |
| | 1 | 4 | 5.9347 | .7352 | 378 | | |
| ANYBLACK | 0 | 104 | 5.3759 | 1.6743 | 216 | .3253 | .5695 |
| | 1 | 22 | 5.1532 | 1.6130 | 173 | | |
| BLACTHRD | 0 | 109 | 5.3759 | 1.6439 | 216 | .4411 | .5078 |
| | 1 | 17 | 5.0878 | 1.7887 | 162 | | |

Appendix H
Prediction Summary of all Dummy-Coded Independent Variables
on Career Length based on Simple Regression

| Indep Variable | Value | Cases | Mean Ln (Waiting Time) | Std Dev | Career (Days) | F | p = |
|----------------|-------|-------|---------------------------|---------|------------------|---------|--------|
| Clinical Type: | | | | | | | |
| CLINTYP1 | 0 | 83 | 5.3260 | 1.74117 | 206 | .0107 | .9179 |
| | 1 | 43 | 5.3583 | 1.5078 | 212 | | |
| CLINTYP2 | 0 | 73 | 5.4052 | 1.4320 | 223 | .2917 | .5901 |
| | 1 | 53 | 5.2430 | 1.9405 | 189 | | |
| CLINTYP3 | 0 | 122 | 5.3607 | 1.6793 | 213 | .7807 | .3786 |
| | 1 | 4 | 4.6149 | .5490 | 101 | | |
| CLINTYP4 | 0 | 119 | 5.3425 | 1.6782 | 209 | .0237 | .8778 |
| | 1 | 7 | 5.2427 | 1.4068 | 189 | | |
| CLIN12 | 1 | 43 | 5.3583 | 1.5078 | 212 | .1018 | .7504 |
| | 2 | 53 | 5.2430 | 1.9405 | 189 | | |
| CLIN13 | 1 | 43 | 5.3583 | 1.5078 | 212 | .9440 | .3364 |
| | 3 | 4 | 4.6149 | .5490 | 101 | | |
| CLIN14 | 1 | 43 | 5.3583 | 1.5078 | 212 | .0360 | .8504 |
| | 4 | 7 | 5.2427 | 1.4068 | 189 | | |
| CLIN23 | 2 | 53 | 5.2430 | 1.9405 | 189 | .4102 | .5245 |
| | 3 | 4 | 4.6149 | .5490 | 101 | | |
| CLIN24 | 2 | 53 | 5.2430 | 1.9405 | 189 | .0000 | .9997 |
| | 4 | 7 | 5.2427 | 1.4068 | 189 | | |
| CLIN34 | 3 | 4 | 4.6149 | .5490 | 101 | .7065 | .4224 |
| | 4 | 7 | 5.2427 | 1.4068 | 189 | | |
| Psychological | | | | | | | |
| ANYDYS | 0 | 39 | 4.6288 | 1.7080 | 102 | 11.1177 | .0011* |
| | 1 | 87 | 5.6545 | 1.5443 | 286 | | |
| ANYCRUEL | 0 | 68 | 4.9412 | 1.5882 | 140 | 8.938 | .0034* |
| | 1 | 58 | 5.8011 | 1.6336 | 331 | | |
| HOSTILE | 0 | 103 | 5.2917 | 1.5308 | 199 | .4177 | .5193 |
| | 1 | 23 | 5.5397 | 2.1751 | 255 | | |
| DUMLONG | 0 | 87 | 5.0506 | 1.6285 | 156 | 8.8988 | .0034* |
| | 1 | 39 | 5.9758 | 1.5655 | 394 | | |
| SADIST | 0 | 97 | 5.1119 | 1.6739 | 166 | 8.2000 | .0049* |
| | 1 | 29 | 6.0899 | 1.3879 | 441 | | |

Appendix H
Prediction Summary of all Dummy-Coded Independent Variables
on Career Length based on Simple Regression

| Indep Variable | Value | Cases | Mean Ln (Waiting Time) | Std Dev | Career (Days) | F | p = |
|----------------|-------|-------|------------------------|---------|---------------|--------|--------|
| Alcohol/Drugs | | | | | | | |
| ANYDRUG | 0 | 109 | 5.2925 | 1.6935 | 199 | .5787 | .4483 |
| | 1 | 17 | 5.6223 | 1.4345 | 277 | | |
| DRUNK | 0 | 82 | 5.1043 | 1.6610 | 165 | 4.7616 | .0310* |
| | 1 | 44 | 5.7709 | 1.5852 | 321 | | |
| Situation: | | | | | | | |
| ALLSTRGR | 0 | 44 | 5.9108 | 1.7291 | 369 | 8.5722 | .0041* |
| | 1 | 82 | 5.0291 | 1.5454 | 153 | | |
| ACQVIC | 0 | 113 | 5.2563 | 1.5403 | 192 | 2.6268 | .1076 |
| | 1 | 13 | 6.0389 | 2.4395 | 419 | | |
| NONEOUT | 0 | 69 | 5.3216 | 1.6427 | 205 | .0130 | .9094 |
| | 1 | 57 | 5.3556 | 1.6942 | 212 | | |

*

Statistically significant at the 95 % confidence level

**

Marginally statistically significant

Appendix I
Predictions of Career Length for
Minimum, Median, Mean, and Maximum Values
of Each Continuously Coded Independent Variable

| Independent Variable | Minimum | Median | Mean | Maximum |
|----------------------|----------|----------|---------|------------|
| Distance: | | | | |
| AVGDIS1 | | | | |
| Value* | 0 | 1.874 | 13.874 | 619.97 |
| Prediction** | 4.864555 | 4.871955 | 4.9193 | 7.31281653 |
| Days)*** | 130 | 131 | 137 | 1499 |
| AVDISX | | | | |
| Value | 0 | 1.811 | 6.392 | 138.99 |
| Prediction | 4.762586 | 5.444755 | 4.8999 | 7.74795 |
| Days) | 117 | 232 | 134 | 2317 |
| AVGDIS | | | | |
| Value | -2.99 | .727 | .700 | 6.430 |
| Prediction | 3.60338 | 4.943 | 4.9334 | 6.9987 |
| Days) | 37 | 140 | 139 | 1095 |
| AVDISX | | | | |
| Value | -2.99 | .661 | .628 | 4.93 |
| Prediction | 3.551 | 4.926 | 4.9137 | 6.534 |
| Days | 35 | 138 | 136 | 688 |
| | | | | |
| Curry: | | | | |
| AVGINJ | | | | |
| Value | 1 | 1.40 | 1.503 | 3.25 |
| Prediction | 5.058709 | 5.2895 | 5.3489 | 6.3569 |
| Days) | 157 | 198 | 210 | 577 |
| MODINJ | | | | |
| Value | 0 | 0 | 9.819 | 100 |
| Prediction | 5.234239 | 5.234239 | 5.34898 | 6.40284 |
| Days) | 188 | 188 | 210 | 213 |
| SEVINJ | | | | |
| Value | 0 | 0 | 1.436 | 50 |
| Prediction | 5.359657 | 5.359657 | 5.3393 | 4.6497 |
| Days) | 213 | 213 | 208 | 105 |
| RCBFCE | | | | |
| Value | 0 | 0 | 13.643 | 100 |
| Prediction | 5.191241 | 5.191241 | 5.3572 | 6.4075 |
| Days) | 180 | 180 | 212 | 606 |

Appendix I
Predictions of Career Length for
Minimum, Median, Mean, and Maximum Values
of Each Continuously Coded Independent Variable

| Indep Variable | Minimum | Median | Mean | Maximum |
|----------------|----------|----------|--------|----------|
| Planning: | | | | |
| AVGPLAN | | | | |
| Value | 1 | 3 | 2.94 | 5 |
| Prediction | 4.10927 | 5.34867 | 5.3115 | 6.5881 |
| (Days) | 61 | 210 | 203 | 726 |
| AVGSELEC | | | | |
| Value | 1 | 3 | 2.647 | 5 |
| Prediction | 4.64186 | 5.4847 | 5.3359 | 6.3275 |
| (Days) | 104 | 241 | 208 | 560 |
| PRCGUNBR | | | | |
| Value | 0 | 0 | 17.801 | 100 |
| Prediction | 5.433202 | 5.433202 | 5.343 | 4.9265 |
| (Days) | 229 | 229 | 209 | 138 |
| PERCBIND | | | | |
| Value | 0 | 0 | 26.732 | 100 |
| Prediction | 5.197682 | 5.197682 | 5.334 | 5.707582 |
| (Days) | 181 | 181 | 207 | 301 |
| | | | | |
| Race: | | | | |
| PERCHISP | | | | |
| Value | 0 | 0 | 2.214 | 100 |
| Prediction | 5.363995 | 5.363995 | 5.3397 | 4.266895 |
| (Days) | 214 | 214 | 209 | 71 |
| PERCBLCK | | | | |
| Value | 0 | 0 | 9.48 | 100 |
| Prediction | 5.392064 | 5.392064 | 5.3425 | 4.266895 |
| (Days) | 220 | 220 | 209 | 130 |
| PERCWHIT | | | | |
| Value | 0 | 89 | 71.416 | 100 |
| Prediction | 5.205453 | 5.369391 | 5.337 | 5.389653 |
| (Days) | 182 | 215 | 208 | 219 |
| PERCASN | | | | |
| Value | 0 | 0 | .780 | 66.667 |
| Prediction | 5.332835 | 5.332835 | 5.3365 | 5.6535 |
| (Days) | 219 | 207 | 208 | 207 |

Appendix I
Predictions of Career Length for
Minimum, Median, Mean, and Maximum Values
of Each Continuously Coded Independent Variable

| dependent variable | Minimum | Median | Mean | Maximum |
|--------------------------|----------|----------|--------|-----------|
| Psychological variables: | | | | |
| VGCRUEL | | | | |
| value | 0 | 0 | .209 | 1.3 |
| prediction | 4.941165 | 4.941165 | 5.3459 | 6.0590675 |
| days) | 140 | 140 | 210 | 428 |
| ERCDYS | | | | |
| value | 0 | 20 | 26.118 | 100 |
| prediction | 5.039505 | 5.262765 | 5.3311 | 6.155805 |
| days) | 154 | 193 | 207 | 472 |
| ERCHARM | | | | |
| value | 0 | 0 | 7.97 | 100 |
| prediction | 5.169791 | 5.169791 | 5.3531 | 7.470291 |
| days) | 176 | 176 | 211 | 1755 |
| ERCHOST | | | | |
| value | 0 | 0 | 4.043 | 50 |
| prediction | 5.387265 | 5.387265 | 5.342 | 4.827815 |
| days) | 219 | 219 | 209 | 125 |
| ERCLONG | | | | |
| value | 0 | 0 | 11.398 | 100 |
| prediction | 5.284680 | 5.284680 | 5.3442 | 5.75688 |
| days) | 197 | 197 | 209 | 316 |
| | | | | |
| Alcohol and | | | | |
| ERCDRNK | | | | |
| value | 0 | 0 | 11.984 | 100 |
| prediction | 5.255135 | 5.255135 | 5.3335 | 5.908935 |
| days) | 192 | 192 | 207 | 368 |
| ERCDRUG | | | | |
| value | 0 | 0 | 4.612 | 100 |
| prediction | 5.323131 | 5.323131 | 5.3412 | 5.715231 |
| days) | 205 | 205 | 209 | 304 |

Appendix I
Predictions of Career Length for
Minimum, Median, Mean, and Maximum Values
of Each Continuously Coded Independent Variable

| Indep Variable | Minimum | Median | Mean | Maximum |
|----------------|-------------------|---------------------|---------------------|--------------------|
| Situation: | | | | |
| PERCACQ | | | | |
| Value | 0 | 0 | 4.565 | 100 |
| Prediction | 5.239874 | 5.239874 | 5.3671 | 8.026574 |
| (Days) | 189 | 189 | 214 | 3061 |
| PERCOUT | | | | |
| Value | 0 | 20 | 38.323 | 100 |
| Prediction | 5.536753 | 5.424853 | 5.3223 | 4.977253 |
| (Days) | 254 | 227 | 205 | 145 |
| PRCSTRG2 | | | | |
| Value | 0 | 100 | 90.087 | 100 |
| Prediction | 7.413396 | 5.120896 | 5.3482 | 5.120896 |
| (Days) | 1658 | 168 | 210 | 168 |
| PRCSTRGR | | | | |
| Value | 0 | 100 | 86.557 | 100 |
| Prediction | 6.155382 | 5.210882 | 5.3379 | 5.210882 |
| (Days) | 471 | 183 | 208 | 183 |
| | | | | |
| Waiting | | | | |
| LN | | | | |
| Value | -.69 (.5 days) | 4.088 (60 days) | 4.124 (62 days) | 7.76 (2345 days) |
| Prediction | .67557731 | 5.302597 | 5.3375 | 8.858566 |
| (Days) | 2 | 201 | 208 | 7034 |
| | | | | |
| LOGNTOT | | | | |
| Value | 0 (1 rape) | 1.386 (4 rapes) | 1.386 (4 rapes) | 2.83 (17 rapes) |
| Prediction | 3.494365 | 5.161656 | 5.16166 | 6.8987 |
| (Days) | 33 | 175 | 175 | 991 |
| LOGRATE | | | | |
| Value | -4.35 (.013 rapes | -.673 (.5 rapes per | -.708 (.5 rapes per | 4.11 (61 rapes per |
| Prediction | 8.8634 | 5.30269 | 5.3366 | .67083 |
| (Days) | 7069 | 201 | 208 | 2 |

Appendix I
Predictions of Career Length for
Minimum, Median, Mean, and Maximum Values
of Each Continuously Coded Independent Variable

Value: The exact minimum, median, mean, or maximum value of that particular independent variable in the dataset

Prediction: The prediction of the career length measured as natural log of the number of days from the first to the last rape reported in the dataset based on a simple regression of the natural log of career length on that particular independent variable

Days: Converted Prediction; the predicted career length measured in actual days; converted by raising the constant e to the value of the natural log prediction

Appendix J
Predictions of Waiting Time for
Minimum, Median, Mean, and Maximum Values
of Each Continuously Coded Independent Variable

| Indep Variable | Minimum | Median | Mean | Maximum |
|----------------|----------|----------|----------|---------|
| Distance: | | | | |
| AVGDIS1 | | | | |
| Value | 0 | 1.874 | 13.874 | 619.97 |
| Prediction | 3.753795 | 3.76473 | 3.83476 | 7.37194 |
| (Days) | 43 | 43 | 46 | 1591 |
| AVGDISX | | | | |
| Value | 0 | 1.811 | 6.392 | 138.99 |
| Prediction | 3.644077 | 3.688805 | 3.801947 | 7.07685 |
| (Days) | 38 | 40 | 45 | 1184 |
| LNAVGDIS | | | | |
| Value | -2.99 | .727 | .700 | 6.430 |
| Prediction | 2.43019 | 3.86147 | 3.8511 | 6.05749 |
| (Days) | 11 | 48 | 47 | 427 |
| LNAVDISX | | | | |
| Value | -2.99 | .661 | .628 | 4.93 |
| Prediction | 2.484 | 3.829086 | 3.318693 | 5.40185 |
| (Days) | 12 | 46 | 28 | 222 |
| | | | | |
| Injury: | | | | |
| AVGINJ | | | | |
| Value | 1 | 1.40 | 1.503 | 3.25 |
| Prediction | 3.84903 | 4.07668 | 4.135298 | 5.12956 |
| (Days) | 47 | 59 | 63 | 169 |
| PCMODINJ | | | | |
| Value | 0 | 0 | 9.819 | 100 |
| Prediction | 4.006399 | 4.006399 | 4.13719 | 5.3384 |
| (Days) | 55 | 55 | 63 | 208 |
| PCSEVINJ | | | | |
| Value | 0 | 0 | 1.436 | 50 |
| Prediction | 4.15077 | 4.15077 | 4.1285 | 3.31882 |
| (Days) | 63 | 63 | 62 | 28 |
| PERCBFCE | | | | |
| Value | 0 | 0 | 13.643 | 100 |
| Prediction | 3.970485 | 3.970485 | 4.144706 | 5.24749 |
| (Days) | 53 | 53 | 63 | 190 |

Appendix J
Predictions of Waiting Time for
Minimum, Median, Mean, and Maximum Values
of Each Continuously Coded Independent Variable

| dep variable | Minimum | Median | Mean | Maximum |
|-----------------|----------|----------|----------|----------|
| anning: | | | | |
| VGPLAN | | | | |
| alue | 1 | 3 | 2.94 | 5 |
| ediction | 4.193488 | 4.682304 | 4.6676 | 5.17112 |
| ays) | 66 | 108 | 106 | 176 |
| VGSELEC | | | | |
| alue | 1 | 3 | 2.647 | 5 |
| ediction | 3.724063 | 4.206426 | 4.122909 | 4.692723 |
| ays) | 41 | 67 | 62 | 109 |
| RCGUNBR | | | | |
| alue | 0 | 0 | 17.801 | 100 |
| ediction | 4.206426 | 4.206426 | 4.128707 | 3.7698 |
| ays) | 67 | 67 | 62 | 43 |
| ERCBIND | | | | |
| alue | 0 | 0 | 26.732 | 100 |
| ediction | 4.043929 | 4.043929 | 4.121826 | 4.33533 |
| ays) | 57 | 57 | 62 | 76 |
| | | | | |
| ace: | | | | |
| ERCHISP | | | | |
| alue | 0 | 0 | 2.214 | 100 |
| ediction | 4.151074 | 4.151074 | 4.12629 | 3.03157 |
| ays) | 64 | 64 | 62 | 21 |
| ERCBLCK | | | | |
| alue | 0 | 0 | 9.48 | 100 |
| ediction | 4.212410 | 4.212410 | 4.1324 | 3.36861 |
| ays) | 68 | 68 | 62 | 29 |
| ERCWHIT | | | | |
| alue | 0 | 89 | 71.416 | 100 |
| ediction | 3.866545 | 4.18677 | 4.1235 | 4.226345 |
| ays) | 48 | 66 | 62 | 69 |
| ERCASN | | | | |
| alue | 0 | 0 | .780 | 66.667 |
| ediction | 4.119015 | 4.119015 | 4.12308 | 1.43095 |
| ays) | 62 | 62 | 62 | 4 |

Appendix J
Predictions of Waiting Time for
Minimum, Median, Mean, and Maximum Values
of Each Continuously Coded Independent Variable

| Indep Variable | Minimum | Median | Mean | Maximum |
|--------------------------|----------|----------|----------|---------|
| Psychological Variables: | | | | |
| AVGCRUEL | | | | |
| Value | 0 | 0 | .209 | 1.3 |
| Prediction | 4.084641 | 4.084641 | 4.12697 | 4.3479 |
| (Days) | 59 | 59 | 62 | 77 |
| PERCDYS | | | | |
| Value | 0 | 20 | 26.118 | 100 |
| Prediction | 3.867579 | 4.0677 | 4.12892 | 4.8682 |
| (Days) | 48 | 58 | 62 | 130 |
| PERCHARM | | | | |
| Value | 0 | 0 | 7.97 | 100 |
| Prediction | 3.964144 | 3.964144 | 4.13891 | 6.1569 |
| (Days) | 53 | 33 | 63 | 472 |
| PERCHOST | | | | |
| Value | 0 | 0 | 4.043 | 50 |
| Prediction | | | | |
| (Days) | | | | |
| PERCLONG | | | | |
| Value | 0 | 0 | 11.398 | 100 |
| Prediction | 4.065730 | 4.065730 | 4.131485 | 4.64263 |
| (Days) | 58 | 58 | 62 | 104 |
| | | | | |
| Alcohol and | | | | |
| PERCDRINK | | | | |
| Value | 0 | 0 | 11.984 | 100 |
| Prediction | 4.007739 | 4.007739 | 4.118555 | 4.93244 |
| (Days) | 55 | 55 | 62 | 139 |
| PERCDRUG | | | | |
| Value | 0 | 0 | 4.612 | 100 |
| Prediction | 4.101135 | 4.101135 | 4.13033 | 4.73424 |
| (Days) | 60 | 60 | 62 | 114 |
| | | | | |

| Variable | Minimum | Median | Mean | Maximum |
|----------|------------|-----------------|-----------------|-----------------|
| ation: | | | | |
| ACQ | | | | |
| ue | 0 | 0 | 4.565 | 100 |
| diction | 3.988720 | 3.988720 | 4.16529 | 7.85652 |
| ys) | 54 | 54 | 64 | 2583 |
| OUT | | | | |
| ue | 0 | 20 | 38.323 | 100 |
| diction | 4.136481 | 4.129227 | 4.12258 | 4.100211 |
| ys) | 63 | 62 | 62 | 60 |
| STRG2 | | | | |
| ue | 0 | 100 | 90.087 | 100 |
| diction | 6.807778 | 3.844178 | 4.13796 | 3.844178 |
| ys) | 905 | 47 | 63 | 47 |
| STRGR | | | | |
| ue | 0 | 100 | 86.557 | 100 |
| diction | 5.545485 | 3.904485 | 4.125085 | 3.904485 |
| ys) | 256 | 50 | 62 | 50 |
| | | | | |
| eer: | | | | |
| GNTOT | | | | |
| ue | 0 (1 rape) | 1.386 (4 rapes) | 1.386 (4 rapes) | 2.83 (17 rapes) |
| diction | 4.303208 | 4.14063 | 4.14063 | 3.97125 |
| ys) | 74 | 63 | 63 | 53 |
| GNCAR | | | | |
| ue | 0 (1 day) | 5.427 | 5.337 | 8.41 |
| diction | -.055283 | 4.193998 | 4.16036 | 6.5291655 |
| ys) | 1 | 66 | 64 | 685 |

ays): Converted Prediction; the predicted career length measured in actual days; converted by raising the constant e to the value of the natural log prediction

Appendix K
Multiple Regression Models of Career Length

Resulting Multiple Regression Equations after backward elimination:

Model 1:

$$\begin{aligned} \text{LN(Career Length)} = & 10.984311 + .038829 (\text{PCMODINJ}) + .856257 (\text{ANYDYS}) - .013422 \\ & (\text{PRCGUNBR}) + .439352 (\text{DUNLONG}) + .019979 (\text{AVGDISX}) + .634603 (\text{INJURE1}) + 5.490994 \\ & (\text{ACQVIC}) + .009116 (\text{PERCOUT}) + .927007 (\text{BLUNT}) + .025941 (\text{PRCSTRGR}) + .341982 \\ & (\text{LNAVDISX}) + .700102 (\text{INJDUM}) - 2.817316 (\text{AVGINJ}) - .267864 (\text{PERCACQ}) \end{aligned}$$

$$\text{RSQ} = .53148, F(15,62) = 4.68870, p = .0000$$

Model 2:

$$\begin{aligned} \text{LN(Career Length)} = & 6.424594 - .017792 (\text{PRCGUNBR}) + 1.284765 (\text{ANYDYS}) + .481361 \\ & (\text{LNAVDISX}) + .008932 (\text{PERCOUT}) + 1.576362 (\text{INJDUM}) + .026707 (\text{PRCSTRGR}) + .449857 \\ & (\text{AVGPLAN}) - .011558 (\text{PERCDYS}) - 1.225086 (\text{AVGINJ}) + .346355 (\text{ANYCRUEL}) - .053054 \\ & (\text{PRCSTRG2}) \end{aligned}$$

$$\text{RSQ} = .45291, F(11,66) = 4.96720, p = .0000$$

Model 3:

$$\begin{aligned} \text{LN(Career Length)} = & 4.267725 - .583587 (\text{ALLSTRGR}) + .839889 (\text{INJDUM}) + .831937 \\ & (\text{ANYDYS}) + .347210 (\text{LNAVDISX}) \end{aligned}$$

$$\text{RSQ} = .28692, F(4,73) = 7.34305, p = .0001$$

Model 4:

$$\begin{aligned} \text{LN(Career Length)} = & .632059 - .475639 (\text{ALLSTRGR}) + .632861 (\text{ANYDYS}) + 1.019567 (\text{LN} \\ & \text{Waiting Time}) + .209592 (\text{DUMLONG}) - .272406 (\text{ANYWHIT}) - .007164 (\text{PERCBIND}) + \\ & .810462 (\text{INJURE1}) + .444529 (\text{ANYCRUEL}) - .003795 (\text{PERCOUT}) + .009922 (\text{PRCSTRGR}) + \\ & .332019 (\text{AVGPLAN}) - .010750 (\text{PERCDYS}) + .683247 (\text{INJDUM}) - .770977 (\text{AVGCRUEL}) - \\ & .219685 (\text{SADIST}) - .267335 (\text{AVGSELEC}) + .603049 (\text{ANYBIND}) - .786645 (\text{AVGINJ}) \end{aligned}$$

$$\text{RSQ} = .92451, F(18,59) = 40.14093, p = .0000$$

Model 5:

$$\begin{aligned} \text{LN(Career Length)} = & -.080474 - .572850 (\text{ALLSTRGR}) - .009982 (\text{PERCBFCE}) + .989207 (\text{LN} \\ & \text{Waiting Time}) + .787720 (\text{ANYDYS}) + .201061 (\text{DUMLONG}) - .501533 (\text{SADIST}) - 1.421020 \\ & (\text{AVGCRUEL}) - .002691 (\text{PERCOUT}) + .680928 (\text{INJDUM}) + .009785 (\text{PRCSTRGR}) + .345453 \\ & (\text{AVGPLAN}) - .014755 (\text{PERCDYS}) + .753783 (\text{ANYCRUEL}) - .196001 (\text{AVGSELEC}) \end{aligned}$$

$$\text{RSQ} = .90212, F(15,62) = 38.09381, p = .0000$$

Appendix K
Multiple Regression Models of Career Length

el 6 was developed using simultaneous entry. Resulting equation:

el6:

$$\text{Career Length} = -.853423 + .028866 (\text{DRUNK}) + .016829 (\text{AVGINJ}) + 1.312919 (\text{LN Total} \\ \text{es}) + .990716 (\text{LN Waiting Time}) + .022294 (\text{AVGSELEC})$$

$$r = .99825, F(5,120) = 13711.02072, p = .0000$$

Appendix L
Multiple Regression Models of Waiting Time

Resulting Multiple Regression Equations after backward elimination:

Model 1:

$$\begin{aligned} \text{LN(Waiting Time)} = & 12.531474 + .801019 (\text{ALLSTRGR}) + .032810 (\text{PCMODINJ}) - .012519 \\ & (\text{PRCGUNBR}) + .687598 (\text{BLACTHRD}) + .013888 (\text{AVGDISX}) - .024435 (\text{PERCHOST}) - \\ & .198858 (\text{AVGSELEC}) + .898234 (\text{BLUNT}) + 6.451195 (\text{ACQVIC}) + .416275 (\text{LNAVDISX}) + \\ & .588099 (\text{INJURE2}) + .016742 (\text{PRCSTRGR}) + .011291 (\text{PERCDYS}) - 2.212246 (\text{AVGINJ}) - \\ & .087400 (\text{PRCSTRG2}) - .301578 (\text{PERCACQ}) \end{aligned}$$

$$\text{RSQ} = .54267, F(16,61) = 4.52400, p = .0000$$

Model 2:

$$\begin{aligned} \text{LN(Waiting Time)} = & 5.412332 - .552760 (\text{NONEOUT}) + .412427 (\text{LNAVGDIS}) - .403762 \\ & (\text{ANYGUN}) - .501812 (\text{ALLSTRGR}) + .823710 (\text{BLUNT}) + .516001 (\text{ANYDYS}) - 1.096107 \\ & (\text{HOSTILE}) - 1.127857 (\text{AVGINJ}) \end{aligned}$$

$$\text{RSQ} = .34026, F(8,62) = 3.99709, p = .0007$$

Model 3:

$$\begin{aligned} \text{LN(Waiting Time)} = & 4.956227 - .022195 (\text{PRCSTRG2}) + .030563 (\text{PERCBFCE}) + .431825 \\ & (\text{LNAVGDIS}) + .641745 (\text{AVGPLAN}) - .015261 (\text{PRCGUNBR}) + .841087 (\text{AVGCRUEL}) + \\ & .006447 (\text{PERCBLCK}) + .017644 (\text{PERCDYS}) + .021941 (\text{PERCHARM}) - .053804 \\ & (\text{PERCHOST}) - .004950 (\text{PERCBIND}) + .011115 (\text{PERCOUT}) - 1.458342 (\text{AVGINJ}) \end{aligned}$$

$$\text{RSQ} = .49568, F(13,57) = 4.30950, p = .0001$$

Model 4:

$$\begin{aligned} \text{LN(Waiting Time)} = & 5.468639 - .013217 (\text{PRCSTRG2}) - .014138 (\text{PRCGUNBR}) + .006087 \\ & (\text{PERCDYS}) - .602264 (\text{AVGINJ}) + .456618 (\text{LNAVGDIS}) + .713816 (\text{BLUNT}) \end{aligned}$$

$$\text{RSQ} = .31960, F(6,72) = 5.63664, p = .0001$$

Model 5 developed using simultaneous entry. Resulting equation:

Model 5:

$$\begin{aligned} \text{LN(Waiting Time)} = & 5.485646 - .014604 (\text{PRCSTRG2}) - .474289 (\text{ANYGUN}) + .688795 (\text{BLUNT}) \\ & + .458298 (\text{LNAVDISX}) - .889879 (\text{INJURE1}) \end{aligned}$$

$$\text{RSQ} = .26271, F(5,72) = 5.13097, p = .0004$$

**APPENDIX D: PREDICTING MTC:R3 RAPIST TYPES
FROM CRIME SCENE VARIABLES**

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Review of Design

This study focused predominantly on two samples of subjects--the FBI crime scene sample [n = 116]) and a sample of rapists from the Massachusetts Treatment Center (MTC; n = 254). In examining the frequencies of variables, a small sample of serial rapists from the FBI was also analyzed (n = 25). The FBI crime scene sample had one major drawback--the data on this sample lacked detailed information about the offender. The second sample, which we will refer to as the MTC sample, did not have as detailed and extensive crime scene information available as the FBI sample, but the offender information coded on this sample was comprehensive.

To maximize the strengths of each data base, we implemented the bootstrapping analysis strategy that is depicted in Figure 1. The analytic strategy involved using the FBI samples to generate composites of crime scene variables that showed the greatest predictive promise because of the adequacy of their frequency and their demonstrated within-crime or cross-crime consistency. Next, among crime scene variables that had been assessed on the MTC sample we identified analogous composites, which we then used to predict type classification.

The preliminary theoretical aspects of this strategy (Steps 1 and 2 in Figure 1) are described in the Method, and the empirical steps (3 through 6) constitute the major questions addressed in the Results.

Subjects

FBI Sample

The primary FBI crime scene sample was composed of 116 subjects who

committed a total of 573 offenses against adult women. In the analysis of the frequency of variables in the crime, we also assessed a small sample of serial rapists (n=25) whose crimes had been rated on a set of variables similar to those used on the larger crime scene sample. Both samples have been described in detail earlier in this report.

MTC Sample

This second primary sample of subjects included 254 repetitive and/or aggressive male rapists, who had been civilly committed as sexually dangerous between 1959 and 1991 to the MTC in Bridgewater, Massachusetts. The MTC was established in 1959 under special legislation for the purpose of evaluating and treating individuals convicted of repetitive and/or aggressive sexual offenses. The legislation provided for a civil, day-to-life commitment for those deemed to be "sexually dangerous." For this sample the term rapist referred to an adult male whose sexual offenses were committed against adult women (i.e., age >16). A sexual offense was defined as any sexually motivated assault involving physical contact with the victim.

Procedures

Clinical File Coding and Abstraction

Archival criminal files. The primary data source for subtyping subjects and for coding variables was an offender's extensive clinical file, which included all information gathered during the man's evaluation and commitment periods at the treatment center. Information collected during the evaluation or observation period included, in addition to police crime scene reports, victim descriptions of crimes, and court testimonies, reports of diagnostic and psychometric assessments and clinical interviews conducted as part of the

luation itself, data from multiple sources external to the treatment center, such as past institutionalization records, school and employment reports, police reports, court testimony, parole summaries, probation records, and social service notes. These reports only originated from different agencies, but were also written at different points in the subject's life to describe events as they were occurring at that time. In almost all cases (% or higher), social service and school reports were available that predated the subject's first arrest for a sexual offense. Access to these original reports helped to interact the retrospective biases inherent in file research based largely on summary reports of a subject's life, written after events of particular importance have already taken place. Post-commitment information routinely available included such treatment center records as treatment reports, behavioral observation reports, work reports, and summaries of program participation.

File rating procedures. The files were rated using a set of rationally scaled variables that were created after we had reviewed the literature (see Knight et al., 1985). We closely examined the clinical files that were the data source for the ratings. Levels on scales were criterion based and tailored to the information available in the files. The content and structure of the individual scales are described in the tables in which they appear.

Although in our rapist classification procedure (see below) we used the full range of data available, the primary focus of the analyses in the present study was the variables in the sexual offense section of our coding dictionary, which contained ratings for each separate offense, derived from victim reports, police crime scene reports, medical

examinations, and victim trial testimony. We analyzed the ratings of the crime that immediately preceded the offender's apprehension, conviction, and commitment, because these were the most comprehensively described.

Two trained research assistants independently coded and rated each file and then met to reach a consensus agreement. If discrepancies existed, interrater reliabilities were calculated on the independent, preconsensus ratings. Because consensus ratings were used in all subsequent analyses, the reliability estimates are Spearman-Brown transformations of the preconsensus ratings, reflecting the increased reliability gained by averaging judgments (see Roff, 1981). Reliabilities ranged from .80 to .98.

During the coding process a research assistant created, for each offender, a case-history abstract that contained all essential life-history and criminal data. These abstracts were used for classification purposes.

Classification Procedure

Assigning rapists to types. Abstracts created by the above procedure were read by two of a group of six clinicians or research assistants trained in the use of the MTC Rapist Typology, Version 3 (MTC:R3). Assignment to types in this typology was achieved when an offender met a specific set of criteria for each type (available from the authors).

Each rater independently assigned each offender to one of the nine MTC:R3 types. When two raters disagreed on a type assignment, they met to resolve their discrepancy and reach consensus. In the rare instances in which they could not reach a mutually satisfactory type classification, a third rater made an independent rating, and this rating was used to resolve the discrepancy. The overall interrater reliability of classification for

4 offenders was good, according to Cicchetti and Sparrow's (1981) interpretive guidelines for kappa coefficients, ($k = .68$). All of the analyses presented in this study were computed on the consensus classifications.

The MTC:R3 typology. Figure 2 depicts the most recent revision of our rapist typology (Rapist typology, Version 3: MTC:R3). This system is a prototypical model whose structure was generated by juxtaposing types according to their proximity on cluster dendrograms and the similarities of their profiles on critical variables (e.g., lifestyle impulsivity/antisocial behavior, social competence, aggression in their sexual assaults, expressive aggression, and sexualization) (see Knight & Prentky, 1990). Four primary motivations for rape emerged from our typological analyses and from the ordering of types according to profile similarities--opportunity, pervasive anger, sexual gratification, and vindictiveness. These four motivations appear to be related to enduring behavioral patterns that distinguish particular groups of offenders.

For the Opportunistic types (Types 1 and 2 in Figure 2) the sexual assaults appear to be impulsive, predatory acts, controlled more by situational and contextual factors (e.g., woman present during commission of another crime, woman encountered in a bar or at a party) than by sexual fantasy or explicit anger at women. These offenders are subdivided on the basis of their social competence and the developmental stage at which their high impulsivity first was manifested. Whereas Type 1 offenders are higher in social competence and first manifested impulsivity in adulthood, Type 2 are lower in achieved social competence and initially manifested disruptive behavior in adolescence.

The primary motivation for the Pervasively Angry type (Type 3) is hypothesized to

be global and undifferentiated anger that pervades all areas of the offender's life (i.e., these offenders are equally likely to express their unmanageable aggression at men and women). These men have long histories of unsocialized aggressive behavior, of which rape is just another form. Their offenses are characterized by high levels of expressive aggression, and they cause their victims high levels of physical injury.

There are four types whose motivation is hypothesized to be "sexual" (i.e., marked by the presence of protracted sexual or sadistic fantasies that influence as well as sustain the rapes). These offenders (Types 4, 5, 6, and 7 in Figure 2) have in common some form of enduring sexual preoccupation. This preoccupation may be distorted by the fusion of sexual and aggressive feelings (Types 4 and 5) or be characterized by dominance needs and/or acute feelings of inadequacy (Types 6 and 7). The Sadistic rapists (Types 4 and 5) are further divided in Overt and Muted types on the basis of whether their sexual-aggressive fantasies are directly expressed in violent attacks or are only fantasized. The Nonsadistic Sexual rapists (Types 6 and 7) are subdivided on their achieved level of social competence.

The final hypothesized motivation involves exclusive misogynistic anger. It is hypothesized that for the two Vindictive offender types (8 and 9) women are a central and exclusive focus of their anger. The sexual assaults of these men are distinguished by behaviors that are explicitly intended to harm the woman physically, as well as to degrade and humiliate her. Like the Opportunistic and Nonsadistic Sexual types, these offenders also are subdivided on the basis of their achieved social competence.

Dichotomizing types for predictive analyses. Although the model is not designed

ifically as a hierarchical one, nonetheless, as is illustrated in the Table 1, the types can be grouped according to whether they are hypothesized to be high or low on a set of theoretically operationalized dimensions. In this table the types are listed in the leftmost column and the dimensions that discriminate among the types are indicated both at the top of the table and down the last column of the table. These critical, type defining dimensions include the following behavioral domains: (a) juvenile and adult antisocial behavior, (b) social competence, (c) expressive aggression in the crime, (d) offense planning, (e) global or pervasive anger, (f) overt and muted sadism, (g) sexualization of sexual thoughts and fantasies, paraphilic behaviors, etc.), and (h) hostility toward women.

These dimensions served as the primary focus of the present crime scene investigation. We combined types into dichotomous groups hypothesized to be high and low on these dimensions and used the crime scene indicators to predict these dichotomous groupings. For instance, we predicted whether the offender was classified into the group of types shown in the first column to be high in adult antisocial behavior or into the group of types shown to be low in adult antisocial behavior. Use of such dichotomization had a distinct benefit of increasing the power of our analyses. A much larger n would be required to predict single types.

Postulating crime-scene indicators of type classification. On the basis both of the extensive, detailed criteria used to classify offenders and on the basis of our empirical research studying the correlates of these types (cf. Knight & Prentky, 1990; Prentky & Knight, 1991; Prentky, Knight, & Rosenberg, 1988) we devised a list of potential crime-

scene discriminators for each of these criterion dimensions. This process corresponds to Step 1 in Figure 1.

We then preceded to study the FBI coding dictionary to identify those crime scene variables in the dictionary that might be useful scale items to create analog dimensions for predicting the MTC:R3 classification. This corresponds to Step 2 in Figure 1. In many instances we had to recode these FBI variables into appropriately structured scales for MTC: R3. Examples of such variables are presented in the Tables 2 and 3. These present the preliminary dimensions that were selected for the categories of social competence and sexualization. The various dimensions had to be recoded to be appropriate for the judgments that we wished to make. In the tables the general category is cited and the frequency with which the usable components of these categories were rated in the most recent crime in the FBI crime-scene sample.

Results

Analysis of Variable Frequency in the FBI Samples

In both the most recent crime in the FBI serial rapist sample and the foremost recent crimes in the FBI crime scene samples, we calculated the frequencies of all those variables that we had identified as potential crime scene discriminators for MTC:R3 classification. We had two intents in examining these frequencies: (a) to eliminate those variables that were coded so infrequently or frequently that they were useless as type delimiters (too much missing information or so pervasive that they would not discriminate), and (b) to focus, where possible, on those variables that seemed to be coded with approximately the same frequency that they had appeared in our coding of the

TC sample. The rationale for the latter intent was that if the appropriate amount of information was being garnered from the victim description, it should correspond to some degree with the information that was available in the more extensive data source we had available about a similar sample of offenders. The acceptable frequency levels varied across domains. For instance, variables measuring sadistic behavior were considered appropriate for analysis if the frequency was 5% to 15%, approximating the base rate of such behaviors in the MTC sample. Higher frequencies were required for variables measuring antisocial behavior, which should be present in 40-50% of the sample. In general, the domains for which variables with adequate frequencies were found included adult unsocialized behavior, offense planning, expressive aggression, sadism, sexualization, and anger, both generalized and focused exclusively on women.

Analysis of Within and Across Crime Consistencies

Once we had used the frequencies to limit indicators to those with the best potential, we assessed how the sets of remaining variables within each domain cohered into homogenous groups and what the consistency of these indicators was across various times. These analyses were calculated on the FBI crime scene sample.

Within-crime consistencies. The procedure for measuring within-crime homogeneity involved computing the internal consistencies (i.e., Cronbach alphas) for related groups of variables within a single crime scene. Eight domains were assessed: Adult Unsociated Behavior, Expressive Aggression, Pervasive Anger, Sexualization, Relation to Victim, Vindictive, Sadism, and Planning. In addition to alphas, we also assessed the correlations of each variable within a domain with the total domain scale

score. For each of the eight domains Table 4 presents: (a) the item to scale correlations for the most recent crime, (b) the most recent crime internal consistency for all relevant variables, regardless of cross-crime consistency status (Total Scale α), and (c) for each of the five most recent crimes the internal consistencies among the items that were determined to have cross-crime stability. As can be seen in this table, the Total Scale Cronbach alphas ranged from very low (Pervasive Anger, $\alpha = .36$) to high (Sadism, $\alpha = .82$). It is noteworthy that with the exception of Pervasive Anger, the alphas for the Total Scales exceeded those alphas that excluded variables that did not have any cross-crime consistency.

Across-crime consistency. For these same eight domains we also assessed the stability of the individual items and the total domain scales across offenders' five most recent crimes. We limited the observations of crime scene data to the most recent five offenses, because the number of subjects declined as the number of criminal assaults increased, (crime scene #5: $N = 48$). Table 5 presents the scale that we developed to summarize the overall consistency for a behavior or set of behaviors across the five most recent crimes. This six-point Guttman scale varies from none (no cross-crime consistency) to very high (consistently present or absent across the five crimes).

Table 6 gives the consistency ratings both for the individual items in each domain and the total domain scale. There was a wide variation in the consistency of behaviors across crimes with behaviors like "demeaning about the victim" and "fetishes" having none and "victim bound" and "nature of the binding material" showing very high consistency. An important finding was that the composite scales

aded to be more consistent than the items they comprised. Moreover, with the ceptions of Vindictiveness and Pervasive Anger these composite scales showed at least oderate consistency.

otstrapping Predictive Validity

In the final set of analyses we attempted to predict MTC:R3 rapist type assification from the MTC crime scene variables that were judged to be analogous to ose dimensions that had shown the best within and across crime consistency in FBI ime scene sample. As we indicated in the Method section, the MTC:R3 rapist types are combined in a variety of ways, so that the resulting dichotomous groups represented e presence or absence of specific taxonomic criterion domains. The criterion chotomous groups used in the present analyses included: Antisocial Behavior (high types 1, 2, 3, 4] vs. low [Types 6, 7, 8, 9]); Expressive Aggression (high [Types 3, 4, 8, vs. low [Types 1, 2, 5, 6, 7]); Pervasive Anger (high [Type 3] vs. low [Types 6, 7, 8,); Sexualization (high [Types 4, 5, 6, 7] vs. low [Types 1, 2, 3, 8, 9]); Nonsadistic- xual or "Compensatory" (high [Types 6, 7] vs. low [Types 1, 2, 3, 4, 8, 9]) ; Overt idism (high [Types 4] vs. low [Types 1, 2, 3, 6, 7, 8, 9]); and Offense Planning (high types 4, 6, 7] vs. low [Types 1, 2, 3, 8, 9]). The predictive sets of crime-scene variables are derived from the MTC codings of the offender's most recent crime, which was pically the crime that had led to his commitment and for which the most detailed archival ata were available.

We used four different measures of predictive accuracy to assess the efficacy of ese variables in identifying taxonomic classification: (1) Sensitivity refers to the percent

of offenders in a particular taxonomic category who were correctly identified by the crime scene indicator. (2) Positive predictive power refers to the percent of offenders correctly identified as being in a taxonomic category, when the crime scene indicator predicted a particular taxonomic classification. (3) Negative predictive power refers to the percent of offenders who were correctly identified as not being in the taxonomic category, when the crime scene indicator predicted that a particular taxonomic classification was not evident. (4) Overall chance-correlated accuracy was assessed by Cohen's Kappa X 100%. This final measure represents the percent improvement over chance in the general hit rate.

Table 7 presents the results of these analyses. As can be seen in this table, Expressive Aggression yielded the best overall predictive accuracy; Adult Antisocial Behavior and Sadism were moderately accurate; Sexualization and Compensatory/Pseudounselfish behavior were marginal; and Pervasive Anger and Vindictiveness did not work at all. It is important to note that the various crime-scene indicators differed in the kind of predictive information that they provided. For example, the crime-scene indicators of Expressive Aggressive types showed consistently high positive predictive accuracy, but only moderate negative predictive power, and extremely mixed sensitivity. Thus, if one or more of these indicators were present, an investigator could be very certain that he or she was dealing with an Expressively Aggressive offender (positive predictive accuracy), but the absence of such indicators was only moderately effective at excluding the possibility that the offender was an Expressively Aggressive Type (negative predictive accuracy). A number of the indicators only identified a small proportion of all of the Expressively Aggressive offenders (sensitivity). In contrast,

cific indicators were not good at identifying a Sadistic offender (positive predictive accuracy), but their absence strongly indicated that the offender was not likely to be sadistic. These results were partially due to the infrequency of both sadistic indicators and sadism.

For several domains (antisocial behavior, expressive aggression, and sadism) we were able to create composite crime-scene scales by combining those individual indicators that significantly increased overall accuracy. In all three instances the composite tended to maximize all the kinds of predictive accuracy, suggesting that the identification and measurement of additional indicators may be able to continue to increase profiling accuracy.

For pervasive anger, sexualization, compensation, vindictiveness, and offense planning such composites were not possible. For pervasive anger and offense planning we did not have any crime-specific measures that we could examine in the MTC sample. For each of these two domains the measures in the table were global, cross-crime ratings that were included to determine whether there was some potential to develop such measures, if one of the FBI indicators were applied. For vindictiveness, neither of the crime-scene indicators we were able to test worked. For both sexualization and compensation/pseudounselfishness only one indicator predicted type assignment. For each of these last two domains we made a cross-domain composite combining the two indicators (fetishes and sensitivity) that had shown at least minimal increase in predictive accuracy. In both instances, the composite improved some aspects of predictive accuracy.

Discussion

The present study was a bootstrapping operation that attempted in nonoptimal circumstances to assess the potential for determining typological classification from crime-scene information. Although each of the data bases examined had specific strengths, each also had a substantial weakness. The FBI sample lacked substantive information on the offenders. The MTC data base had rich offender information, but contained only minimal crime scene information. Consequently, we attempted to take advantage of the strengths of each data base. We assessed the within and across crime consistency of indicators on the FBI sample, and used the results of these analyses to select and test the predictive accuracy of analogous variables on the MTC sample. The fact that only a small subset of the potential crime scene indicators identified in the FBI sample had been measured in the MTC sample means that the potential for a Type II error was high. Despite this limitation the results of the predictive analyses clearly indicated that the potential for developing a crime-scene based topological were promising and this line of research should be pursued. We will summarize the results for each domain.

Adult Antisocial Behavior

In the crime scene sample only very weak within-crime, internal consistency emerged, but moderate cross-crime consistency suggested the potential for some classification efficacy. In the MTC analog analyses, the analog variables held together somewhat better than in the FBI sample. Three of the four crime scene variables significantly predicted the antisocial taxonomic dichotomy, showing consistent moderate increases in all conditional probability indices. The crime scene composite scale did fairly

well and with the sole exception of sensitivity tended to maximize prediction. When composite scores are used, one can manipulate cutoffs or create trichotomous outcomes (definitely not, possibly yes, and definitely yes). Each of these techniques improved prediction in the present sample. Because such post hoc manipulation takes advantage of chance and requires cross-validation, we did not present these analyses here. They suggest, however, that even higher predictive accuracy might be attained in future research.

Expressive Aggression

In the FBI crime scene sample expressive aggression showed substantial within crime internal consistency. The composite scale showed moderate cross crime consistency. It is also interesting to point out that one gets some increase in cross crime consistency if one includes in one's scale all of the indicators of Expressive Aggression, and not just those with individual indication of a least a modicum of cross crime consistency.

For comparison purposes we also presented along with the specific crime-scene indicators a global, cross-crime judgment of expressive aggression. It is noteworthy that the crime scene composite actually out performed this global rating of general aggression. On one hand the high predictive ability of crime scene indicators for classification of offenders as Expressively Aggressive seems reasonable, because aggression in the crime is such a significant component of the classification judgment. On the other hand, the fact that such high hit rates can come from such concrete measures as medical damage in one crime are encouraging, both from the standpoint of simplifying the classification criteria, and from the perspective of being able to know with fairly high probability the presence of this type of offender from relatively simple crime scene data. Certainly, these data are quite

encouraging.

Pervasive Anger

Pervasive anger is a taxonomic distinction that is rated entirely from the offender's nonsex offense behavior. Thus, the indicators chosen were quite speculative. It is not surprising that they showed at best a low to moderate internal consistency in the FBI crime scene sample, and very low cross crime consistency in the composite sample. Because we had no specific crime scene variables that matched the two speculative FBI variables, we employed a generic aggression scale as a predictor of Pervasive Anger in an attempt to get some fix on what general measures of anger might be related to this distinction. Although it worked somewhat well, it was not a good match for the crime scene variables. It is probably safe to say that we are not going to be able to measure this taxonomic discriminator well from crime scene data, at least as derived from the data available to us at this time.

Sadism

The FBI crime scene sample revealed both relatively high internal and cross-crime consistency for the domain of Sadism with only three low to very low variable consistencies and two very high consistencies noted. It was surprising that some behaviors previously thought to be potentially strong indicators of sadistic behavior, such as vaginal penetration with an inanimate object and use of a foreign object during sex, actually showed only moderate item total correlations.

The discrimination of sadistic types from nonsadistic types in the MTC analog study did not fare as well as would be expected from the high FBI sample consistency results.

Although the negative prediction was extremely good, the positive identification of sadistic types from individual scene indicators did not do as well. This held rather consistently for all variables observed in this domain. The individual sadistic acts were not frequent even in sadistic offenders, so the sensitivity of the indicators was poor and consequently positive prediction was low. The composite sadism scale did somewhat better, but substantial work is necessary to boost the positive predictive power of these crime scene indicators. The identification of sadism indicators continues to be a difficult task and one in need of further refinement, if it is to be used successfully as a profiling determinant.

Sexualization

Although the sexualization variables did not hold together well within the crime in the FBI crime scene sample showing only very low to moderate consistency, the total composite scale evidenced moderate consistency across crimes. We did not have good measures of sexualization for individual crimes and what variables we did have did not fare well in the typological prediction analyses. Only fetishes showed significant positive prediction to sexualized types and even here the sensitivity was very low. Our questionnaire data (MASA) suggested that our judgments of sexualization from archival data, which was the source of the information for taxonomic classification, was poor. Obviously, we need better sexual behavior and fantasy data about the offender before we can classify him properly or determine the relation of crime scene data to his sexual behavior. In fact, this domain will be more differentiated in future profiling analyses.

Relationship with Victim During the Crime

As was seen in Tables 4 and 5 , summarizing FBI crime scene sample data, the

variables measuring the interaction between the offender and the victim showed both good internal consistency and moderate cross-crime consistency.

Although we did not have perfect analogs of the FBI scales, one of the three scales we were able to create from the MTC data was able to discriminate the Nonsadistic Sexual types from the rest of the types in the sample. Although negative prediction and sensitivity were moderate to high, the major problem with all three indicators in this scale (Sensitive Statements, Asking Victim Questions, Responsive to Victim Needs) was the low positive prediction. That is, a substantial number of offenders had these behaviors who were not classified as Nonsadistic Sexual types.

Sexualization and Relationship

Interestingly, when we combined the best sexualization predictor (fetishes) with the best relationship variable (sensitivity), we improved the prediction of Sexual types, which included both the Sadists and the Nonsadistic Sexual types. That sensitivity would increase this prediction would seem from the clinical literature to be counterintuitive, but it actually corresponds with some data on Intimacy-Seeking scale that we recently obtained from the MASA. When we trichotimized the two indicators (Fetishes/Sensitivity), we were able to increase prediction, but unfortunately a large number of offenders fell in the middle, indeterminate one-present category. Not surprisingly, the addition of fetishes to sensitivity does not improve the prediction of sensitivity to the Nonsadistic sexual types, because sadists have reported that they are highly sexualized on the MASA.

Vindictiveness

In the FBI crime scene sample, vindictiveness had both low internal consistency and

low cross-crime consistency. In the MTC data we had no good crime scene analogs for analysis. The sole criterion of loss of erection failed miserably. These data suggest that like Pervasive Anger, it might be difficult to get specific, or concrete, crime scene indicators of this dimension. It might be better to infer this type from the Adult Antisocial and the Expressive Aggression indicators, thereby integrating this variable into other domains and eliminating its direct assessment. Vindictives could potentially be identified simply as highly expressively aggressive offenders who have low evidence of antisocial behavior.

Offense Planning

Like Sadism, in the FBI crime scene sample the estimates of Offense Planning have both high internal consistency and high cross-crime consistency. In the MTC sample we had only general ratings of planning across crimes, and these measures did only moderately well in identifying the types that were suppose to exhibit high planning. Negative prediction was high, but positive prediction and sensitivity were low to moderate. The summative scale did fare somewhat better, but still exhibited low positive prediction. Offense planning promises to be a fruitful profiling domain, but requires significant reconceptualization. The factor analyses we have done on the MASA indicate that it is not a univocal domain, but rather comprises multiple components. the incorporation of these multiple dimensions into profiling research should enhance prediction.

Conclusions

These data show that crime scene indicators are good predictors of Adult Antisocial and Expressive Aggression. Sadism, Offense Planning, and Relationship with Victim in

crime were found to have high internal consistency within individual crimes and good to high cross-crime consistency, but they manifested limited taxonomic prediction. Their consistency should ultimately enable the identification of improved crime-scene predictors. The domain of Sexualization needs much better offender data before we will be able to determine whether viable crime scene indicators can be identified. Finally, consistent with the nature of their definition, Pervasive Anger and Vindictiveness are not likely candidates for crime scene identification.

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Figure Captions

Figure 1. Paradigm flowchart of bootstrapping of crime-scene correlates of offender characteristics.

Figure 2. Breakdown of four categorizations of rapist type into nine rapist subtypes.

APPENDIX E: STEADMAN CRIME CLASSIFICATION

CRIME CLASSIFICATION

ENT

Murder, Deliberate Homicide
Manslaughter
Attempted Murder, Attempted
Manslaughter
Aggravated Assault / Assault and Battery
Other Assault
Other or Unspecified Violent Crimes*

POTENTIALLY VIOLENT

Robbery
Kidnapping
Arson
Other or Unspecified Potentially Violent*

OTHER CRIMES AGAINST PERSON

Criminally Negligent Homicide,
Vehicular Homicide
Families and Children (contributing to the
delinquency of a minor)
Hit and Run
Coercion
Unlawful Imprisonment, Unlawful Restraint
Harassment, Verbal Assault (e.g., Simple
Assault, Terroristic Threat, Intimidation)
Criminal Possession of Weapon
Menacing
Reckless Endangerment
Other or Unspecified Crime Against
Person* (Conspiracy, Mutiny in a penal
institution) (Accessory to violent crime)

Forcible Rape
Forcible Sodomy
Statutory Rape (Consensual), Misdemeanor
Rape
Consensual Sodomy
Sexual Abuse, Sexual Assault
Sexual Misconduct
Incest
Lewd and Lascivious Conduct
Other or Unspecified Sex Crime

PROPERTY

50 = Burglary, Breaking and Entering
51 = Criminal Mischief, Tampering
52 = Criminal Trespassing, Unlawful Ent
53 = Larceny (Grand and Petty)
54 = Auto Theft
55 = Theft, Shoplifting, Pickpocketing (auto theft)
56 = Possession of Stolen Property, Criminal Receiving
57 = Forgery and Counterfeiting
58 = Fraud (Deceptive Practices), False Records, Embezzlement
59 = Forged Check, Bad Check, Theft of
60 = Bribery
61 = Conspiracy
69 = Other or Unspecified Property Crime (Possession of a Forged Instrument)

DRUG

70 = Drug, Selling Dangerous
71 = Drug, Possession Dangerous
79 = Other or Unspecified Drug (possession of a forged drug document illegal Rx)

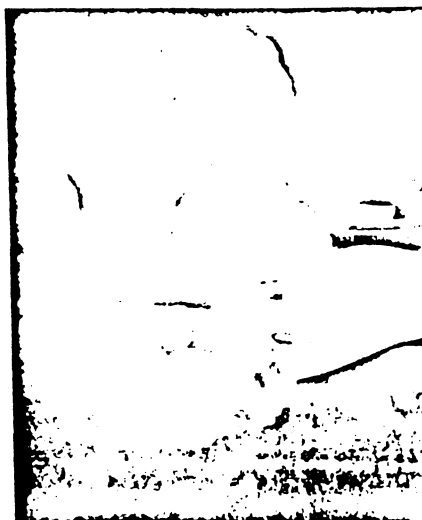
MINOR

80 = Parole Violation
81 = Probation Violation
82 = DWI, DUI
83 = Public Intoxication, Drunkenness
84 = Court Related Offenses (warrants, failure to appear, escape, bail jumping)
85 = Gambling
86 = Criminal Nuisance
87 = Disorderly Conduct, Breach of Resisting Arrest
88 = Loitering, Vagrancy
89 = Indecent Exposure, Obscenity, Lewdness
90 = Traffic Infractions
91 = Prostitution, Pandering
97 = Other or Unspecified Minor Offenses

98 = No Crime
99 = No Information

APPENDIX F: TURNER-RATLEDGE CRIMINAL HISTORY INDEX

Basic Issues in Prosecution and Public Defender Performance



**PUBLIC OVERSIGHT • AG
MISSIONS • ACCOUNTABI
PROGRAM EVALUATIONS
PERFORMANCE ATTRIBU
RESPONSIVENESS • EQL
EFFECTIVENESS • DUE
PROCESS • SOCIAL
VALUES • REHABILITATIO
CRIME CONTROL • JUSTI
PUBLIC CONFIDENCE
AGENCY MANAGEMENT
PRODUCTIVITY • RESOU
ALLOCATION • STAFF
MORALE • COST CONTRI**

Basic Issues in Prosecution and Public Defender Performance

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July 1982

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National Institute of Justice

National Institute of Justice

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This project was supported by Grant Number 78-NI-AX-0091, awarded to the Bureau of Social Science Research, Inc., by the National Institute of Justice, U.S. Department of Justice, under the Omnibus Crime Control and Safe Streets Act of 1968, as amended. Points of view or opinions stated in this document are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice.

APPENDIX A

TOWARD A COMPOSITE INDEX OF CRIMINALITY

Stanley H. Turner
Edward C. Ratledge

TOWARD A COMPOSITE INDEX OF CRIMINALITY

Stanley H. Turner

Edward C. Ratledge

A. Introduction

Current research on prosecutor's decisions and decisionmaking systems has been based on the assumption that decisions can be explained by using three variables: (1) the seriousness of the instant offense, (2) the prior record of the defendant, and (3) the evidentiary strength of the case (Jacoby, Mellon, Turner, Ratledge, 1980). An index measuring the first of these variables has been fairly well established based on the work of Sellin and Wolfgang (1964) which describes offense seriousness sufficiently for decisionmaking research. In contrast, the second and third variables require a fresh start. A search of the literature failed to reveal a single study in which the "criminality" of an offender's prior record could be assessed on an internal scale. Yet, its value and utility to researchers and practitioners alike is obvious. Similarly, little attention has been given to developing scales that measure the legal-evidentiary strength of cases (Mellon, 1980).

The single purpose of this paper is to report on the development of an objective measure of criminality that reproduces the judgments of experienced prosecutors as to the overall criminality of an offender. Its focus is explicitly on the prior record of the offender and it includes only variables typically found in a criminal history. Thus, the current offense, the type of defense, the offender's background and other variables have been excluded from consideration. The result is a provisional composite index of criminality that can be applied to any criminal history so that its relative seriousness can be measured.

B. Background

The use of criminal histories in criminal justice decisionmaking processes is a sensitive area and one replete with ethical considerations. In general, four positions are held with respect to the use of prior records.

1. The prior record of an offender should never be used in making decisions about the defendant under any circumstances.-- This is equivalent to saying that the prior record should not be collected at all. It represents a position that no information is, at least in this instance, ethically superior to some information. This position might be motivated from the belief that the information may not be accurate, that the defendant may not have really been guilty, or that, even if truthful, information about the past should not be used for present decisions.

2. The Prior record of an offender should always be used

against him.--This represents the belief that the past can always be used to evaluate the present. In its extreme form, no criminal record should ever be expunged.

3. The prior record of an offender should be used only by the prosecutor and the courts in making a decision about a defendant.--The emphasis is not on the question of whether it's just or unjust for others to use criminal histories but rather whether it's just for the criminal justice system to use the information in the prosecution and sentencing of the defendant.

4. Only part of the prior record of the offender should be used by the criminal justice system in making decisions about the offender.--This position would allow access only to the segment of a prior record where the defendant was convicted. Segments of the prior record that do not have findings of guilty, i.e., acquittals, dismissals, and findings of not guilty, should be removed.

The first two positions are discussed indirectly in Punishment Response (Newman, 1978) where somewhat similar issues are discussed within the framework of contemporary criminology. This paper, assumes the third position, namely, that it is legitimate for a prosecutor to possess and act upon the prior record of the defendant. Additionally, it indirectly addresses position 4, the difference between total and partial disclosure, by examining whether prosecutors make different decisions when they have a complete criminal history or an incomplete one that records only findings of guilt.

C. Design

The study originally was started with a sample of prior records based on real criminal histories held by the state of New Jersey. All identifying information was eliminated from the histories, thereby producing an edited file of prior records containing essentially a sequence of offenses characterized by the date of commission and the disposition. A second edit eliminated offenses which were peculiar to a limited number of jurisdictions, since we wanted a jurisdictionally independent data set based on real cases.

These criminal histories were tested by two groups--college students and a small sample of prosecutors. None of the prosecutors and only a few of the students had difficulty in ranking the criminal histories by order of seriousness. The major difficulty encountered by some students was their inability to comprehend the legal label. The titles were again edited into clear equivalence. For example, a prosecutor might be very familiar with DUI, Driving Under the Influence, whereas this title would seem arcane to a student. Each subject was asked to indicate the seriousness of the record on a equal step scale ranging on the first test from 1 to 11, then on the second from 1 to 7 and finally, 1 to 5. The experimental data showed that the same amount of information is contained in a scale with 5 steps as a scale with a greater number of alternatives. In fact, the difficulty involved with offering a greater number of alternatives is that the subject views the

task as arbitrary and cannot decide between a 9 and a 10, for example.

The results of the pretest indicated that the experiment was feasible and that better results could be achieved by developing a simulated set of criminal histories. The advantage of using simulated data lies in the fact that the variables to be tested are completely under the control of the experimenter. The exact variables that have been admitted into the equations are known as are their distributions. As a result, precise statements can be made in every case about what combinations of variables generated each history. This advantage is not true if a sample of cases derived from the real world is utilized. The general analytical design, then, was to sample real records; pretest them on available groups; examine the results and hypothesize what variables work; specify these variables; find their distribution; and thus generate a fully simulated set of prior records. Of course, there is no absolute technique for generating all of the relevant variables. Theory, guess work, trial and error, all contributed to the generation of a list of plausible variables that were to be tested for their ability to distinguish the seriousness of one prior record from another. These variables were classified into four groups.

1. Length of record.--It seemed reasonable that, all other things being equal, a longer record would be more serious than a short one. Thus, criminal histories should vary from a minimal length which is zero (a person with no prior record) up to a realistic length.

2. Seriousness of each offense listed in the prior record.--All other things being equal, a prior record containing more serious offenses should rate higher than one having less serious offenses.

3. Dispositional information.--Dispositional information included the outcome of the case but not the sentence. Arrests with convictions were assumed to be more serious than arrests with acquittals.

4. Patterns.--Although two prior records may have the same seriousness and indeed the same length and identical disposition information, it was assumed that they would be different because of the progression of the events involved. After some investigation, however, the complexity of this variable could not be overcome. Therefore random patterns were used in this experiment. (It is interesting to note that some who evaluated these criminal histories insisted that they saw patterns in the records even though they were truly randomized.)

5. Time.--It was assumed that prosecutors view offenses committed a long time ago as less worthy of concern than more recent crimes. In a sense one could assume the operation of a discount rate; that is, the human tendency to forgive offenses committed in the past. Each offense was characterized as having an age, i.e., the number of years since it was committed. Further, the amount of time between offenses (spacing) was considered. Some prior research in the field has indicated that if there are lengthy periods between

offenses, the probability of recidivism is lower. Additionally, time between offenses in which the offender was not institutionalized had to be accounted for. The effects of time and spacing are not addressed in this paper since they are still under investigation.

D. Simulation

Computer programs were written to generate the criminal histories and the independent variables described above. Because of this simulation approach, only the measurement of the dependent variable was required. The program was designed with eight different random number generators. The generator in all cases delivered a number between 0 and 1 on a uniform probability distribution. Each chosen value was multiplied by 100 and then was mapped into one of the distributions related to the variable of interest. The first random variable governed the length of the record. The range of this variable was 0 to 15. The mapping distribution for length was: 0 equal 7%, 1 equal 10%, 2 equal 13%, 4 equal 10%, 5 equal 10%, 6 equal 10%, 7 equal 7%, 8 equal 6%, 9 equal 5%, 10 equal 3%, 11 equal 3%, 12 equal 2%, 13 equal 2%, 14 equal 1%, 15 equal 1%.

With the length determined, the next variable to be generated was the proportion of the total events which would be crimes against the person (CAPERS). The mapping distribution for CAPERS was: 10% equal 5%, 20% equal 10%, 30% equal 15%, 40% equal 20%, 50% equal 15%, 60% equal 10%, 70% equal 10%, 80% equal 5%, 90% equal 3%, 100% equal 2%. This distribution is interpreted as "10% of the criminal histories will have 5% of the events as CAPERS" likewise 2% of the criminal histories will have all 100% of the entries, as CAPERS. As in all other cases, these distributions were derived from the Uniform Crime Report. Once the number of crimes against the person was determined, the number of "all other crimes" (CNPERS) was also set. It represents the difference between the total number of arrests and number of arrests for crimes against the person.

The third random number generator was used to make sure the order of crimes on the sheet was random (without pattern). The probability of CAPERS or a CNPERS was set at .5 and as long as there were patterns within these histories, they were generated only by chance.

The fourth generator determined which of the CNPERS was chosen. The mapping distribution derived from the UCR was as follows: Burglary equal 12%, Larceny equal 22%, Auto Theft equal 5%, Arson equal 1%, Disorderly Conduct equal 12%, Forgery equal 7%, Receiving Stolen Property equal 2%, Concealed Weapon (Deadly) equal 6%, Possession of Heroin equal 3%, Possession of Marijuana equal 4%, Sale of Heroin equal 3%, Sale of Marijuana equal 3%, Drunkenness equal 7%, Drunk Driving equal 8%.

The fifth generator determined which CAPERS was chosen. The mapping distribution used was as follows: Homicide equal 3%, Rape equal

3%, Robbery equal 11%, Aggravated Assault equal 24%, and Assault equal 59%.

A sixth generator was used to select disposition for "CAPERS" and "CNPERS." The mapping distribution was Dismissals equal 31%, Convictions equal 65%, and Acquittals equal 4%. This distribution was based on the results of A Cross-City Comparison of Felony Case Processing, conducted by Kathleen Brossi for the National Institute of Justice in 1979.

When the complete criminal record was selected, two things remained. First, spacing had to be established between entries on the criminal history and second, a birth date had to be determined. These functions were handled by generators seven and eight. Generator seven determined the month of the last event and eight determined the spacing. This was also coordinated with a distribution for the likely amount of jail time if the defendant was convicted of any of the crimes.¹ The dates are generated backwards with the final calculation being the birth date of the defendant.

In the final run, 9,000 criminal histories were simulated of which 6,778 were evaluated by the Kings County (Brooklyn) New York District Attorneys Office. During the experiment each of 226 attorneys rated a set of 30 criminal histories on a seriousness scale of 1 to 5. The test were conducted in the Spring of 1980.

E. Analysis

Three models are presented here. The first model employs a variable for the length of the record; a separate dummy variable for each crime that the individual was arrested for; and a dummy variable for each crime that resulted in a conviction. This procedure yielded a total of 41 variables for analysis. This model is concerned only with whether the person was ever arrested or ever convicted of a given crime without the number of times. Separate analyses were also carried out with a continuous variable for each crime but the distributions were quite skewed.²

The results for the first model are found in Table A-1. The explained variance is 61% which is quite satisfactory given the fact that the dependent variable is discrete (1 to 5). The overall model is significant at the .001 level (F equal 256).

1. The coefficient for length is only .07 which means that the length of the record, by itself, can only shift the criminality index by

¹Annual Report of the Proceedings of the Judicial Conference of the United States, p. 268, U.S. Govt. Printing Office.

²Originally we had anticipated using Sellin-Wolfgang scores for each offense but since this is equivalent to using dummy variables for each crime it was not employed.

1 unit on the 1 to 5 scale (.07 x 15).

2. Among the arrest variables only certain crimes are significant, at least in the view of this group of attorneys; (1) Homicide, Robbery, (2) Aggravated Assault, (3) Assault (4) Disorderly Conduct (negative sign), (5) Possession of Marijuana (negative sign), (6) Sale of Marijuana (negative sign), (7) Drunkenness (negative sign), (8) DUI (negative sign). For the major violent crimes (with the notable exception of rape arrests) the effect is to increase the index. For the relatively trivial offenses, the effect is to decrease the index.

3. The conviction variables are for the most part significant, and some of the contrasts with arrest coefficients are striking. Homicide has a coefficient of 1.09 if convicted and .35 if arrested. A rape conviction has a score of .86 but an arrest without conviction has no value at all. Convictions for assault and aggravated assault are weighted equally at .50. Auto theft (.13), fraud (.14) and forgery (.12) have similar coefficients. Of interest is the fact that an arson conviction (.60) is viewed as a very serious matter. Based on past experience, this apparently reflects the inherent possibility of serious injury. Carrying a concealed deadly weapon also has a relatively large score (.5) which places it in the same category with robbery, assault, and arson. Convictions for the possession of drugs are important, but arrests are not. For convictions, heroin possession (.30) is about 3 times more important than marijuana (.11). Sales of heroin are twice as important as possession of heroin (.59 versus .30) but marijuana sales are of the same magnitude as possession (.11 versus .10). Basically, the alcohol (.15) and marijuana related offenses are viewed as equivalent and not important.

The second model, shown in Table A-2, omits all of the arrest variables and considers only convictions. For all practical purposes, the explained variance is unchanged with the removal of these variables. This model in our opinion is superior since it is simpler. The coefficient for length of record remains about the same (.066), however each of the other coefficients increase in value but the general order of importance remains the same; (1) Homicide, (2) Rape, (3) Robbery, (4) Arson, (5) Assault, (6) Sale of Heroin, (7) Concealed Deadly Weapon, (8) Burglary, (9) All others. It is clear that there is an implicit ordering with respect to the implied level of injury.

These results suggest that it is possible to numerically evaluate a criminal history.

A operational model is estimated for this purpose and is shown in Table A-3. These results are then translated into an index by a process of answering a series of questions that have weights attached to them. This follows:

CRIMINALITY SCORE, CRIME CONVICTION SCORES, AND EXAMPLE

Add the following numbers
if answer is: Yes

| QUESTION | YES | NO |
|--|-----|----|
| 1. Has the defendant ever been arrested? | 25 | |
| 2. Has the defendant ever been convicted? | 84 | 25 |
| 3. How many convictions (enter number multiplied by 19 under yes) | — | |
| 4. How serious were the crimes for which the defendant was convicted? Add all conviction numbers applicable, enter under yes column (see table below) | — | |
| TOTAL CRIMINALITY SCORE | — | |

| CRIME CONVICTION SCORES | | | |
|-------------------------|-----|---------------------------|-----|
| Homicide..... | 125 | Larceny..... | - 3 |
| Rape..... | 74 | Forgery..... | - 3 |
| Arson..... | 57 | Receiving Stolen | |
| Robbery..... | 56 | Property..... | - 3 |
| Sale Heroin..... | 40 | Fraud..... | - 8 |
| Aggravated Assault..... | 31 | Possession of Heroin..... | - 9 |
| Carrying Concealed | | Auto Theft..... | - 9 |
| and Dangerous | | Sale of Marijuana..... | -15 |
| Weapon (CCDW)..... | 26 | Driving While | |
| Assault..... | 22 | Intoxicated..... | -18 |
| Burglary..... | 18 | Drunk..... | -26 |
| | | Disorderly Conduct..... | -26 |

EXAMPLE: If a defendant has been convicted of Burglary, Homicide and Disorderly Conduct, the criminality scores would be calculated as follows:

| | |
|--------------------------------|-------------|
| Arrested (yes) | 25 |
| Convicted (yes) | 84 |
| Number of Convictions (3)..... | 57 (3 x 19) |
| Burglary (yes) | 18 |
| Homicide (yes) | 125 |
| Disorderly conduct (yes) | -26 |
| TOTAL..... | 284 |

F. Conclusions

The index as currently constructed, has several shortcomings. First, we have not as yet dealt with the spacing or decay factors in evaluating the criminal history. This work is on-going but the results at this time are inclusive. Second, we would like to expand the index to incorporate multiple convictions for the same crime although there are clearly non-linearities involved and the index will become more complex. Third, we have not allowed "attempts" in the simulated histories, thus they cannot be rated in the index. These will be included in subsequent applications of this work. Fourth, while we feel from our work in a large number of sites that jurisdictional differences are generally overstated, the fact remains that we must administer the instrument outside of Brooklyn for validation. Finally, we chose not to deal with incomplete information. Not all criminal histories have complete dispositional information. Thus the effects of operationalizing the index where conviction information is missing may be significant.

Despite these limitations, this provisional index is clearly a good first step towards a composite measure of criminality.

TABLE A-1

MODEL 1: ARREST AND CONVICTIONS

| <u>VARIABLE</u> | <u>B</u> | <u>F</u> * |
|--|----------|------------|
| Length of Record..... | .072 | 118.802 |
| Arrests: Homicide..... | .345 | 24.379 |
| Arrests: Rape..... | .039 | 0.322 |
| Arrests: Robbery..... | .054 | 1.774 |
| Arrests: Aggravated Assault..... | .056 | 2.912 |
| Arrests: Assault..... | .101 | 11.376 |
| Arrests: Burglary..... | .010 | 0.089 |
| Arrests: Larceny..... | -.036 | 1.314 |
| Arrests: Auto Theft..... | -.027 | 0.359 |
| Arrests: Arson..... | .114 | 1.189 |
| Arrests: Disorderly Conduct..... | -.067 | 3.751 |
| Arrests: Forgery..... | .032 | 0.425 |
| Arrests: Fraud..... | -.049 | 1.372 |
| Arrests: Receiving Stolen Property..... | .052 | 0.554 |
| Arrests: CCDW..... | -.033 | 0.585 |
| Arrests: Possession Heroin..... | -.043 | 0.733 |
| Arrests: Possession Marijuana..... | -.193 | 15.602 |
| Arrests: Sale Heroin..... | -.011 | 0.036 |
| Arrests: Sale Marijuana..... | -.086 | 2.156 |
| Arrests: Drunkenness..... | -.246 | 35.677 |
| Arrests: DUI..... | -.138 | 13.281 |
| Convicts: Homicide..... | 1.095 | 173.300 |
| Convicts: Rape..... | .864 | 108.927 |
| Convicts: Robbery..... | .724 | 246.599 |
| Convicts: Aggravated Assault..... | .503 | 205.336 |
| Convicts: Assault..... | .500 | 304.671 |
| Convicts: Burglary..... | .375 | 102.186 |
| Convicts: Larceny..... | .254 | 60.296 |
| Convicts: Auto Theft..... | .132 | 6.295 |
| Convicts: Arson..... | .599 | 23.452 |
| Convicts: Disorderly Conduct..... | .006 | 0.024 |
| Convicts: Forgery..... | .116 | 3.972 |
| Convicts: Fraud..... | .144 | 9.348 |
| Convicts: Receiving Stolen Property..... | .050 | 0.351 |
| Convicts: CCDW..... | .501 | 100.790 |
| Convicts: Possession Heroin..... | .302 | 25.638 |
| Convicts: Possession Marijuana..... | .113 | 3.879 |
| Convicts: Sale Heroin..... | .594 | 79.651 |
| Convicts: Sale Marijuana..... | .098 | 2.016 |
| Convicts: Drunkenness..... | .151 | 10.266 |
| Convicts: DUI..... | .134 | 9.667 |
| (CONSTANT) | 1.621 | ----- |

$$R^2 = .609$$

$$F(41, 6736) = 256$$

$$F_{.01} = 1.5$$

TABLE A-2

MODEL 2: CONVICTIONS ONLY

| <u>VARIABLE</u> | <u>B</u> | <u>F</u> |
|--|----------|----------|
| Length of Record..... | .066 | 181.833 |
| Convicts: Homicide..... | 1.446 | 862.614 |
| Convicts: Rape..... | .918 | 338.880 |
| Convicts: Robbery..... | .788 | 742.218 |
| Convicts: Aggravated Assault..... | .565 | 590.279 |
| Convicts: Assault..... | .582 | 749.695 |
| Convicts: Burglary..... | .383 | 236.821 |
| Convicts: Larceny..... | .221 | 102.790 |
| Convicts: Auto Theft..... | .113 | 12.072 |
| Convicts: Arson..... | .692 | 100.813 |
| Convicts: Disorderly Conduct..... | -.051 | 4.261 |
| Convicts: Forgery..... | .152 | 18.168 |
| Convicts: Fraud..... | .099 | 11.359 |
| Convicts: Receiving Stolen Property..... | .106 | 4.567 |
| Convicts: CCDW..... | .470 | 234.520 |
| Convicts: Possession Heroin..... | .255 | 48.872 |
| Convicts: Possession Marijuana..... | -.072 | 4.188 |
| Convicts: Sale Heroin..... | .579 | 201.747 |
| Convicts: Sale Marijuana..... | .026 | 0.417 |
| Convicts: Drunkenness..... | .074 | 6.237 |
| Convicts: DUI..... | .009 | 0.111 |
| (CONSTANT)..... | 1.629 | ----- |

$$R^2 = .602$$

$$F(21, 6756) = 487$$

$$*F_{.01} = 1.8$$

$$F_{.05} = 1.5$$

TABLE A-3

MODEL 3: OPERATIONAL VERSION

| <u>VARIABLE</u> | <u>B</u> | <u>F*</u> |
|-----------------------------------|----------|-----------|
| Convicts: Homicide..... | 1.249 | 725.028 |
| Convicts: Rape..... | .744 | 251.329 |
| Convicts: Robbery..... | .564 | 390.901 |
| Convicts: Agg. Assault..... | .311 | 167.152 |
| Convicts: Assault..... | .221 | 86.815 |
| Convicts: Burglary..... | .177 | 51.253 |
| Convicts: Larceny..... | -.028 | 1.603 |
| Convicts: Auto Theft..... | -.089 | 8.018 |
| Convicts: Arson..... | .567 | 78.221 |
| Convicts: Disorderly Conduct..... | .263 | 115.365 |
| Convicts: Forgery..... | -.027 | 0.617 |
| Convicts: Fraud..... | -.082 | 8.310 |
| Convicts: Receiving..... | -.030 | 0.417 |
| Convicts: CDW..... | .261 | 77.029 |
| Convicts: Possession Heroin..... | -.089 | 6.590 |
| Convicts: Possession Marij..... | -.259 | 59.184 |
| Convicts: Sale Heroin..... | .399 | 107.844 |
| Convicts: Sale Marij..... | -.154 | 15.905 |
| Convicts: Drunkenness..... | -.261 | 82.892 |
| Convicts: DUI..... | -.176 | 43.172 |
| # of convictions..... | .189 | 437.551 |
| Ever arrested..... | .248 | 27.137 |
| Ever convicted..... | .841 | 450.768 |
| (CONSTANT)..... | 1.002 | ----- |

$$R^2 = .661$$

$$F(23, 6754) = 571$$

$$*F_{.01} = 1.8$$

$$F_{.05} = 1.5$$